Indira Gandhi National Open University
SCHOOL OF HEALTH SCIENCE

CHO-0003

Public Health and Primary Health Care Skills

NATIONAL HEALTH MISSION
राष्ट्रीय स्वास्थ्य मिशन
राजस्थान



Skills for Management of Common Conditions and Emergencies

3

Indira Gandhi National Open University
SCHOOL OF HEALTH SCIENCE

CHO-0003

Public Health and Primary Health Care Skills

राष्ट्रीय स्वास्थ्य मिशन
राजस्थान

Skills for Management of Common Conditions and Emergencies

3

ignou
THE PEOPLE'S
UNIVERSITY

Indira Gandhi
National Open University
School of Health Sciences

CHO-0003
Public Health and Primary Health Care Skills

Block

3

SKILLS FOR MANAGEMENT OF COMMON CONDITIONS AND EMERGENCIES

UNIT 1
Basic Life Support (BLS) 5

UNIT 2
Assessment and Management of Fevers 17

UNIT 3
Management of Common Aches and Pains 45

UNIT 4
First Aid Techniques and Stabilisation Care in Common Emergencies-1 61

UNIT 5
First Aid Techniques and Stabilisation Care in Common Emergencies-2 106

UNIT 6
Geriatric and Palliative Care 118

Appreciation of Collaborative Efforts

The development of this Training Module for Community Health Officers (CHOs) is the result of a collaborative effort led by the Department of Medical, Health & Family Welfare, Government of Rajasthan, with valuable technical support from development partners. We sincerely thank all Directors, Project Directors, State Nodal Officers, and technical partners including Jhpiego, WHO, UNICEF, UNFPA, UNDP, IPE Global, IPAS, Evidence Action, JSI and others for their contributions. Their expertise, evidence-based inputs, and field insights have ensured the relevance and quality of this resource. This module aims to strengthen CHOs' capacity to deliver comprehensive, people-centered care at the community level, advancing our shared goal of improved health outcomes for all.

Acknowledging Contributors

The table below highlights the key contributors who played a critical role in the module's development, coordination, technical review, and partner support:

Coordination Committee

Dr. Rommel Singh (AD-Plan)	Ms. Shibumi Prem (Regional PO, Jhpiego)
Ms. Rachana (District Program Officer-NHM)	Dr. Manoj Sharma (Nursing Tutor)

OICs

Dr. Mushtaq Khan (SNO-MNJY)	Dr. Tarun Chaudhary (PD-MH)
Dr. Praveen Aswal (AD-RH)	Dr. Surendra Singh Shekhawat (PD-FW)
Dr. Pradeep Kr. Choudhary (PD- CH)	Dr. Mukesh Digarwal (PD-RKSK/RBSK & AD Ayush)
Dr. S.M. Swami (SNO-NMHP)	Dr. Raghraj Singh (PD-Immunization)
Dr. Nirmala Sharma (Deputy Director Malaria)	Sh. Rajendra Bhakher (Demographer, NHM)

Responsible Partner Coordinators

Mr. Arun Vashisht (NHM, Jaipur)	Ms. Karuna Singh (IPAS)
Dr. Zakariya Chouhan (WHO)	Mr. Devi Prasad Verma (IPAS)
Dr. Rashi Gupta (Jhpiego)	Ms. Manjri Singh (UNICEF)
Ms. Dande Venkata Sireesha (Jhpiego)	Dr. Kapil Agarwal (UNICEF)
Dr. Eshvita Bhadoo (Jhpiego)	Mr. Krishan Gopal Soni (UNFPA)
Dr. Pradeep Chaudhary (NIPI)	Mr Siyaram Sharma (UNFPA)
Ms. Pricella Bassin (IPE Global)	Dr. Abhay Bora (JSI)
Ms. Molshree Rathore (Evidence Action)	Mr. Mudit (UNDP)

CURRICULUM DESIGN COMMITTEE AND EXPERT COMMITTEE

Prof. (Dr.) Pity Koul
Director and Programme Coordinator

Dr. R.S Salhan
Additional DGHS (Retd.) Advisor, NHSRC, New Delhi

Dr. R.K Srivastava
Former DGHS, Govt. of India New Delhi

Dr. Suneela Garg
Sub Dean & Head Dept. of Community Medicine, MAMC , New Delhi

Dr. Amarjeet Singh
Professor, Dept. of Community Medicine PGIMER, Chandigarh

Dr. Subodh. S. Gupta
Professor, Dept. of Community Medicine, MGIMS, Sevagram, Wardha

Mrs. Santosh Mehta
Principal, RAK College of Nursing, Lajpat Nagar, New Delhi

Dr. Prakasamma
Former Director, National Academy of Nursing Studies and Woman Empowerment (ANSWER) Hyderabad

Dr. Sushma Kumari Saini
National Institute of Nursing Education (NINE) PGIMER, Chandigarh. (U.T)

Dr. Sanjay Rai
Associate Professor Department of Community Medicine, AIIMS, New Delhi

Dr. Himanshu Bhushan
Advisor, NHSRC, New Delhi

Dr. Rajni Ved
Advisor, NHSRC, New Delhi

Dr. Dilip Singh
Advisor, NHSRC, New Delhi

Dr. Vinay Bothra
Sr, Consultant, NHSRC

Dr. Sumitha Chalil
NHM, MoHFW, New Delhi

Dr. Reeta Devi
Assist. Prof. (Sr. Scale) & programme Coordinator

Mrs. Rohini Bhardwaj Sharma
Assist. Prof. IGNOU

CURRICULUM DESIGN COMMITTEE

Prof. (Dr.) Pity Koul
Director and Programme Coordinator

Dr. R.S Salhan
Additional DGHS (Retd.) Advisor, NHSRC, New Delhi

Dr. R.K Srivastava
Former DGHS, Govt. of India New Delhi

Dr. Suneela Garg
Sub Dean & Head Department of Community Medicine, MAMC, New Delhi

Dr. Amarjeet Singh
Professor, Medicine PGIMER, Chandigarh

Dr. Subodh. S. Gupta
Professor, MGIMS, Sevagram, Wardha

Mrs.Santosh Mehta
RAK College of Nursing, Lajpat Nagar, New Delhi

Dr. Prakasamma
National Academy of Nursing Studies and Woman Empowerment (ANSWER) Hyderabad

Dr. Sushma Kumari Saini
National Institute of Nursing Education (NINE) PGIMER, Chandigarh. (U.T)

Dr. Sanjay Rai
Associate Professor Department of Community Medicine, AIIMS, New Delhi

Dr. Rajni Ved
Advisor, NHSRC, New Delhi

Dr. Vinay Bothra
Sr, Consultant, NHSRC

Dr. Sumitha Chalil
NHM, MoHFW, New Delhi

Dr. Reeta Devi
Assist. Prof. (Sr. Scale)

Mrs. Rohini Bhardwaj Sharma
Assist. Prof. IGNOU

BLOCK PREPARATION TEAM

Writers

Unit-1 and 6 **Dr. Sukhpal Lecturer,** National Institute of Nursing Education (NINE), PGIMER Chandigarh

Unit-2 **Dr. Kamlesh Sharma** Associate Professor, AIIMS, New Delhi

Unit-3 **Ms. Rohini Sharma** Assistant Professor SOHS, IGNOU

Unit-4 **Dr. Dilshada Wani** Professor, SKIMS, Soura, Sri Nagar Jammu

Unit- 5 **Dr. H.C Rawat** Principal, College of Nursing (CON), Baba Farid University, Fardikot, Punjab

Editors

Dr. R.S Salhan
Additional DGHS (Retd.)
Advisor, NHSRC,
New Delhi

Unit Transformation and format editing

Prof. (Dr.) Pity Koul
Director and Programme Coordinator

Dr. Reeta Devi
Assist. Prof. (Sr. Scale) & Programme Coordinator

COURSE REVIEW COMMITTEE

Dr. Rajesh Kumar
Prof. & Head, Dept. of Community Medicine, PGIMER, Chandigarh

Dr. Suneela Garg
Sub Dean & Head
MAMC, Departmant of Community medicine, New Delhi

Dr. Himanshu Bhushan
Advisor, NHSRC, New Delhi

Dr. A.K. Sood
Prof. & Dean of Educations & Training, NIHFW, New Delhi

Dr. Prabir Chatterjee

SHRC, Chattisgarh

Dr. S.B Sinha
Advisor HCT, NHSRC

Dr. M.M.Singh
Director & Professor MAMC, Community Medicine, New Delhi

Dr. Jugal Kishore
Director Professor VMMC, Safdarjung Hospital, New Delhi

Dr. Najam Khalique
Department of Community Medicine AMU, Uttar Pradesh

Dr. Dilip Singh Mairembam
Advisor, NHSRC, New Delhi

Dr. Manju Rani

WHO

Dr. Radhika Gupta
Consultant, NHSRC

Dr. Vinay Bothra
Sr, Consultant, NHSRC

Faculty SOHS, IGNOU

Prof. (Dr.) Pity Koul
Director and Programme Coordinator

Dr. Reeta Devi
Assist. Prof. (Sr. Scale) & programme Coordinator

Mrs. Rohini Bhardwaj Sharma
Assist. Prof.

Brig.(Dr) Kanchan Sharma (Retd.)
Senior Consultant, IGNOU
R.K. Puram, New Delhi

CO-ORDINATION

Prof. (Dr.) Pity Koul
Director & Programme Coordinator
School of Health Sciences, IGNOU, New Delhi

Dr. Reeta Devi
Asstt. Professor. (Sr. Scale) & Programme Coordinator
School of Health Sciences, IGNOU, New Delhi

PRODUCTION

Mr. T.R. Manoj
Assistant Registrar (P)
SOHS, IGNOU, New Delhi

May, 2017
© Indira Gandhi National Open University, 2016
ISBN :
All rights reserved. No part of this work may be reproduced in any form, by mimeograph or any other means, without permission in writing from the Indira Gandhi National Open University.
Further information about the School of Health Sciences and the Indira Gandhi National Open University courses may be obtained from the University's office at Maidan Garhi, New Delhi-110 068.
Printed and published on behalf of the Indira Gandhi National Open University, New Delhi by **Prof. Pity Koul, Director**, School of Health Sciences.
We acknowledge the reference of material and figures from various sources like NNF, AIIMS, WHO, UNICEF, IGNOU, Govt. of India etc.
Laser Typesetting and Printed at : **Rajasthan State Cooperative Press Ltd., Jaipur**

BLOCK INTRODUCTION

You as a Mid level health care provider (MLHP) may come across various types of health problems, such as, a person may have suddenly stopped breathing or met with a fainting attack or is in state of semi- consciousness or coma. So you must be able to provide basic life support for maintain airway, breathing and circulation appropriately to save the life of the person.

Assessment and Management of Fevers dealt in this block will acquaint you with most of the common illnesses, its assessment, initial management and referral. Various conditions present in the form of aches and pain as symptoms of disease. This practical shall enable you to identify, provide care, manage and refer appropriately the cases of aches and pains. You will also develop skills in managing the cases of abdominal pain, chest pain, Joint pain, and swelling and make appropriate referral in such cases.

Practical on First Aid techniques and stabilization care in common emergences will help you in providing the basic life saving measures for acute emergencies e.g. high fever, hyperglycemic shock (diabetic coma), hypoglycemic shock (insulin coma), fractures, wounds, minor injuries, drowning and surgical trauma, fainting, bleeding, shock, burns, bites, poisoning etc. in order to reduce the magnitude of deaths particularly in the areas where these conditions prevail and where unfortunately the appropriate medical facilities are not available.

Practical on Geriatric and Palliative care focuses on the care of an elderly person who becomes susceptible to both the acute and chronic health problems including heart diseases, cerebrovascular diseases, respiratory diseases and cancer etc. The focuses is also on Primary management of chronic conditions such as dementia, osteoporosis and arthritis etc. which are more commonly found in women.

This block consists of six units as given below

Unit 1 focuses on Basic Life Support (BLS)

Unit 2 focuses on Assessment and Management of Common Fevers

Unit 3 deals with Management of Common Aches and Pains

Unit 4 relates to First Aid techniques and Stabilization care in Common Emergencies-1

Unit 5 focuses to First Aid Techniques and Stabilization care in Common Emergencies-2

Unit 6 relates on Geriatric and Palliative care

We hope the information given in this Block may help you in developing skills to manage common conditions and emergencies and provide first aid.

UNIT 1 BASIC LIFE SUPPORT (BLS)

Structure

1.0 Introduction

1.1 Objectives

1.2 Meaning and Concept of Basic Life Support (BLS)

1.3 Indications for Basic Life Support (BLS)

- 1.3.1 Respiratory Arrest
- 1.3.2 Cardiac Arrest

1.4 Steps of Basic Life Support

- 1.4.1 Primary Assessment of the Unresponsive Adult Patient
- 1.4.2 Respiratory Arrest
- 1.4.3 Cardiac Arrest
- 1.4.4 Adult Cardiac Chain of Survival
- 1.4.5 Providing CPR for Adults

1.5 Let Us Sum Up

1.6 Activity

1.7 References

1.0 INTRODUCTION

In the previous block we have discussed basic tests which are carried out for identification and confirmation of the common conditions. You may come across wide variety of health problems such as a person suddenly stopped breathing or had fainting attack, semi-conscious or in state of coma. Hence, in this unit we will discuss how to provide basic life support, indications, steps to be followed and care. We will also distinguish between respiratory attack and cardiac arrest.

1.1 OBJECTIVES

After completing this unit, you should be able to:

- define Basic Life Support;
- define the adult cardiac chain of support;
- enlist the indications for CPR;
- discuss the methods of opening the airway;
- practice and apply the steps while giving CPR; and
- perform CPR.

1.2 MEANING AND CONCEPT OF BASIC LIFE SUPPORT (BLS)

Let us now discuss meaning and concept of Basic life support (BLS), indications, steps and primary assessment in details as given below:

Basic life support is the care provided to the patient who is experiencing respiratory arrest, cardiac arrest or airway obstruction. It refers to maintaining airway patency and supporting breathing and the circulation without the use of equipment other than a protective device. BLS takes into considerations the psychomotor skills for performing high-quality cardiopulmonary resuscitation (CPR), using an automated external defibrillator (AED) and relieving an obstructed airway for patients of all ages. It generally does not include the use of drugs or invasive skills. It consists of a number of life-saving techniques focused on the mnemonics 'CAB' i.e. Circulation, Airway, and Breathing (previously known as ABC).

- **C:**Circulation - It is providing an adequate blood supply to the tissues, especially critical organs, so as to deliver oxygen to all cells and remove metabolic waste, by means of the perfusion of blood throughout the body.
- **A:** Airway - It involves the protection and maintenance of a clear passageway for gases (principally oxygen and carbon dioxide) to pass between the lungs and the atmosphere.
- **B:** Breathing - It is inflation and deflation of the lungs (respiration) through the airway.

1.3 INDICATIONS FOR BASIC LIFE SUPPORT (BLS)

Let us go through the indication for basic life support which are classified as respiratory and cardiac arrest as given below.

1.3.1 Respiratory Arrest

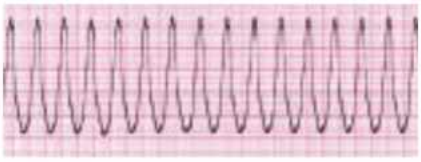
Respiratory arrest may occur in the following situations:

- Drowning
- Stroke
- Choking/ Foreign Body in Throat
- Smoke inhalation
- Drug Overdose
- Electrocution/ injury by lightning
- Suffocation
- Accident/ injury
- Coma
- Epiglottic Paralysis

1.3.2 Cardiac Arrest

The indications of cardiac arrest are depicted in Table 1.1.

Table 1.1: Indications of Cardiac Arrest

ECG Changes	
Ventricular Fibrillation (VF) 	**Rate:** Cannot be counted, there is no pulse wave/apical impulse **Rhythm:** Undulating waves, clinically not perceptible P-R intervals can't be determined; regular QRS absent; no distinct P wave, QRS complex, ST segment or T waves
Ventricular Tachycardia (VT) 	**Rate:** > 100 per minute and usually not > 220 **Rhythm:** Usually regular/ slightly irregular **P Waves:** may be hidden in QRS complexes QRS widened & bizzare, T wave in opposite diection
Asystole 	**Rate:** Ventricular rate = 0 **Rhythm:** unless Ps are present, then regular or irregular **P waves:** may be present may subside later **No wave pattern; patient is clinically dead**
Pulseless Electrical Activity (PEA)  ***Any* organised rhythm without detectable pulse is "PEA"**	• Rhythm displays organised electrical activity (not VF/ pulseless VT) • Seldom as organised as normal sinus rhythm • Can be narrow (QRS <0.10 mm) or wide (QRS >0.12 mm); fast (>100 beats/min) or slow (<60 beats/min)

1.4 STEPS OF BASIC LIFE SUPPORT

First it is very important to make a primary assessment of the patients to know whether it is respiratory arrest or cardiac arrest, so that the patient is managed accordingly.

1.4.1 Primary Assessment of the Unresponsive Adult Patient

This involves assessment of three major areas: assessing the level of consciousness (LOC), breathing and circulation.

Level of Consciousness (LOC)

To check for responsiveness, tap the patient on the shoulder and shout, "Are you okay?"(Fig. 1.1) Use the person's name if you know it. Speak loudly. If the patient is not awake, alert and oriented or does not respond, call for help



Fig. 1.1 : Checking for responsiveness

Airway

Once the patient's level of consciousness has been assessed, evaluate his/her airway. For a patient who is unresponsive, make sure that he or she is in a supine (face-up) position to effectively evaluate the airway. If the patient is face-down, roll the patient onto his or her back. Take care not to create or worsen an injury. If the patient is unresponsive and his or her airway is not open, the airway must be opened immediately.

The two commonly used methods to open the airway are

- Head-tilt/chin-lift technique
- Jaw-thrust method

a) Head-tilt/chin-lift technique (Fig. 1.2)

To perform the head-tilt/chin lift technique on an adult

- Press down on the forehead while pulling up on the bony part of the chin with two to three fingers of the other hand.
- Avoid hyperextension of the neck.



Fig. 1.2 : Head tilt and chin lift method



Fig. 1.3 : Jaw thrust method

b) Jaw-thrust method (Fig. 1.3)

The jaw-thrust method is used to open the airway when a patient is suspected of having a head, neck or spinal injury. To perform this manoeuver on an adult,

- Kneel above the patient's head and:
- Put one hand on each side of the patient's head with the thumbs near the corners of the mouth pointed toward the chin, using the elbows for support.
- Slide the fingers into position under the angles of the patient's jawbone without moving the head or neck.

- Thrust the jaw upward without moving the head or neck to lift the jaw and open the airway.

Simultaneous Breathing and Pulse Check

Once the airway is open, simultaneously check for breathing and a carotid pulse, for atleast 5 but no more than 10 seconds. When checking for breathing, look to see if the patient's chest rises and falls, listen for escaping air and feel for it against the side of your cheek. Normal breathing is quiet, regular and effortless. (Fig. 1.4).

When checking the pulse on an adult patient, palpate the carotid artery by sliding two fingers into the groove of the patient's neck, being careful not to reach across the neck and obstruct the airway. (Fig. 1.5) As an alternative, one may check the femoral artery for a pulse by palpating the area between the hip and groin.



Fig. 1.4 : Look, Listen and Feel technique

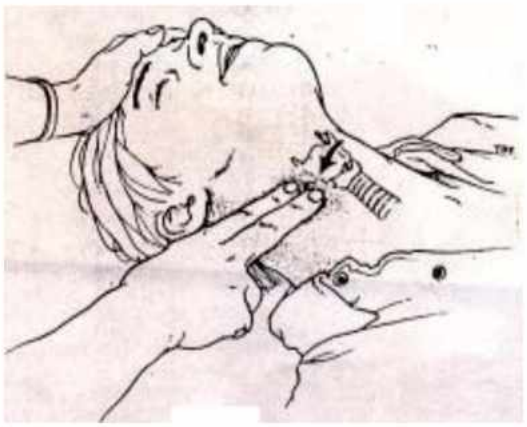


Fig. 1.5: Palpating carotid

Results of Primary Assessment

Throughout the primary assessment, we are gathering information about the patient and the situation. The results of the primary assessment determine the immediate course of action.

1.4.2 Respiratory Arrest

If the patient is not breathing but has a definitive pulse, the patient is in respiratory arrest. Such patients must be given ventilations immediately. Giving ventilations is a technique to supply oxygen to a patient who is in respiratory arrest. Give 1 ventilation every 5 to 6 seconds for an adult patient, with each ventilation lasting about 1 second and making the chest rise.

When giving ventilations, it is important to avoid over ventilation and hyperventilation of a patient. The patient should not be given ventilations at a rate and volume greater than recommended; that is, more than 1 ventilation every 5 to 6 seconds or for longer than 1 second each. One must continue giving ventilation until:

- The patient begins to breathe on his or her own.
- Another trained rescuer takes over.
- The patient has no pulse. In that case one should begin CPR or use an AED if it is available and ready to use.

1.4.3 Cardiac Arrest

If there is no breathing, no pulse and the patient is unresponsive, the patient is in cardiac arrest. Cardiac arrest is a life-threatening situation in which the electrical and/or mechanical system of the heart malfunctions resulting in complete cessation of the heart's ability to function and circulate blood efficiently.

1.4.4 Adult Cardiac Chain of Survival

The adult cardiac chain of survival emphasises that optimum results following a cardiac arrest can be achieved with the following five elements. (Fig.1.6)

- Recognition of cardiac arrest and activation of the emergency response system.
- Early CPR to keep oxygen-rich blood flowing and to help delay brain damage and death.
- Early defibrillation with an automated external defibrillator (AED) to help restore an effective heart rhythm and significantly increase the patient's chance for survival.
- Advanced cardiac life support using advanced medical personnel who can provide the proper tools and medication needed to continue the life saving care.
- Integrated post-cardiac arrest care to optimise ventilation and oxygenation and treat hypertension immediately after the return of spontaneous circulation.

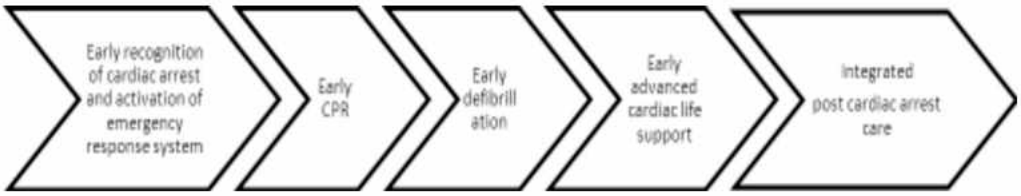


Fig. 1.6: Adult Cardiac Chain of Survival

1.4.5 Providing CPR for Adults

Cardiopulmonary resuscitation circulates blood that contains oxygen to the vital organs of a patient in cardiac arrest when the heart and breathing have stopped. It includes chest compressions and ventilations as well as the use of an automated external defibrillator if available. Let us now discuss both the components of CPR i.e. compression and ventilation as given below:

Compression - One of the components of CPR is chest compressions. To ensure optimal patient outcomes, high-quality CPR must be performed. The following are the steps of CPR:

- Position the patient in supine, on a firm, flat surface to allow for adequate compression. In a non-healthcare setting this would typically be on the floor or ground, while in a healthcare setting this may be on a stretcher or bed with a CPR board.
- Expose the chest to ensure proper hand placement and the ability to visualise chest recoil.
- Rescuer should take a kneeling position on one side of patient's chest.
- Locate the xiphoid process over patient's chest and identify the mid portion of lower half of the sternum (Fig. 1.7)



Fig. 1.7 : Location of xiphoid process over patient's chest

- Draw imaginary line over patient's chest from right to left nipple, locate the area 2 inches above from the lower tip of the xiphoid sternum, now place the heel/ palm of one hand on the lower end of the sternum (i.e. at located area) and the other hand is placed on the top of hand on the sternum so that the hands are parallel. (Fig. 1.8)



Fig. 1.8: Locating compression site at patient's sternum

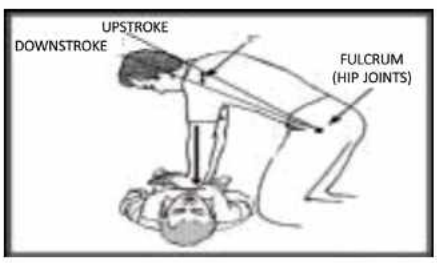
- Rescuer interlaces the fingers of both the hands and locks the elbows in position. Interlacing their fingers makes it easier to provide compressions while keeping the fingers off the chest. (Fig. 1.9)



(a)



(b)



(a)

Fig. 1.9: a, b, c : Interlacing of fingers & locked elbows of the rescuer

- Arms are as straight as possible, with the shoulders directly over the hands to promote effective compressions. Locking elbows will help maintain straight arms.
- Compressions rate should be atleast 100 compressions/ minute. Each set of 30 compressions in 18 seconds or less (30 compressions rather 2 ventilations leads to a shorter delay to first compression and thus increases the survival rate of the patient) or approximately 5 cycles for 2 minutes.
- Compression depth for adults should be 2 inches (about 5 cms) (as compressions create blood flow primarily by increasing the intra-thoracic pressure & directly compressing the heart. Compressions also generate critical blood flow, oxygen & energy delivery to heart & brain.
- The chest must be allowed to fully recoil between each compression to allow blood to flow back into the heart following the compression.
- Rescuer must keep in mind to "Push Hard & Push Fast" on the centre of chest while delivering compressions till the return of patient's pulses.

Ventilations - Ventilation is another component of CPR.

- Briefly check for breathing response of the patient quickly.
- After first set of i.e. 30 chest compressions, the airway is opened and rescuer delivers 2 breaths.
- Clear up if any artificial dentures/secretions etc are present in patient's mouth
    - Open the airway by head-tilt chin lift or jaw thrust manoeuver as already discussed.
    - Start rescue breathings by mouth- to- mouth/ mouth-to- nose/Bag-valve-mask (BVM) resuscitator.

Mouth-to-mouth breathing (Fig. 1.10)

NOTE: Only if there is no choice and also use a barrier to prevent infection.

- Pinch the nostrils closed using thumb and index finger of the hand which is placed in the forehead.
- Take a deep breath, open your mouth wide, place it around outside edge of patient's mouth to create an airtight seal.
- Ventilate the patient with two full breaths. Take a break between breaths by breaking the seal slightly between ventilations and then taking a breath before re-sealing over the mouth.
- When giving ventilations, if the chest does not rise after the first breath, reopen the airway, make a seal and try a second breath.
- If the breath is not successful, move directly back to compressions and check the airway for an obstruction before attempting subsequent ventilations. If an obstruction is found, remove it and attempt ventilations.

Mouth to nose ventilation (Fig. 1.11)

In certain situations mouth to mouth ventilation is not possible. Then we need to

give mouth to nose ventilation. In this case the rescuer needs to close the mouth of the patient to provide an effective ventilation. Otherwise the technique of taking in the breath and blowing in patient's nose remain the same.



Fig. 1.10 : Mouth to mouth ventilation



Fig 1.11: Mouth to nose ventilation

Bag-Valve-Mask Resuscitator

A bag-valve-mask (BVM) resuscitator (Fig. 1.12) is a handheld device used to ventilate patients and administer higher concentrations of oxygen than a pocket mask. While often used by a single rescuer, evidence shows that two rescuers are needed to effectively operate a BVM. One rescuer opens and maintains the airway and ensures the BVM mask seal, while the second rescuer delivers ventilations by squeezing the bag slowly with both hands at the correct intervals to the point of creating chest rise.

The technique of using the BVM is as follows:

- Assemble the BVM as needed.
- Open the airway.
- Use an E-C hand position (first rescuer): (Fig. 1.13)
- Place both hands around the mask, forming an E with the last three fingers on each and a C with the thumb and index finger around both sides of the mask.
- Seal the mask completely around the patient's mouth and nose by lifting the jaw into the mask while maintaining an open airway.
- Provide ventilations (second rescuer):
- Depress the bag about halfway to deliver between 400 to 700 milliliters of volume to make the chest rise.
- Give smooth and effortless ventilations that last about 1 second.
- After first set of i.e. 30 chest compressions, the airway is opened and rescuer delivers 2 breaths.
- When giving ventilations, if the chest does not rise after the first breath, reopen the airway, make a seal and try a second breath.
- If the breath is not successful, move directly back to compressions and check the airway for an obstruction before attempting subsequent ventilations. If an obstruction is found, remove it and attempt ventilations.
- Rescuer must ventilate the patient during the chest recoil with the artificial breaths.

- Recheck the pulse every 2 minutes, if still no pulse is felt, start again cycles of 30 compressions & 2 breaths till AED arrives.



Fig. 1.12 : Bag-valve-mask (BVM) resuscitator



Fig 1.13: E-C hand position

Basic Life Support (BLS): Adult Algorithm

1) Check responsiveness; if none, follow steps below
   - Activate emergency response system
   - Get automated external defibrillator (AED)
2) Check pulse for < 10 seconds; if no pulse, follow steps below
   - Start high-quality cardiopulmonary resuscitation (CPR) at a compressions-to-breaths ratio of 30:2
   - Every 2 minutes, check pulse, check rhythm, and switch compressors
   - High-quality CPR and changing rescuers every 2 minutes improves a victim's chance of survival
3) Attach AED as soon as available; if shockable rhythm, defibrillate and then immediately start CPR

Compressions

See the list below:

- Check pulse at carotid artery
- Compression landmarks: Lower half of sternum between the nipples
- Compression method: Heel of one hand, other hand on top
- Depth: At least 2-2.4 inches (5 cm)
- Allow complete chest recoil after each compression
- Compression rate: At least 100-120/min
- Compression-to-ventilations ratio, 30:2

- Continuous compressions if advanced airway present
- Rotate compressor every 2 minutes
- Minimise interruptions in compressions to < 10 seconds
- Avoid excessive ventilation
- If end-tidal carbon dioxide tension ($PETCO_2$) < 10 mm Hg, attempt to improve CPR qualityguidel
- If diastolic pressure < 20 mm Hg, attempt to improve CPR quality

Adult CPR algorithm is shown in Fig. 1.14.

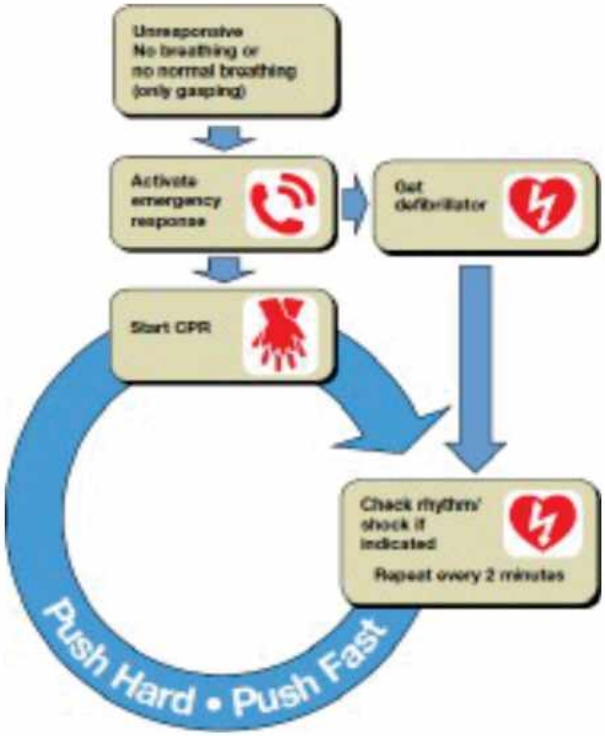


Fig. 1.14 : Simplified Adult BLS Algorithm

Source: Highlights as per 2020 Guidelines-

Once started, continue CPR with 30 compressions followed by 2 ventilations (1 cycle = 30:2) until:

- You see signs of return of spontaneous circulation (ROSC) such as patient movement or breathing.
- An AED is ready to analyze the patient's heart rhythm.
- Other trained rescuers take over and relieve you from compression or ventilation responsibilities.
- You are presented with a valid do not resuscitate (DNR) order.
- You are alone and too exhausted to continue.
- The scene becomes unsafe.

1.5 LET US SUM UP

In this practical block, the indication and steps of cardio pulmonary resuscitation has been highlighted. It is important to have the knowledge and practice of CPR and teach the lay persons in the community in recognising and providing basic life support in case of need.

1.6 ACTIVITY

Prepare a teaching plan for adolescents, and adults from your community on recognising the need and providing basic life support to clients who may have developed cardiac arrest or respiratory arrest.

1.7 REFERENCES

1) American Red Cross Basic Life Support for Health care Providers Handbook. Published by Stay Well, United States of America, Edition 2015.

2) Handley AJ. Basic Life Support. British Journal of Anesthesia 1997;79: 151-158.

3) Highlights of 2020 AHA Guidelines for CPR & ECC.

4) https://en.wikipedia.org/wiki/Basic life support. Retrieved on 4 Sept 2016.

UNIT 2 ASSESSMENT AND MANAGEMENT OF FEVERS

Structure

2.0 Introduction

2.1 Objectives

2.2 Fever: An Overview

- 2.2.1 What is Fever?
- 2.2.2 Factors Influencing the Normal Body Temperatures
- 2.2.3 Stages and Types of Fever
- 2.2.4 Pathphysiology of Fever
- 2.2.5 Signs/ Symptoms and Causes of Fever
- 2.2.6 Sites to Record Body Temperature
- 2.2.7 Procedure for Recording Temperature

2.3 Acute Fever

- 2.3.1 Assessment
- 2.3.2 Treatment/Management
- 2.3.3 Patient Education

2.4 Malaria

- 2.4.1 Salient Features
- 2.4.2 Assessment
- 2.4.3 Treatment/Management
- 2.4.4 Patient Education

2.5 Dengue

- 2.5.1 Salient Features
- 2.5.2 Assessment
- 2.5.3 Treatment/Management
- 2.5.4 Patient Education

2.6 Chikungunya

- 2.6.1 Salient Features
- 2.6.2 Assessment
- 2.6.3 Treatment/Management

2.7 Typhod or Enteric Fever

- 2.7.1 Salient Features
- 2.7.2 Assessment
- 2.7.3 Treatment/Management
- 2.7.4 Patient /Parent Education

2.8 Let Us Sum Up

2.9 Activity

2.10 References

2.0 INTRODUCTION

In the previous unit you have learnt about the practical skills on basic life support. You have learnt in detail about some of the common communicable diseases under vector borne diseases in which fevers is a symptom such as malaria, dengue,

In this unit you get acquainted with a common condition seen in all ages and most of the illnesses i.e fever, its assessment, initial management and referral. This will include a review of definition, types, path physiology, common causes and signs and symptoms of fever followed by skills used in assessment and management of acute fevers, and fevers with rashes.

2.1 OBJECTIVES

After completing this unit, you should be able to:

- define fever;
- identify the pattern and types of fever;
- list the common causes; and signs and symptoms of fever;
- list the sites and methods of recording body temperature;
- assess the patients presenting with fever;
- describe the non-pharmacological and pharmacological treatment for common fevers; and
- provide initial management and refer the cases of common fevers appropriately;

2.2 FEVER: AN OVERVIEW

Let us now discuss about fever in details as given below:

2.2.1 What is Fever?

Fever, also known as **pyrexia** and **febrile response**, is defined as having a body temperature above the normal range (considered to be 37.5°C (99.5°F).

- Body temperature varies among individuals with a range of 0.3°C to 0.6°C (0.5°F to 1.0°F) and normal temperature too varies at various sites. (Table 2.1)
- Fever is a defence response of the body to an infection. An attempt should be made to find out the underlying cause.

Table 2.1: Average normal temperature for healthy adults at various sites

Oral	Rectal	Axillary	Tympanic	Forehead
37.0°C	37.5°C	36.5°C	37.5°C	34.4°C
98.6°F	99.5°F	97.7°F	99.5°F	94.0°F

2.2.2 Factors Influencing the Normal Body Temperatures

Normal body temperatures vary depending on many factors such as: age, sex,time of day, surroundings (ambient) temperature and activity level.

Note: A raised temperature is not always a fever.

2.2.3 Stages and Types of Fever

- **Chill Stage:** The person experiences chills, shivers and feels cold even though the body temperature is rising. This stage resolves when the new set point a higher temp is achieved.
- **Plateau Stage:** The chills subside and the person feels warm and dry.
- **The Crisis (or) Flush i.e. Heat & Sweat Stage:** The hypothalamus set point drops initiating heat loss responses. The skin becomes warm and flushed because of vasodilatation. Diaphoresis assists in evaporative heat loss. Stages of fever are shown in Fig. 2.1.
- When fever 'breaks' client becomes a febrile.

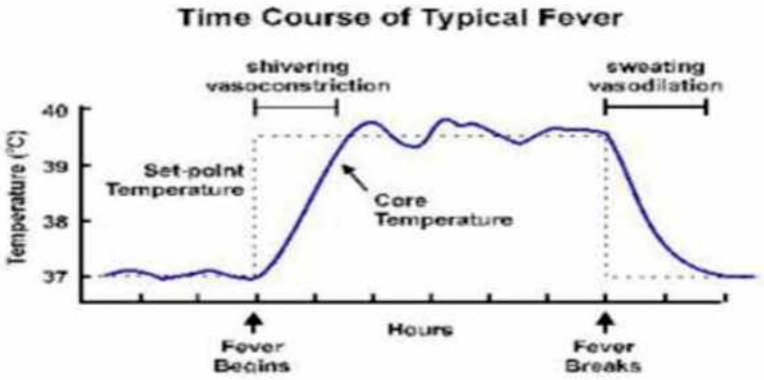


Fig. 2.1 : Stages of Fever

Types of Fever:

- **Continuous fever** - Temperature remains above normal throughout the day and does not fluctuate more than 1°C in 24 hours, e .g. lobar pneumonia, typhoid, meningitis, urinary tract infection, or typhus. Typhoid fever may show a specific fever pattern (*Wunderlich curve* of typhoid fever), with a slow stepwise increase and a high plateau.
- **Intermittent fever** - The temperature elevation is present only for a certain period, later cycling back to normal, e.g. malaria, or kala-azar
- **Remittent fever** - Temperature remains above normal throughout the day and fluctuates more than 1°C in 24 hours, e.g., infective endocarditis, brucellosis.
- **Pel-Ebstein fever** - A specific kind of fever associated with Hodgkin's lymphoma, being high for one week and low for the next week and so on. However, there is some debate as to whether this pattern truly exists.

Hyperthermia - Hyperthermia is high temperature that is not a fever. It occurs from a number of causes including heatstroke, neuroleptic malignant syndrome, stimulants such as amphetamines and cocaine, drug reactions etc.

2.2.4 Pathphysiology of Fever

Temperature is ultimately regulated in the hypothalamus. Infection causes a release of prostaglandin E2, (PGE2), which acts on the hypothalamus, which generates a systemic response back to the rest of the body, causing heat-creating effects to match a new temperature level. Shown in (Fig. 2.2).

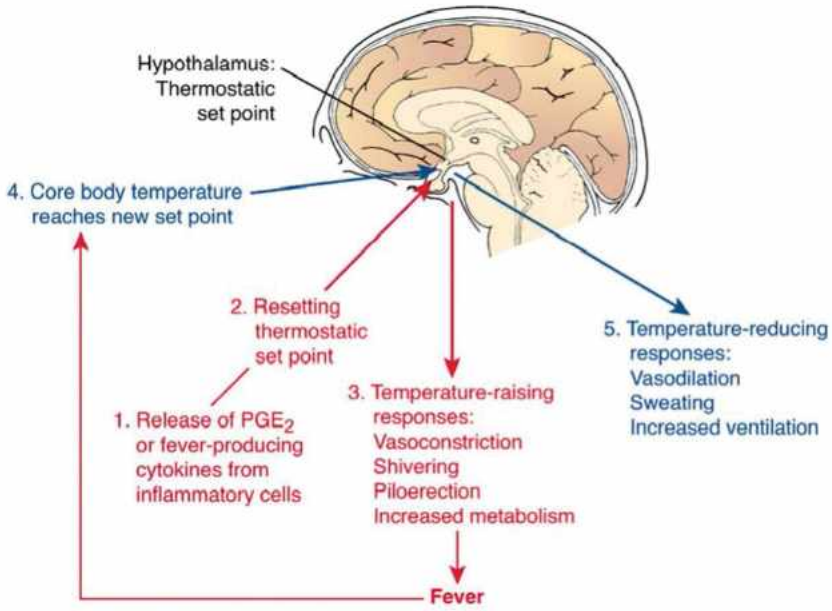


Fig. 2.2 : Pathphysiology of Fever

2.2.5 Signs/ Symptoms and Causes of Fever

You should assess by asking for associated illness among patient suffering from fever such as:

- Lethargy
- Depression
- Anorexia (low appetite)
- Sleepiness
- Myalgia (muscular pain)
- Hyperalgesia,(increased pain sensitivity)
- Decreased ability to concentrate

Remember:

- Rarely a fever may lead to convulsions in children
- Fevers do not typically go higher than 41 to 42°C (105.8 to 107.6°F)

Causes of Fever

There are several conditions, illnesses, and medicines that can cause fever. These include:

- Infections and infectious diseases such as influenza, common cold, HIV, malaria, and gastroenteritis. Infections are the most common cause of fever.
- Medicines such as antibiotics, narcotics, barbiturates, and antihistamines. These cause "drug fevers" due to adverse reactions, withdrawal, or by the drug's design.
- Trauma or injury such as a heart attack, stroke, heatstroke, heat exhaustion, or burns.

- Damage to tissue from haemolysis (breaking open of red blood cells to release haemoglobin) e.g. surgery, heart attack, and haemorrhage.
- Other medical conditions such as skin in flammation, arthritis, hyperthyroidism, some cancers, lupus, metabolic disorder, gout, and embolisms etc.

2.2.6 Sites to Record Body Temperature

These sites are:

- oral (sublingual)
- rectal/anal, axillary
- ear canal.

The most common route used for temperature recording is axillary due to issues such as safety, prevention of infection and convenience.

> **Note:** The most common route used and recommended for temperature recording in infants is axillary

- Body temperature is documented in either Celsius or Fahrenheit degrees.
  - To convert Celsius to Fahrenheit, multiply by 9/5 and add 32.
  - To change Fahrenheit to Celsius, subtract 32 and multiply by 5/9.

Types of thermometers: Let us go through various types of thermometers available to record temperature as given below:

i) **Digital thermometer** - It is a small hand-held device with a "window" showing the temperature in numbers. There are many kinds of digital thermometers. Most digital thermometers are easy to use and measure body temperature within seconds. **Most commonly used for all age groups.** (Fig. 2.3)



Fig. 2.3: Digital Thermometer

ii) **Clinical thermometer with mercury -** It is a thin glass tube with a silver tip and line inside. The silver tip and line is mercury. Mercury is a toxic and hazardous chemical. Hence its use is strongly discouraged. (Fig. 2.4)

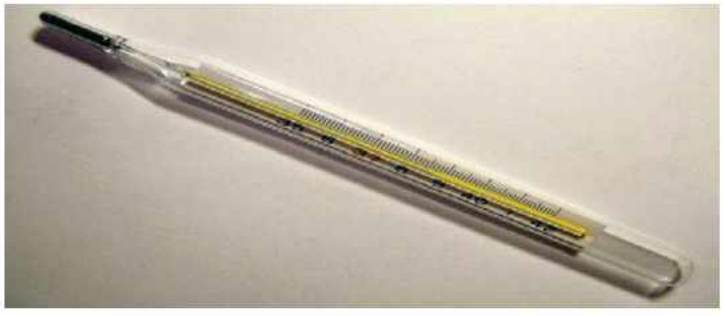


Fig. 2.4: Clinical Thermometer

iii) **Alcohol based glass thermometer:** This is a thin glass tube with a red or blue line inside it. Used for oral temperatures. Are safe to use for people over the age of 5. A child younger than 5 may bite the thermometer, breaking it in their mouth.

iv) **Tympanic thermometer -** It is shaped differently from normal digital thermometers because it is specifically designed to fit into the ear canal. They sense reflected infrared (heat) emissions from the tympanic membrane (eardrum).

v) **Plastic strip thermometer -** Strip-type, are held against the forehead, relatively popular for taking children's temperature, but quite variable in their accuracy.

Note: Considering the safety, easy availability and user friendly, easy to use technique, Digital thermometers are the most common thermometers used now-a-days.

2.2.7 Procedure for Recording Temperature

Let us go through recording of temperature by oral and axcillary routes as given below:

i) **Procedure for recording oral temperature using digital thermometer**

Ensure that person has not consumed anything hot or cold by mouth for 10 minutes before taking temperature by mouth.

1) Explain the procedure to the patient.
2) Take the thermometer out of its holder.
3) Put the tip into a new throw-away plastic cover if one is available. If you do not have a cover, clean the pointed end (probe) with soap and warm water or wiping with alcohol swab. Rinse it with cool water.
4) With patient's mouth open, put the covered tip under the tongue.
5) Ask the patient to close the lips gently around the thermometer.
6) Keep the thermometer under the tongue until the digital thermometer beeps.
7) Remove the thermometer when numbers show up in the "window".
8) Read the numbers in the window. These numbers are patient's body temperature.
9) Record the reading and interpret carefully considering normal values of different age group patients/clients.
10) Clean the thermometer from the stem to the tip using alcohol swab in a circular motion.
11) Place the thermometer back in its holder.

ii) **Procedure for recording axillary temperature**

The underarm or axillary area is commonly used to measure body temperature, although it's not considered as accurate as the mouth, rectum, or ear (tympanic membrane).

- The procedure is same as for oral temperature except the thermometer is placed in the axilla instead of mouth. (Fig. 2.5)
- Make sure the armpit is dry before you insert it. Place the probe into the middle of the armpit (pointing upwards toward the head) and then make sure

the arm is close to the body so the body heat is trapped. Wait atleast a few minutes or until the thermometer beeps with a reading.

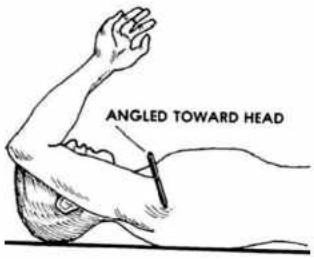


Fig. 2.5 : Recording axillary temperature

Note: In infants, place the thermometer along the bodyline with the probe into the middle of the armpit (pointing upwards toward the head)

Remember:

- Wait at least one hour after heavy exercise or a hot bath before taking body temperature (any site)
- Instruct patient not to talk, cough or bite the thermometer, after it is placed in mouth for oral temperature recording.
- For better accuracy, take readings from both armpits and then average the two temperatures together.
- Axillary measurements with a digital thermometer tend to be lower than other areas, with an average normal temperature being around 97.7°F (36.5°C).
- It is recommended to use individual thermometers, where possible, in order to prevent cross-infection/s.

2.3 ACUTE FEVER

The overall mean oral temperature for healthy adult individuals is 36.8 ± 0.4ºC, with a nadir (low) at 6 AM and a peak at 4–6 PM. A morning temperature of greater than 37.2ºC and an evening temperature of greater than 37.7ºC is often considered as fever.

2.3.1 Assessment

It is important to work towards finding the cause of fever as discussed earlier in this unit.

History and physical examination

- Record core body temp during each phase of febrile episode
- Identify the type/ pattern of fever: body temperature, onset of fever, duration, periodicity
- Obtain history of sequence of symptoms, any associated focal symptom(s) such as seizures, exposure to infectious agents and occupational history may be useful.
- Physical examination: Look for clues such as rash, lymphadenopathy, hepatomegaly, splenomegaly, abdominal tenderness, altered sensorium, neck stiffness, lung crepts, etc.
- Drug fever should be considered when the cause of fever is elusive.

Diagnostic tests

A large range of diagnoses may possibly be the cause of fever. If the history and physical examination suggest that it is likely to be more than a simple URI or viral fever, investigations are indicated.

The work-up should include

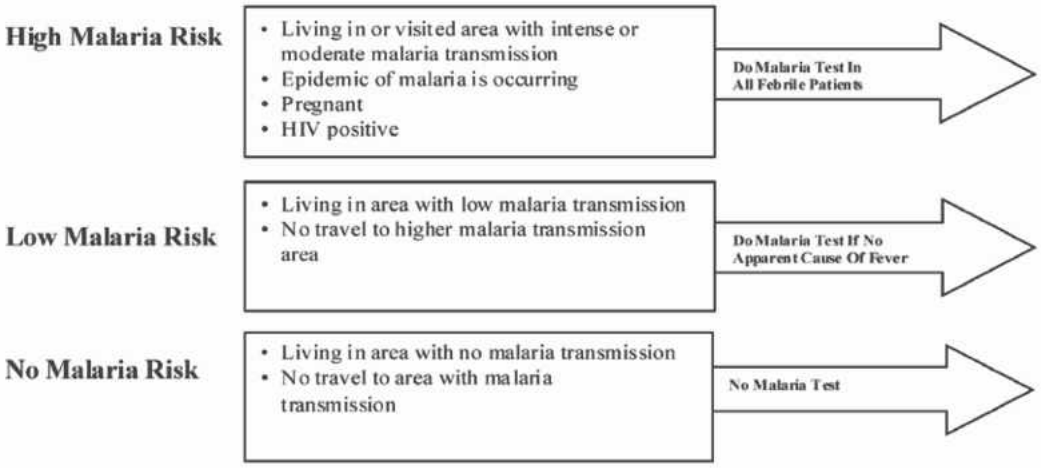
- A complete haemogram with ESR, smear for malarial parasite, blood culture, Widal test, urine analysis including urine culture
- An X-ray chest if fever continues beyond 2 weeks (even in the absence of respiratory symptom.
- Any abnormal fluid collection should be sampled.
- Ultrasonography is needed in some cases of acute fever such as in amoebic liver abscess.

For investigations that are not possible at health and wellness centre, refer the patient to a PHC, CHC or hospital where the needed facilities are available.

Table 2.1: Updated fever pages in the IMAI acute care guideline module

History taking: Does the patient have fever – by history of recent fever (within 48 hours) or feels hot or temperature 37.5°C or above?

If Yes, Ask	Look and Feel
• How long have you had a fever? • Any other problem • What medications have you taken? • Determine if antimalarial and for how long	• Look at the patient's neurological condition. • Is the patient: Lethargic? Confused? Agitated? • Count the breaths in one minute. Determine if fast breathing. If fast breathing, is it deep? • Check if able to drink. • Feel for stiff neck. • Check if able to walk unaided. • Skin rash? • Headache? For how long? • Look for apparent cause of fever – assess all symptoms in this Acute Care algorithm.
Decide malaria risk: ☐ High ☐ Low ☐ No • Where do you usually live? • Recent travel to a malaria area? • If woman of childbearing age – are you pregnant? • Is an epidemic of malaria occurring? • HIV positive? **If HIV status unknown, do/ refer for HIV test**	**Apparent causes of fever:** ☐ Dysentery ☐ Gastroenteritis ☐ Pneumonia ☐ Soft tissue or muscle infection ☐ Influenza/Bronchitis ☐ Severe or surgical abdominal problem ☐ PID ☐ Sinusitis ☐ Tonsillitis ☐ Sore throat Kidney infection Dental abscess



2.3.2 Treatment/Management

In acute febrile illnesses suggestive of viral or bacterial cause, fever should be symptomatically treated.

Non pharmacological	Pharmacological
• Keep the patient in a quiet and cool place. • Remove excess clothing. • Give hydrotherapy with tepid water (if temperature is above 39°celsius) (Fig. 2.6) • If the patient feels cold and begins to shiver, cover with a sheet or blanket • Advise rest and plenty of oral fluids.	• **Non-specific:** Tab. Paracetamol 500-1000 mg (max 4 g in 24 hours) 6-8 hourly. o (**Caution:** Reduce dose in frail elderly, adults weighing <50 kg and those at risk of hepatotoxicity) • **Specific:** Antibiotics/antimalarials depending upon the cause suggested by clinical and laboratory evaluation.

Remember:

- DO NOT use antipyretics in low-grade fever routinely. This may mask important clinical indications.
- DO NOT give Tab. Ibuprofen or aspirin as these may aggravate bleeding.

Initial Management and Referral

Based on the assessment, you can start the non pharmacological and non-specific pharmacological measures. In most cases of fever, patient may either recover spontaneously or with the non pharmacological and non-specific pharmacological measures.

If not, patient should be referred to higher facility like PHC, CHC or hospital.

Remember:

If the patient looks very sick and/ or has associated symptoms like diarrohoea or vomiting etc. it's better to put an intravenous cannula and then refer.

2.3.3 Patient Education

Do's	Don'ts
• Take plenty of fluids • Stay in cool environment • Wash/sponge face and limbs repeatedly • Maintain oral hygiene as oral mucous membrane dry easily from dehydration • Avoid Self-medication and over-medication	• Avoid injectable paracetamol/ NSAIDs. • Avoid covering patient having high fever with a blanket • Antibiotics should be taken only on advice of a physician

Table 2.2: Classification and management of fever in the updated IMAI acute care algorithm

Sign	Classification	Treatment
One or more of the following signs: • confusion, agitation or lethargy, • inability to drink, • inability to walk unaided, • stiff neck or • severe respiratory distress	Very severe febrile illness	• Give artemether (or quinine, if artemether is not available) intramuscularly. • Give first dose of antibiotics intramuscularly • Give glucose • Refer urgently to hospital • If fever is accompanied by bleeding (gums, skin, into eyes or urine) or if jaundice develops within 2 weeks of fever, report case to district clinician.
Malaria test positive	Malaria	Give appropriate oral antimalarial agent. • Look for other apparent cause and treat accordingly. • Consider HIV-related illness • If fever for 7 days or more, consider tuberculosis (send sputum sample, refer). • Follow up in 3 days if still febrile.

Sign	Classification	Treatment
Malaria test negative and/ orother apparent cause of fever (low malaria risk)	Non-malaria fever	**Sign Classification Treatment** • Treat according to apparent cause. • Consider HIV-related illness if unexplained fever for > 30 days. • Consider fever related to antiretroviral drugs (see *Chronic HIV care*). • If no apparent cause and fever for 7 days or more, send sputum samples for tuberculosis testing and refer to hospital for assessment. • Follow up in 3 days if still febrile.

SOME PROCEDURES: Let us go through the procedure for physical examination i.e. general and basic, followed by hydrotherapy as given below:

I) **Physical examination**

It is a thorough inspection or a detailed study of the entire body or some part of the body to determine the general, physical and mental condition of the patient. In your pre-service training you have already learnt about the purpose/s and the procedure for performing physical examination. Here is a brief review.

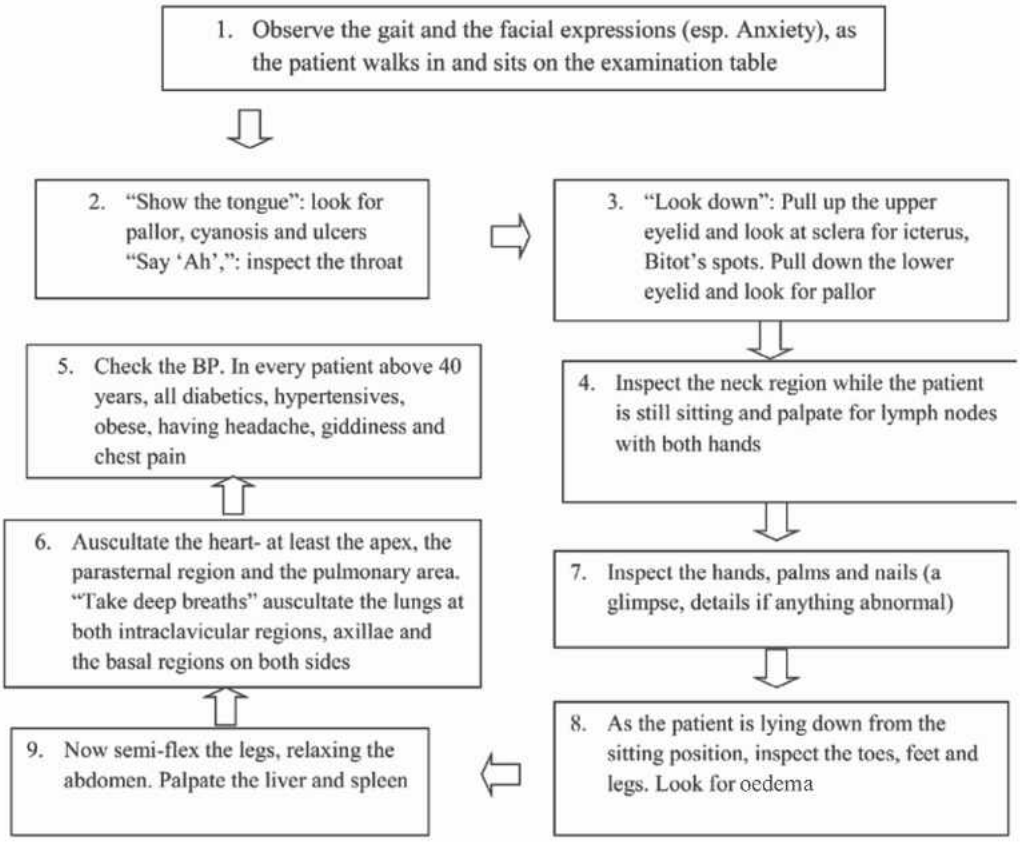
General examination of head to toe/ foot examination: This includes Anthropometry - height, weight

- **General appearance:** posture, body curves, movement, nourishment, body build, health and activity
- **Mental status:** consciousness, type of look (anxious, worried, depressed etc)
- **Skin conditions:** colour, texture, temperature, lesions
- **Head and face:** shape of the skull, fontanelles, head circumference, condition of the skalp and face
- **Eyes:** brows, lashes, lids, eye balls, conjunctiva, sclera, pupils, vision etc.
- **Ears:** external ear, typanic memberane, hearing
- **Nose:** external nares, nostrils
- **Mouth and pahrynx:** lips, odour, teeth, mucous memberane, gums. Tongue, throat and pharynx
- **Neck:** lymphnodes, thyroid glands
- **Chest:** thorax, breath sounds, heart and breast
- **Abdomen:** observation, auscultation, palpation and percussion
- **Extremeties:** joint movements, range of motion

- **Back:** spina bifida, abnormal curves
- **Genitalia:** inguinal lymph glands, vulva or testicles
- **Neurological tests:** co-ordination, reflexes, equilibrium, sensation tests

Basic Examination (Adult)

This is the basic examination that must be done in every adult patient, irrespactive of his/her complaints. It requires less than a minute and most of it overlaps with history taking.



II) **Hydrotherapy/ Cold application**

Cold is applied both by dry and moist methods. Dry cold is provided with ice bags, cold packs, or a hypothermia blanket (or pad). Cold and tepid sponging, cold pack and cold compresses are methods of applying moist cold. Cold and tepid sponging, and cold compresses and Ice caps are commonly used to reduce fever and are discussed here.

Cold and Tepid Sponging

Purpose is to reduce body temperature in hyperpyrexia. As you will not be able to do this procedure at sub-center but you must explain the family members to carry out the procedure for the patient at their home.

Articles required:

• Screen (if available at sub centre) • Long mackintosh with cover • Hot water bottle with cover • Large basin of water at 65°F/ Tepid water and a bowl	• Ice cap or cold compress for the head • Bottle of spirit (optional) • Glass of cold water • Towel

• Ice water in a jug • Bath thermometer • Six sponge towels/ clean cloth pieces	• Articles for recording body temperature: thermometer, spirit swabs and paper bag • 2 buckets for used water and linen

Procedure

1) Wash hands, take articles to bedside (at home set up/sub-center) and explain procedure to the patient
2) Screen the patient and remove all clothes. Cover patient with a sheet
3) Place mackintosh (rubber sheet) with cover under the patient
4) Apply ice cap or cold compress to the head, abdomen, axilla, and groin on one side
5) Place hot water bottle at the feet
6) Expose one side of the body and sponge it with gentle straight strokes using wet sponge clothes/ cloth pieces. Do not dry. Sponge one side for 8 minutes.
7) Same way sponge the other side of the body next.
8) Turn the patient to one side and sponge the back for 4 minutes using straight strokes.
9) Pat dry the back and rub with spirit (if available) and pat dry the body.
10) Remove wet sheets and mackintosh. Put the patient's clothes on.
11) Clean and replace all the articles.
12) After 20–30 minutes, check patient's temperature and record the procedure, (with time) and its effect.

Cold Compress

Cold Compress is a method of local moist cold application.

Purpose

1) To relieve headache
2) To reduce temperature
3) To prevent swelling in an injured area/ joint
4) To relieve pain and congestion

Articles required

1) A bowl with ice cold water and evaporative lotion (spirit and water in 1:3 ratio)
2) Pieces of folded gauge/ flannel/ soft cloth (8×8" size)
3) Mackintosh and towel to protect the bed

Procedure

1) Wash hands, explain procedure to the patient
2) Protect bed with mackintosh and towel
3) Immerse the gauge pad/ flannel/ soft cloth in cold water, wring it to remove excess of water, make sure water is not dripping

4) Apply it to the body part intended to receive application
5) Replace the compress as soon as it becomes warm
6) Continue for 15–20 minutes
7) Take temperature before and after the procedure and record
8) When procedure is over, remove compress, dry the part/s and make patient comfortable
9) Record procedure and effect
10) Wash and replace articles

Note: Family members/ patient can be taught how to do the cold compress.

Ice Cap/ ice bags

The ice cap application is a method of local dry cold application.

Purpose

1) To reduce fever
2) To relieve swelling and pain in an injured area/ joint
3) To check haemorrhage

Articles required

1) Ice cap with water - 1
2) Hot water bottle - 1
3) Mackintosh and bath towel - 1
4) Ice cubes and Salt
5) Face towels - 2
6) Jug of cold water

Procedure

1) Explain procedure to the patient
2) Assemble the articles
3) Break the ice into small pieces about the size of a walnut
4) Sprinkle the ice with salt to lower melting point of the ice
5) Test the ice bag for leakage by pouring some cold water in it
6) Empty the bag, and then fill the bag ½ with ice
7) Keep the bag on a flat surface, expel the air and screw the cap tightly
8) Wipe the outside of the bag and put the cover on the bag
9) Protect bed with mackintosh and towel
10) Apply it to the body part intended to receive application, for reducing fever it is kept on the head
11) It should rest lightly and then apply again
12) When the ice is melted, remove water and refill it if necessary and apply again
13) Take temperature before and after the procedure and record

14) When procedure is over, remove the cap and make patient comfortable

15) Record procedure and effect of the application

16) After removal empty the bag, wash with soap and water and then dry and powder it, blow in some air and keep in proper place

Note: Family members/ patient can be taught how to do the cold compress.

Hot water bottle may be used to keep the peripheries warm (if patient is feeling cold in other body parts that where cold application is given, then use hot water bottle for the patient comfort).

2.4 MALARIA

Parasitic infection due to protozoa of genus *Plasmodium* transmitted by the female Anopheles mosquito. There are four plasmodia species: *P. falciparum*, *P. vivax*, *P. malariae*, and *P. ovale*.

2.4.1 Salient Features

Malaria is an acute and chronic protozoan illness characterised by paroxysms of fever, chills, sweats, fatigue, anaemia and splenomegaly. In atypical cases, classical symptoms may not manifest.

Falciparum malaria (severe and complicated malaria) severe manifestations can develop over a short span of 12–24 hours and is associated in varying degrees with the following clinical signs:

- **Cerebral:** Mental clouding, coma, convulsions, delirium and occasionally localising signs.
- **Hyperpyrexia** (>40.5ºC), haemolysis, haematocrit <15% or Hb <5 g/dl, hypoglycaemia, oliguria, anuria, pulmonary oedema, macroscopic haemoglobinuria and jaundice.

2.4.2 Assessment

Obtain complete history of illness:

- Present complaints, fever characteristics such as severity, onset, duration, periodicity etc.
- Any other associated symptoms like convulsions, bleeding, urinary problems etc.

Physical examination:

- Head to toe examination
- Check vital signs: Temperature, Pulse, Respiratory Rate (T.P.R.) and B.P.
- Look for any pallor, rashes etc.

Investigations:

- Blood smear examination: During fever take blood from patients for thick and thin smear slides and examine for malaria parasite after proper staining. Thick smear for easy detection of parasite and thin smear for identification of species.

Note: Blood films may be negative even in a severe attack

- Rapid Diagnostic Tests (RDT) for diagnosis of Pf malaria in high Pf endemic areas/ where microscopy results are not obtainable within 24 hours of sample collection
- Haemoglobin (Hb)% and White Blood Cell count (WBC)

2.4.3 Treatment/Management

All fever cases suspected to be malaria should be investigated by microscopy or RDT. Patients of uncomplicated malaria can be managed at primary level but patients with severe malaria with complications should be admitted and managed in a hospital where facilities for detailed investigations and blood transfusion exist.

Principles of management of uncomplicated malaria

- Use of antimalarials.
- Hyperthermia: Tepid sponging, paracetamol tablet: 5mg/ kg body weight.
- Dehydration: I/V fluid, glucose saline.
- Convulsions: Diazepam 0.15 mg/kg body weight I/V slowly.
- Anaemia: Oral iron and folic acid tablet.

Treatment of *P. vivax* cases (Table 2.3)

Chloroquine: 25 mg/kg body weight divided over three days, i.e. 10 mg/kg on day 1, 10 mg/kg on day 2 and 5 mg/kg on day 3.

Primaquine: 0.25 mg/kg body weight daily for 14 days.

Table 2.3: Age-wise dosage schedule for treatment of *P. vivax* cases

Age (in years)	Tab Chloroquine (150 mg base)			Tab Primaquine (2.5 mg base
	Day-1	Day-2	Day-3	Day-1 to Day-14
<1	½	½	1/4	0
1-4	1	1	1/2	1
5-8	2	2	1	2
9-14	3	3	1/2	4
15 & above	4	4	2	6

* Primaquine is contraindicated in infants, pregnant women and individuals with G6PD deficiency. 14 days regimen of Primaquine should be given under supervision

Note: Patients should be instructed to report back in case of haematuria or high-coloured urine/cyanosis or blue colouration of lips and Primaquine should be stopped in such cases. Care should be taken in patients with anaemia.

Treatment of uncomplicated P. falciparum cases (Table 2.4)

Artemisinin based combination therapy (ACT): Artesunate 4 mg/kg body weight daily for 3 days plus Sulfadoxine (25 mg/kg body weight) -Pyrimethamine (1.25 mg/kg body weight) on first day.

(**Caution:** ACT is not to be given in 1st trimester of pregnancy).

Primaquine: 0.75 mg/kg body weight on day 2

Table 2.4: Age-wise dosage schedule for treatment of *P. falciparum* cases

Age (in years)	1st day			2nd day	3rd day
	Artesunate (50 mg)	SP*	Artesunate (50 mg) Base)	Primaquine (7.5 mg	Artesunate (50 mg)
<1	¼	¼	½	0	1/2
1-4	1	1	1	1	1
5-8	2	½	2	2	2
9-14	3	2	3	4	3
15 & above	4	3	4	6	4

Treatment of uncomplicated P. falciparum cases in pregnancy

1st trimester: Quinine salt 10 mg/kg 3 times daily for 7 days (**Caution:** Quinine may induce hypoglycaemia; pregnant women should not start taking quinine on an empty stomach and should eat regularly, while on quinine treatment).

2nd and 3rd trimesters: ACT as per dosage given above.

Treatment of mixed infections (P. vivax + P. falciparum) case

All mixed infections should be treated with full course of ACT and Primaquine 0.25 mg per kg daily for 14 days.

Note:

- In cases where parasitological diagnosis is not possible due to non-availability of either timely microscopy or RDT, suspected malaria cases should be treated with full course of chloroquine, till the results of microscopy are received.
- Once the parasitological diagnosis is available, appropriate treatment as per the species, is to be administered.

Presumptive treatment with chloroquine is no more recommended.

Resistance to treatment:

- Resistance should be suspected, if in spite of full treatment with no history of vomiting, diarrhoea, patient does not respond within 72 hours, clinically and parasitologically.
- Such cases not responding to ACT, should be treated with oral Quinine with Tetracycline/Doxycycline.
- These instances should be reported to concerned District Malaria/State Malaria Officer/ROHFW for initiation of therapeutic efficacy studies.

Criteria for Referral of severe malaria cases:

- Persistence of fever after 24 hours of initial treatment
- continuous vomiting and inability to retain oral drugs
- headache continues to increase
- severe dehydration – dry, parched skin, sunken face, too weak to walk in the absence of any other obvious reason
- change in sensorium e.g. Confusion, drowsiness, blurring of vision, photophobia, disorientation
- convulsions or muscle twitchings
- bleeding and clotting disorders
- suspicion of severe anaemia, jaundice, or hypothermia

Remember:

Severe malaria is an emergency and these patients should be referred to a hospital where facilities for detailed investigations and blood transfusion exist.

Monitoring

- Monitor core temperature (preferably rectal), respiratory rate and depth, pulse, blood pressure and level of consciousness every 4 hours;
- Record urine output, and look for the appearance of brown or black urine (haemoglobinuria) or oliguria;
- Monitor therapeutic response, both clinical and parasitological, by regular observation and blood films;
- Carry out regular laboratory evaluation of haematocrit or haemoglobin, glucose, urea or creatinine and electrolytes (Refer if facilities not available)
- Avoid drugs that increase the risk for gastrointestinal bleeding (aspirin, corticosteroids).

2.4.4 Patient Education

Your role as MLHP is to educate and make people aware of to stop mosquito breeding and protect from mosquitoes, e.g. mosquito nets,

- Fever without any other signs and symptoms should be reported to nearest health facility.
- Take Chloroquine with plenty of water after food and not on empty stomach.
- If chloroquine syrup is not available for children, the tablet should be crushed and given with honey or thick syrup.
- Watch for side effects of drugs prescribed. Chloroquine may cause nausea, vomiting and diarrhoea, mild headache and skin allergy/rash.
- If vomiting occurs within 30 minutes of chloroquine intake, repeat the dose of chloroquine.

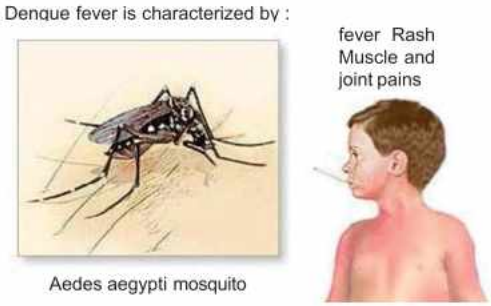
- Chloroquine, primaquine and sulphadoxine + pyrimethamine should not be given, if patient is suffering from G6PD deficiency. G6PD is one of many enzyms which help in carbohydrate metabolism to provide energy. It is enzyme deficiency which can cause haemolytic anaemia.
- Report back if haematuria or high-coloured urine, cyanosis develops; stop primaquine immediately.
- If no improvement after 48 hours or if condition worsens, occurrence of cerebral malaria symptoms, seek medical help immediately.

2.5 DENGUE

Dengue is the most important emerging tropical viral disease of human beings in the world today. *Aedes aegypti*, a day time mosquito, is the principal vector in India and countries of South-east Asian region, mostly seen in rainy season or in months following rainy season. All cases of dengue fever should be reported. Please refer for more details in BNS-041, Block 3, Unit 1.

Types of dengue fever

Dengue virus infection (DEN-1, 2, 3, 4) may be asymptomatic or present as: **Dengue without warning signs**, **Dengue with warning signs**, and **Severe dengue**—replacing earlier terms like classical DF, DHF, and DSS.



2.5.1 Salient Features

Let us discuss characteristic features related to dengue fever as given in Box below:

- **Dengue fever** is an acute febrile illness of 2-7 days duration with two or more of the following manifestations: Headache, retro-orbital pain, myalgia/arthralgia, rash, haemorrhagic manifestation (petechiae and positive tourniquet test) and leucopenia.
- **Diagnosis:**
  - Confirmation of diagnosis of DF is based on demonstration of IgM antibody specific for dengue virus.
  - Total leucocytes count is either normal or decreased.
  - Platelet count is less than normal.
- **Dengue haemorrhagic fever (DHF):** If one or more of the following are present: Positive tourniquet test, petechiae, ecchymosis or purpura, bleeding from mucosa, injection or other sites, haematemesis or melaena,

thrombocytopenia (platelets 100,000/mm^3 or less) and evidence of plasma leakage.

- **Dengue shock syndrome (DSS):** All the above criteria of DHF plus signs of circulatory failure.

2.5.2 Assessment

- Obtain complete history:
  - Present complaints, fever characteristics - onset, duration, periodicity etc.
  - Any other associated symptoms like Headache, retro-orbital pain, myalgia/arthralgia, rash, haemorrhagic manifestation (petechiae and positive tourniquet test) and leucopenia, bleeding, urinary problems etc.
- **Physical examination**
  - Head to toe examination
  - Check vital signs: Temperature, Pulse, Respiratory Rate (T.P.R.) and B.P.
  - The tourniquet test has limited utility in the 2023 guidelines; preferred diagnostic tools now include NS1 antigen and IgM/IgG ELISA.
  - Look for any pallor, rashes etc.
- **Investigations**
  - Complete Blood Count (CBC) and Hematocrit
  - ELISA, NS1 (non-structural protein), Rapid dengue test kit How

to perform the tourniquet test

Inflate the blood pressure cuff to a point mid-way between the systolic and diastolic pressures for 5 minutes. A test is considered positive, when 10 or more petechiae per 2.5 cm^2 are observed. In DHF, the test usually gives a definitive positive result (i.e. >20 petechiae). The test may be negative or mildly positive during the phase of profound shock.

Attention: Look for danger signs	
• Fast breathing	• Haemetemesis
• Severe abdominal pain	• Bleeding from gums
• Continuous vomiting	• Cold and clammy skin
• Restlessness	• Delayed capillary refill time(>2 sec)

2.5.3 Treatment/ Management

Let us discuss treatment and management as given below:

DF/DHF has an unpredictable course. Most patients have a febrile phase lasting 2–7 days followed by a critical phase (2–3 days), during this phase, the patient is afebrile and is at risk of developing DHF/DSS. A patient can progress from DHF to DSS and depending on the stage of the disease when the patient reports, a

mixed picture can be seen. DHF is classified into four grades of severity, where grades III and IV are considered to be DSS. The presence of thrombocytopenia with concurrent haemoconcentration differentiates grades I and II DHF from DF.

Grade I : Fever accompanied by non-specific constitutional symptoms; the only haemorrhagic manifestation is a positive tourniquet test and/or easy bruising.

Grade II : Spontaneous bleeding in addition to the manifestations of grade I patients, usually in the form of skin or other haemorrhages.

Grade III : Circulatory failure manifested by a rapid, weak pulse and narrowing of pulse pressure or hypotension, with the presence of cold, clammy skin and restlessness.

Grade IV : Profound shock with undetectable blood pressure or pulse.

A) **DF and DHF during febrile phase**

Most cases of DHF grade I can be managed on outpatient basis:

Nonpharmacological	Pharmacological	Patient Education
• Rest and plenty of oral fluids or ORS • Follow-up daily until temperature is normal • Check haematocrit daily where possible • Check for signs of severe illness	• Tab. Paracetamol 500 mg 6 hourly (not more than 4 times in 24 hours) • ORS in patients with dehydration **Caution** • No role of antibiotics, steroids; • Do Not give aspirin or ibuprofen as these medicines may aggravate bleeding	• Instruct patient to report immediately, if any of the following danger signals appear: • Severe abdominal pain • passage of black stools • bleeding into the skin or from the nose or gums • sweating and cold skin

Management of Dengue Without Warning Signs (2023 WHO Classification)

Both the patient and their family members should be instructed about the following during outpatient care:

Educate about warning signs and seek care if any appear:

- Severe abdominal pain or persistent vomiting
- Red spots or patches on skin
- Bleeding from nose or gums
- Vomiting blood
- Black tarry stools
- Drowsiness or irritability
- Pale, cold or clammy skin
- Difficulty in breathing

Encourage adequate oral fluid intake such as ORS, coconut water, or clear soups. Avoid carbonated and caffeinated drinks.

Ensure adequate bed rest.

Monitor for over-hydration in infants and young children.

Fever management: Keep body temperature below 100°F. If fever exceeds 100°F, give paracetamol at 10 mg/kg every 6 hours. Do not exceed 4 g/day for adults. Avoid aspirin and NSAIDs.

Use tepid sponging on the forehead, armpits, and limbs; lukewarm baths may help in high fever.

Follow-up: Patients should be monitored for disease progression. Clinical review with CBC and hematocrit should be done as needed, based on symptoms.

Management of Dengue with Warning Signs and Severe Dengue (2023 WHO Classification)

The critical phase typically begins at defervescence and is marked by plasma leakage, often indicated by a rapid fall in platelet count and a rise in hematocrit ≥10% above baseline. Start intravenous fluid therapy in patients with poor oral intake, rising hematocrit, or warning signs.

Monitor the following parameters:

- General condition, appetite, vomiting, bleeding, and warning symptoms
- Peripheral perfusion (e.g., capillary refill, skin temperature) frequently, as it is a quick and early indicator of shock
- Vital signs: Check temperature, pulse, respiratory rate, and blood pressure every 2–4 hours (non-shock), every 1–2 hours (shock)
- Serial hematocrit: At least every 4–6 hours in stable patients; more frequently if unstable or if bleeding is suspected. Preferably before fluids; otherwise, after bolus—not during
- Urine output: Record every 8–12 hours in stable cases; every hour in shock/fluid overload. Aim: ≥0.5 mL/kg/h based on ideal body weight

Additional investigations for adults, those with comorbidities, or severe cases:

- Random blood glucose
- Blood gas with lactate
- Serum sodium, potassium, calcium
- Renal (urea, creatinine) and liver function tests (AST, ALT, bilirubin)
- Coagulation profile
- Chest X-ray
- Blood group
- Cardiac enzymes (Pro-BNP, Troponin) or ECG if risk factors present
- Serum amylase and abdominal ultrasound

Indications for hospitalization

- Signs of significant dehydration: Tachycardia, increased capillary refill time (>2 seconds), cool, mottled or pale skin, diminished peripheral pulses, changes in mental status, oliguria, sudden rise in haematocrit or continuously elevated haematocrit despite administration of fluids, narrowing of pulse pressure (<20 mmHg), hypotension (a late finding representing uncorrected shock).
- **Note:** Initiate IV therapy with crystalloid fluids such as 5% dextrose in normal saline 6 ml/kg/h for 1–2 h and REFER the patient to PHC/ CHC or District Hospital.

B) **DHF grade III (with circulatory failure) and grade IV (profound shock with undetectable blood pressure and pulse)**

Initial management and referral - Initiate IV therapy with crystalloid fluids such as 5% dextrose in normal saline 6 ml/kg/h for 1–2 h. And IMMEDIATELY

REFER to a hospital where trained personnel can manage shock and where blood transfusion facilities are available

Monitor - Monitor patient's progress

- **Improvement -** Haematocrit falls, pulse rate and blood pressure stable, urine output rises.
- **No improvement -** Haematocrit or pulse rate rises, pulse pressure falls below 20 mmHg, urine output falls.
- **Unstable vital signs -** Urine output falls, signs of shock.

2.5.4 Patient Education

- Carefully watch for danger signs and immediately report to a doctor. Do Not wait.
- Do not take aspirin or ibuprofen for fever or pain.
- The complications usually appear between the third and fifth day of illness.
- Watch the patient for two days after the fever disappears. Arthralgia may continue longer but eventually resolves with no sequelae.
- Give large amounts of fluids (water, soups, milk and juices) along with normal diet.
- All control efforts should be directed against the mosquitoes and prevent mosquito bites by using appropriate full sleeved clothing, repellent creams, bed nets, etc.

2.6 CHIKUNGUNYA

Chikungunya is caused by an arbovirus and transmitted by *Aedes aegypti* mosquito. It resembles dengue fever, it is rarely life-threatening. After an incubation period of 4–7 days, symptoms last for 3–7 days. Severe cases of chikungunya can occur in the elderly, in the very young (newborns) and in those who are immunocompromised.

2.6.1 Salient Features

- Sudden onset of flu-like symptoms including fever, chills, headache, nausea, vomiting, severe joint pain (arthralgia) and rash.
- Rash may appear at the outset or several days into the illness; its development often coincides with falling of an elevated temperature, which takes place around day 2 or day 3 of the disease.
- The rash is most intense on trunk and limbs.
- Migratory polyarthritis usually affects the small joints. The joints of the extremities in particular become swollen and painful to touch.
- Although rare, the infection can result in meningoencephalitis, especially in newborns and those with pre-existing medical conditions.
- Pregnant women can pass the virus to their foetus.
- Haemorrhage is rare and all but a few patients recover within 3–5 days.

- Residual arthritis, with morning stiffness, swelling and pain on movement may persist for weeks or months after recovery.

2.6.2 Assessment

- Obtain complete history:
  - Present complaints, fever characteristics such as severity, onset, duration, periodicity etc.
  - Any other associated symptoms like chills, headache, nausea, vomiting, severe joint pain (arthralgia) and rash
- Physical examination: Head to toe examination, Check vital signs

Diagnosis:

Serology test (ELISA, PCR): Refer to CDU or PHC/CHC/DH for test.

2.6.3 Treatment/Management

Treatment is mainly supportive as there is no specific treatment and is same as for dengue (For details see section on Dengue).

Dengue fever and chikungunya outbreaks evolve quickly, requiring emergency actions to immediately control infected mosquitoes in order to interrupt or reduce transmission and to reduce or eliminate the breeding sites of the vector mosquito, *Ae. aegypti*.

2.7 TYPHOID OR ENTERIC FEVER

It is caused by *Salmonella typhi* and *paratyphi*. *Salmonella typhi* causes a variety of illnesses including asymptomatic carriage, gastroenteritis, enteric fever, etc.

2.7.1 Salient Features

The onset of fever is typically gradual, continuous (temperature up to 40°C) with constitutional symptoms like malaise, anorexia, lethargy, headache, constipation or diarrhoea (pea-soup stool), etc. which may be associated with abdominal pain and tenderness, and/or chronic abdominal pain and tenderness, hepatomegaly, splenomegaly. Usually, the patient is sick and toxic looking with a coated tongue and has a soft splenomegaly. Typhoid fever can present atypically in young infants as an acute febrile illness with shock and hypothermia.

Examination may reveal a toxic look with relative bradycardia and mild soft splenomegaly. Complete blood counts in most cases with typhoid fever are normal. Leucopenia or pancytopenia is seen in 10–25% cases.

Diagnosis is suggested by rising titers of 'O' antibodies (Widal test) and confirmed by isolation of organism in blood culture, bone-marrow, urine or stool. Level of 1 in 160 dilution or more is taken as positive test. Widal test may be negative in cases with fever of less than 5–7 days duration. Blood culture and sensitivity testing/ IgM.

Complications like hepatitis, peritonitis, meningitis, pneumonitis, and myocarditis can occur, usually after the first week.

2.7.2 Assessment

Diagnosis is based on the following :

- History: Obtain complete history with present complaints like fever and its characteristics.
- Physical examination:
  - Head to toe examination
  - Look/ feel for associated symptoms like abdominal pain and tenderness, hepatomegaly, splenomegaly, toxic look, relative bradycardia
- Investigations:
  - Hemogram, Complete Blood Count, Widal test, Blood culture, urine and stool culture

Note: Refer to PHC/CHC or DH for investigations not available at HWC.

2.7.3 Treatment/ Management

Specific therapy. Multidrug resistance is prevalent among *S. typhi*. Antibiotics are recommended on the basis of available institutional culture and sensitivity pattern or epidemiological data. (Table 2.5)

Table 2.5: Specific therapy for uncomplicated enteric fever

Uncomplicated Enteric Fever	Enetric Fever in Children Uncomplicated Enteric Fever
Tab. Ciprofloxacin 10 mg/kg in 2 divided doses, up to a maximum of 750 mg twice a day for 10-14 days (for 1 week after the fever subsides). Oral drug should be taken about an hour after meals and not on empty stomach. Or Tab.Ofloxacin 200-400 mg daily for 5-7 days. Or Cap. Azithromycin 10-20 mg/kg (max 500 to 1000 mg/day) once daily for 5 days.	Tab. Cefixime 10-20 mg/kg/day in 2 divided doses for 14-21 days. Or Tab. Chloramphenicol 50-75 mg/kg/day in 4 divided doses for 14-21 days Or Cap. Ampicillin 75-100 mg/kg/day in 4 divided doses for 14 days Or Tab. Cotrimoxazole (8TMP +40SMX)/ day in 2 divided doses for 14 days. Or Cap. Azithromycin 10-20 mg/kg (max 500 to 1000 mg/day) once daily for 7 days.
The usual duration of antibiotic treatment is 10-14 days or at least 7 days after the patient has become afebrile. Intravenous therapy is used during acute phase among the admitted patients. Less sick patients can be treated with oral drugs on an outpatient basis.	

Initial management

- **Adequate nutrition and hydration** should be maintained ensuring adequate intake either orally or with intravenous fluids.
- **Management of fever** (see section on acute fever):
  - Use antipyretics judiciously as they can cause precipitous fall in temperature and even shock, in enteric fever.
  - Hydrotherapy is preferred for fever management in such patients.
- **Refer:** to PHC/CHC or DH
  - For confirmation of diagnosis, if you suspect enteric fever based on clinical presentation
  - In case of already confirmed severe enteric fever
  - if patient is very sick, not accepting orally with inadequate urine output, patient has altered sensorium/drowsiness or is having very high pyrexia particularly in the second week of illness when the risk of complications increases or if the complications have already ensued
  - Patient worsens or fails to show any response to therapy in 4–7 days or so

Remember:

Before referring the patient, insert IV cannula and start I/V fluid infusion.

- **Monitor:** For complications and usual indications for hospitalisation- Myocarditis (fall in perfusion and BP, arrhythmias), altered sensorium, shock (tachycardia, cold clammy skin, diaphoresis, hypotension), perforation peritonitis (acute pain in abdomen, guarding, rigidity, hypotension, bilious vomiting).

2.7.4 Patient/Parent Education

- Continue small frequent feeds. Give plenty of oral fluids and compensate for increased fluid loss from the body due to high grade fever.
- Fever usually lasts 5–7 days even after starting effective treatment in most cases. Frequent change of therapy should, therefore, be avoided.
- The treatment should be completed till the patient has been afebrile for at least 7 days as incomplete treatment increases the risk of relapse and emergence of resistance.
- Inform the caregivers of the patients about the complications as described above.
- Ciprofloxacin and ofloxacin are very bitter and cause severe nausea and gastritis. Patient should be asked to report any missed doses due to vomiting.
- Three types of vaccines are available to prevent this disease (see section on immunisation for details).

2.8 LET US SUM UP

In this unit you reviewed the definition of fever and its types, pathophysiology, common causes and signs and symptoms. You also reviewed the methods of

recording temperature and providing cold therapy. Fever is a common manifestation seen in several conditions like infections, trauma, cancer and use of certain medicines. Some common fevers are those seen in malaria, dengue, chikungunya and typhoid etc. In this unit you learnt about the assessment, initial management and referral for common fevers and fever with rash. Appropriate assessment and management can minimise the risk for complications and their consequences.

2.9 ACTIVITY

A 35 year old male (Weight 60 kg) walks in the centre complaining of fever for last one day. There is no chills/ rigors or sweating. No associated symptoms like skin rash, lethargy, confusion, restlessness, stiff neck. Patient is able to drink. On examination, Temperature: 39.6ºC, Pulse: 90/minute, Respiration: 26/min, B.P. 116/ 80; malaria test: negative; no apparent cause of fever seen.

How will you manage this case?

- Visit the OPD and perform complete assessment of a case of fever.
- Guidelines
  - History taking
  - Fever: severity, onset, duration, periodicity

    .....

    .....
  - Associated symptoms

    .....

    .....
  - Any medicines taken

    .....

    .....
  - Physical examination

    .....

    .....
  - Investigations to be carried out (if any)

    .....

    .....

2.10 REFERENCES

1) Peter Crosta. Fever: Symptoms, Causes and Treatments. http://www.medicalnewstoday.com/articles/9895.php .....Last updated: Tue **7 July**

2) Taylor Lillis, LeMone Lynn. Fundamentals of Nursing: The art and science of nursing care. 7th edition, 2011.Wolters Kluwer (India) Pvt Ltd, New Delhi

3) Alterations in Body Temperature. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp 143-170.

4) Physiological Changes in Infected Patients. In: Oxford Textbook of Medicine. Warrell DA, Cox TM, Firth JD, Benz EJ Jr (eds), 4th Edition, Oxford University Press, 2003; pp 1.289-1.292.

5) WHO informal consultation on fever management in peripheral health care settings: a global review of evidence and practice. 2013. *Available at:* www.who.int/malaria/publications/atoz/9789241506489/en/

6) National Antimalaria Programme (NAMP) Drug Policy, Government of India, Ministry of Health and Family Welfare, Directorate General of Health Services. Directorate of National Anti Malaria Programme. Delhi, 2010.

8) Guidelines for Clinical management of Dengue fever, Dengue Haemorrhagic Fever, Dengue Shock Syndrome. National Vector Borne Disease Control Programme (NVBDCP), Government of India, 2008.

9) Facility Based IMNCI (F-IMNCI) Participants manual. WHO, UNICEF, and Ministry of Health & Family Welfare, Government of India, 2009.

10) Salmonellosis. In: Harrison's Principles of Internal Medicine. Fauci, Braunwald, Kasper et al (eds), 18th Edition, McGraw Hill Company Inc., New York, 2012; pp 1274-1281.

11) IAP Task Force report: Management of Enteric Fever in Children. Indian Paediatrics 2006; 884-887.

UNIT 3 MANAGEMENT OF COMMONACHES AND PAINS

Structure

3.0 Introduction

3.1 Objectives

3.2 Suspecting and Identification of Common Aches and Pains

- 3.2.1 Abdominal Pain
- 3.2.2 Chest Pain
- 3.2.3 Joint Pain / Joint Swelling
- 3.2.4 Back Pain
- 3.2.5 Other Aches and Pain

3.3 Providing Primary Care and Referral

- 3.3.1 Abdominal Pain
- 3.3.2 Chest Pain
- 3.3.3 Joint Pain
- 3.3.4 Back Pain
- 3.3.5 Other Pains

3.4 Let Us Sum Up

3.5 Activity

3.0 INTRODUCTION

Various health programmes aimat providing health care facilities in urban or rural areas to the citizens at their door step. As you have read in practical -2 of this block regarding the diagnosis, management and referral of Patients with fevers at sub-centre level , similarly learning about identification, care and referral of common aches and pains is essential. Various underlying conditions project in form of aches and pain as symptoms of disease and hence, in this practical we shall learn the management of common aches and pains with which the client may present at the sub-centre. This practical will help you in developing skills to suspect, provide primary care and refer a patient presenting with aches and pains.

3.1 OBJECTIVES

After completing this unit, you should be able to:

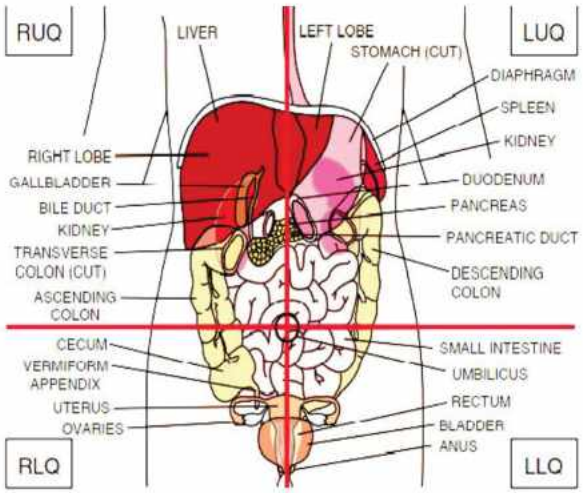
- assess and identify common aches and pains;
- develop skills in providing primary care to patients with common aches and pains;
- refer the patients in need of further management; and
- appraise the role in managing patients at sub-centre level.

3.2 SUSPECTINGAND IDENTIFICATION OF COMMON ACHES AND PAINS

Let us see how the common aches and pains can be detected in the community since you as a Mid Level health care provider have to suspect and identify the clients requiring major or minor care and send them for further referral as required. So, let us study one by one, the various common aches and pains which in the community a patient may present with and identify the signs that necessitate action at your end.

3.2.1 Abdominal Pain

Abdominal Pain is a symptom which can occur due to various reasons. If the person presents to you with abdominal pain, he/she can have a number of problems .The knowledge about location of organs in abdomen would help you to understand diseases and disorders of abdomen. Hence, it is important that you brush-up your knowledge regarding the anatomy of abdominal organs as shown in (Fig. 3.1). For details of which refer Theory Course 2, Block 1, Unit 1 also.



RUQ – Right Upper Quadrant

LUQ – Left Upper Quadrant

RLQ – Right Lower Quadrant

LLQ – Left Lower Quadrant

Fig. 3.1 : Quadrants and Organs of the Abdominal Cavity

Assessment for Abdominal Pain: You should carry out assessment to identify abdominal pain by history taking and physical examination. You would also require articles for abdominal examination as given below:

Articles Required: Stethoscope, Inch Tape, (Foetoscope and Pregnancy Test Kit as Optional)

Steps of Procedure: Let us go through the steps of history taking:

a) **History Taking:**

Let us go through the steps of history taking.

1) Start by Taking complete history including onset , duration, location , quality , severity, degree and region where pain is more.

It is important to realise that history taking itself can help diagnose the cause of abdominal pain in 70% of cases.

1) Ask about the past Medical, Surgical, Social and Family history along with the patient medication history. Many medications are known to cause stomach upset and abdominal pain and hence, need to be identified.

2) Ask patient about his dietary habits. Ask about food allergies, gluten intolerance lactulose intolerance as all of these are associated with chronic diarrhoea and weight loss.

3) In cases of females,illicit data on menstruation, dysmenorrhoea , premenstrual syndrome or history of any other disease. Suspect pregnancy and perform pregnancy test for all women of child-bearing age.

a) **Physical Assessment:**

1) Perform a thorough check up, illiciting data on subjective and objective symptoms related to pain and symptoms occurring along with the pain e.g. nausea, vomiting and presence of blood in stools or emesis.

2) Ask the patient where the pain is locatedor is being referred. Observe the abdominal quadrant where the pain is being stated since, the organ in that quadrant will be involved. Ask where the pain hurts more.

3) Ask the patient to describe the kind of pain he is experiencing and how and when it started. See that pain is continuous, steady or it comes and goes just like colic (i.e. starts and stops abruptly).

4) Observe the sitefor tenderness /lumps if any. Look for presence of distention if any. Examine properly since some certain pains need to be treated on emergency basis e.g. pain in appendix due to appendicitis.

Be alert for the RED FLAGS of Abdominal Pain which raise suspicion about a serious pathology associated with the pain i.e. presence of Hypotension, Confusion or changes in consciousness, shock, dehydration, rigid abdomen, patient lying very still or twisting body, absent or altered bowel sounds, guarding/rebound tenderness, tenderness to percussion, haematemesis/melaena and/or Suspicion of a medical cause for abdominal pain, unexplained weight loss.

5) Perform abdominal examination as per following:

a) **Inspection:** See for anaemia/Jaundice/ visible peristalsis/abdominal distention, cruising , ecchymosis, dehydration by checking skin turgidity and so on.

b) **Auscultation :** Check for abdominal sounds by help of stethoscope. Absent sound means peritonitis, paralytic ileus and high pitched sounds are present in subacute intestinal obstruction. Hear for bruits that can suggest aneurysm.

c) **Percussion :**See for dullness, fluid shift, tenderness. Also look for the change in size and abdominal girth.

d) **Palpation :** See for lumps, tenderness, enlargement of anyorgan, lymph nodes.

e) **Assess the pain as per specific sites:** Keeping in mind above points, let us now go through assessment of abdominal pain as per specific sites:

1) **Pain in the upper right/ left quadrant of abdomen**

a) Pain in the upper part of the stomach which is dull and is being referred to other parts of abdomen, directs towards indigestion, gastritis, ulcers and tumors.

b) Pain associated with heart burn, burping may be due to acid reflux disease. The sensation is usually of the burning pain.

c) Pain located over small intestine, occurring after or before food, may point to enteritis, intestinal parasites, tumors, intestinal colic, intestinal obstruction. If pain subsides after passing diarrhoea, it may point to enteritis .

d) If the patient has pain in the right upper quadrant of the abdomen which reaches even up to chest, it points to liver or biliary problems. Liver problems like hepatitis is associated with anorexia, jaundice, dark urine, pale stools, hepatomegaly, pyrexia and utricaria.

e) Biliary problems are associated with cramping colicky pain (biliary colic) originating in the right upper quadrant and radiating to back or pain just below the ribs. Vomiting is an associated symptom. It is commonly associated with diagnosis of cholecystitis. .

f) If the patient has pain in the upper left quardant of the abdomen, it points to spleen problems like enlargement due to various conditions along with other presenting symptoms. e.g. if with fever, malaria can be suspected.

2) **Pain in the lower right/ left quadrant of abdomen**

- Pain located over large intestine / left abdomen maypoint to bacillary dysentery or tumors.
- Pain over appendicular area may point to appendicitis if the pain is colicky and starts around epigastrium /umbilicus and is associated with nausea, diarrhoea, loss of appetite and constipation.
- If the pain is over the centre of the pelvic area, it may be due to urinary bladder problems e.g. cystitis, tumors, infections. It may be associated with other symptoms like dysuria (pain or burning during micturition), frequency, haematuria (blood in the urine), urgency and cloudy urine.
- Lower abdominal pain in females, maydirect to salphingitis if associated with vaginal discharge / nausea/ vomiting or ectopic pregnancy when associated with left or right iliac fossa pain , heavy vaginal spotting or slight bleeding in some cases.
- Abdominal pain in case of advanced pregnancy, may point to obstetrical emergencies or impending labour depending on the trimester and presenting symptoms.
- In female pain over pelvic area, may be due to endometriosis, fibroid, ovarian cyst and retroverted uterus, etc. Pain in pelvic area ranging frommild to severe and pain during sex points to pelvic inflammatory disease.

3) **Centrally located pain of abdomen**

- Pain over the umbilical region is due to intestinal worms and infections.
- In case of pancreatitis, the pain can be acute / chronic and may radiate to back. It may be stabbing in nature. It is centrally located and associated with vomiting and the patient may look pale and clammy.
- Leaking abdominal aortic aneurysm is associated with severe, sudden onset of central abdominal pain or generalised abdominal pain radiating to the back for up to a week.



Fig. 3.2: Abdominal pain

4) **Other conditions :**

- A hard or rigid belly could mean acute abdomen due to appendicitis or peritonitis. Patient complains of severe abdominal pain or cramping sensation. On physical examination 'guarding' may be found. The referred pain is present in shoulder.
- Bruising around the navel (Cullen's sign) or at the flanks (Grey Turner's sign) along with pain in abdomen suggests abdominal bleeding.
- Abdominal pain with bloating and bouts of diarrhoea or constipation may be due to Irritable Bowel Syndrome.
- Conditions like cancers in organs of liver, pancreas, stomach, gall bladder or ovaries causes abdominal pain but in later stages. So, look into other associated symptoms like loss of appetite, weight loss, persisted vomiting, persistent bloating and change in bowel habits.
- **In children** pay close attention to non-verbal clues like wincing, lethargy, unusual positioning. Parent's description of pain should also be heard. See how the child coughs, walks, climbs. e.g. appendicitis may have vomiting along withpain , acute polynephritismayhave painwithvomiting anddiarrhoea. Peptic ulcer has nocturnal pain, colic and maynot be relieved by food. Stomach worms and giardiasis may also cause stomach pain.

Given below is the format for the assessment of abdominal pain. (Table 3.1)

Table 3.1 : Format for Assessment of Abdominal Pain

Name of the Patient ..... **Age ..... Gender..... Filled by ..... Date .....**		
	Criteria	**Findings**
History	a) Medical Disease related to Heart, Lungs, Abdomen, Diabetes or Chronic disease	
	b) Surgical Disease or Trauma or Any surgery	
	c) Menstrual History (for Women)	
	d) Obstetrical History	
	e) Dietary History	
	f) History of Substance abuse	
	g) Food allergies (if any)	
	h) Medication history	

Physical Assessment	a) General examination • Pulse • BP • Respiration • Temperature • Levels of Consciousness		
	b) Site of Pain (Upper/Lower, Quadrant affected, Possible organ affected, Centrally located)		
	c) Onset of pain (Before taking food, After taking food, Sudden, Slow, Steady)		
	d) Character of pain (Stabbing, Cramping, Burning, Dull, Acute, Chronic, Colicky)		
	e) Radiation of pain (Back, Chest, Over the abdomen, Localised)		
	f) Associated Symptoms (Nausea/ Vomiting , Bleeding (Bleeding per vagina/Haematemesis, Diarrhoea, Heartburn, Burping, Jaundice, Fever, Utricaria, Vaginal Discharge, Anorexia, Constipation, Dysuria, Haematuria, Urine Urgency, Cloudy Urine, Pallor, Hard or Rigid abdomen, Cullens Sign/Grey Turners Sign, Lethargy , Guarding, Weight loss, Bloating, Change in Bowel Habits, Dehydration, Tenderness, lumps.		
	g) Time Course of pain (Has become worse over the time, Has become better over the time, No change)		
	h) Exacerbating /Relieving Symptoms (Position, Diarrhoea/ Passage of Stool/Urine, Coughing, Food, Medicines)		
	i) Severity Rate the pain from 1-10 for 1 being the slight pain and 10 being the worst pain		
	j) Possible organ affected		
	k) Findings on: • Inspection • Auscultation • Percussion • Palpation		
	Possible nursing diagnosis:		
	Advices and Referral details:		

By the help of Table 3.1, you can gather data on abdominal pain and make a diagnosis of the abdominal pain.

3.2.2 Chest Pain

Let us now go through the assessment for chest pain.

Chest pain can be related to many diseases and a thorough and rapid assessment is

important to identify the actual reason for chest pain. The reasons can be many and only by developing skills, one can detect the reasons of the pain.



Fig. 3.3 : Chest Pain

Chest Pain: Assessment for chest pain require following articles as given below:

Articles required: Watch with the minute hand, Stethoscope

Steps of Procedure: You should take thorough history along with doing physical examination.

a) **History taking**

- Take complete history including onset, duration, location, quality, severity, degree of pain.
- Ask patient's past history of illness especially related to chest pain, previous episodes of the chest pain as these may indicate signs of impending diseases.
- Ask about allergies, last meal taken and events that have occurred.
- Ask about present and previous treatments, medications and investigations undergone.

b) **Physical Examination**

- Always check pulse rate/ rhythm, blood pressure and auscultate heat sounds.
- Ask regarding conditions that improve or worsen the pain, quality of pain, situation which caused the pain, change in the pain with repositioning, its radiation, time period of the pain, and accompanying symptoms, if any. Also, find out the aggravating and alleviating factors.
- You should be able to differentiate the cardiac chest pain from non-cardiac chest pain to understand the actual reason for the pain as given in Table 3.2.

Table 3.2: Difference of Cardiac and Non-Cardiac Chest Pain

Cardiac Chest Pain	Non-Cardiac Chest Pain
Pain is usually sharp, constricting, with heaviness, crushing , congestive and squeezing. The usual action to take the hand to the chest	Pain is burning and sharp, stabbing and pricking.

Pain is located centrally and fans outwards to jaw, neck, arm and upper abdomen	The usual action is to take the hand to abdominal region or somewhere above it Pain is located more as right or left sided and does not radiate but is fixed at a particular spot
An often trigger is usually physical exertion or psychological stress or extremes of temperature	Often triggers include overeating, caffeinated drinks, alcoholic beverages, spicy foods, changes in position like lying flat or bending over
Relieved by rest, nitrates	Relieved by antacids
Associated with difficulty in breathing, dizziness and excessive sweats and even fainting	Associated with excessive belching, vomiting and changes in appetite

c) **Illicit the information on the characteristics of the pain**

- **An aching squeezing pain**, a feeling of pressure, heaviness, burning pain, usually subsiding in 10 minutes with pain radiating to jaw, neck, arms that increases with eating, physical effort, smoking, cold weather, stress, anger, hunger, lying down occurs with angina pectoris. It is associated with diaphoresis, nausea, vomiting and dyspnea. But it usually goes away with rest.
- **Tightness or pressure**, burning or aching pain, with shortness of breath, diaphoresis, weakness, anxiety, nausea, sudden onset, lasting to ½ to 2 hrs occurs with acute myocardial infarction. Present across chest but can radiate. There is a feeling of heaviness, vague burning, indigestion and pain increases with exertion and anxiety and is not relieved by rest.
- **Sharp and continuous stabbing pain** with, sudden onset and friction rub feeling, radiating to neck and left arm increases with deep breathing and supine position occurs with pericarditis. Associated symptoms can be dry cough, joint pains and fever.
- **Tearing pain with sudden onset** with difference in BP on right and left arm and can radiating to back, neck, shoulders is with dissecting aortic aneurysm.
- **Sudden stabbing pain**, may be accompanied with cyanosis, dyspnea, cough with haemoptysis, associated with pulmonary embolus. It worsens with deep breath.
- **Sudden severe pain**, accompanied with dyspnea, increased pulse rate, decreased breath sounds, deviated trachea, is known as pneumothorax. This pain is usually referred to the shoulder and is present over lateral region of the chest.
- **Dull, pressure** like, squeezing pain, in substernal and epigastric areas is known as oesophageal spasm.
- **A sharp and severe pain in lower chest** or upper abdomen is usually due to hiatal hernia after eating a heavy meal increased by bending or lying down.

Be alert for the RED FLAGS of Chest Pain which raise suspicion about a serious pathology associated with the pain i.e. abnormal vital signs, pallor, sweating , dyspnea, nausea, palpitations, fever, chills, headache, malaise, wheezing, decreased / asymmetric breath sounds, heart murmurs, pericardial friction rub, symptoms lasting 20-30 minutes or more.

Given below is the format for the assessment of chest pain. (Table 3.3)

Table 3.3 : Format for Assessment of Chest Pain

Name of the Patient		
Age ..... Gender..... Filled by ..... Date		
	Criteria	**Findings**
History	a) Medical Disease related to Heart, Lungs, Abdomen, Diabetes or Chronic disease	
	b) Surgical Disease or Trauma or Any surgery	
	c) Dietary History	
	d) History of Substance abuse/Smoking	
	e) Food allergies (if any)	
	f) Medication history	
Physical Assessment	a) General examination • Pulse • BP • Respiration • Temperature • Levels of Consciousness	
	b) Site of Pain	
	c) Onset of pain (Severe, Sudden, Slow, Steady)	
	d) Provoking factors (exertion, stress, position, change with repositioning)	
	e) Character of pain (Stabbing, Cramping, Burning, Aching, Sharp, Continuous, Tearing, Dull, Acute, Chronic)	
	f) Radiation of pain (Jaw, Arms, Neck, Back, Chest , Arm, Abdomen, Localised)	
	g) Associated Symptoms (Nausea/Vomiting, Dyspnea, Diaphoresis, Weakness, Cough, Joint Pain, Cyanosis, Haemoptysis).	
	h) Time Course of pain (Intermittent, Continuous)	
	p) Exacerbating/Relieving Symptoms (Position, Rest, Medication)	
	q) Severity Rate the pain from 1-10 for 1 being the slight pain and 10 being the worst pain	
	Possible nursing diagnosis:	
	Advices and Referral details:	

Thus, Table 3.3, summarises the various points to illict data about chest pain and hence, arrive at a particular nursing diagnosis.

3.2.3 Joint Pain / Joint Swelling

Joint pain can result due to various diseases resulting from the pathophysiological changes. You should be well versed with the various reasons that lead to joint pain.



Fig. 3.4 : Joint pain

Assessment to identify Joint Pain: Let us now go through assessment to identify Joint Pain

Articles required: Knee hammer, stethoscope

Steps of Procedure

a) **History taking**

- Take complete historyand look for the associated symptoms like inflammation, reduced joint mobility, erythema, warmth, stiffness and limitation of range of motion.
- Complete family history, previous history of illness, history of involvement in sports activity and type of physical activity involved.
- Illicit the data site on the pain, itsseverity, provoking and relieving factors, ability to performduties/work, how much activities and up to what level activity can be performed.

b) **Physical Assessment**

- **Inspect the joints**. See for ecchymosis, swelling, redness, tenderness. Observe gait and posture.
- **Check the range of motion**. Active Range of Motion is checked first and then the Passive Range of Motion.
- **Palpate, Percuss and Asculatate the joints**. See for the point tenderness, soft masses, bulges in tissues that fill the normal spaces, presence of crepitus felt on auscultation. Crepitus is common when there is derangement of bone, cartilage and menisci.

c) **Look for the following**

- Inflammatory condition like arthritis is the major disease causing joint pain and is common in older people. The most common site for the joint pain in arthritis is knee. Other reasons include bursitis, gout, synovitis. In case of gout, there are changes in the big toe of the foot.

- Join pain and joint swelling may also be the outcome of joint injury due to strain, sprain, dislocation or fracture. The reduced mobility occurs in strain or sprain but in fracture the patient is unable to move the affected part.
- Joint pain may also be related to diseases like dengue, chikungunya, flu, rheumatic fever and certain infectious and auto-immune diseases.
- **In children** , rickets may be the reason.
- Swelling and ecchymosis if marked indicated complete ligament and tendon tear with no gross change in Range of Motion.
- Increased Range of Motion is present in Unstable Joint and Decreased Range of Motion in effusion capsule fibrosis, bony abnormalities and is associated with rashes and bony hypertrophy.
- Changes in Gait and Posture are seen in Scoliosis, muscle spasmor neurogenic involvement.
- Tenderness on sciatic notch with radiation to leg indicated irritation to sciatic/ nerve or nerve roots.

Be alert for the RED FLAGS of Joint Pain which raise suspicion about a serious pathology associated with the pain i.e. unexplained weight loss, immunosuppression, use of steroids, fever, pain not relieved by rest, urinary retention, bladder /bowel incontinence, fatigue, pain at rest or at night, waking up in pain at night, infection or other signs of systemic illness.

Given below is the format for the assessment of joint pain. (Table 3.4)

Table 3.4 : Format for Assessment of Joint Pain

Name of the Patient		
Age ..... Gender..... Filled by ..... Date		
	Criteria	**Findings**
History	a) Medical Disease related to Heart, Lungs, Abdomen, Diabetes or Chronic disease	
	b) Surgical Disease or Trauma or Any surgery	
	c) Dietary History	
	d) History of Job /Sports e) General examination	
Physical Assessment	• Pulse	
	• BP	
	• Respiration	
	• Temperature	
	• Levels of Consciousness	
	f) Site of Pain	
	g) Onset of pain (Severe, Sudden , Slow, Steady)	
	h) Provoking factors (exertion, position, sports , work activities, cold weather, morning and evening time)	

	i)	Character of pain
	j)	Associated Symptoms (Low range of motion, inability to do daily work).
	k)	Time Course of pain (Intermittent, Continuous)
	p)	Exacerbating /Relieving Symptoms
	q)	Severity Rate the pain from 1-10 for 1 being the slight pain and 10 being the worst pain
	Possible nursing diagnosis:	
	Advices and Referral details:	

Thus, Table 3.4, summarises the various points to illict data about joint pain and hence, arrive at a particular nursing diagnosis.

3.2.4 Back Pain

Back pain is the result of heavy work,injury, exposure to the cold or old age.



Fig. 3.5 : Back pain

Assessment to identify Back Pain :

- Collect data regarding the location, severity, intensity of pain. Find out if the patient had recently had any injury or received trauma which may have caused the pain. Collect data about patient's physical activity, involvement in sports etc.
- A full physical examination is done to inspect gait, posture and range of motion testing. If the pain increases by the exertion or was related to sports or other such activities. Also collect history related to family and work history.
- Look at the features of pain which point to its causes:
  - Pain in the lower abdomen referred to back may be associated with menstruation or pregnancy.
  - Pain may be referred to back in case of kidney problems. Since kidney is located in the back , pain may originate in the back and radiate to the abdomen as colicky and intermittent pain .
  - Back pain with pyrexia, malaise, haematuria, constant urge to urinate, pelvic

discomfort and passing cloudy or false smelling urine is associated with either cystitis or pyelonephritis. Many a times the kidney stones also lead to pain which is referred to back.

- Back-related lower extremity symptoms and spasm in radicular pattern, is related to sciatica.

Be alert for the RED FLAGS of Back Pain which raise suspicion about a serious pathology associated with the pain i.e. a high fever of 38°C (100.4°F) or above, unexplained weight loss, swelling of the back, constant back pain that does not ease after lying down, pain in chest or high up in your back, pain goes to your legs and below the knees, pain caused by a recent trauma or injury to your back loss of bladder control, inability to pass urine, loss of bowel control, numbness around your genitals, buttocks or back passage, pain that is worse at night.

Refer Table 3.5 for the format for assessing the Back Pain.

Table 3.5: Format for Assessment of Back Pain

Name of the Patient ..... **Age ..... Gender..... Filled by ..... Date .....**		
	Criteria	**Findings**
History	a) Medical Disease related to Heart, Lungs, Abdomen, Diabetes or Chronic disease	
	b) Surgical Disease or Trauma or Any surgery	
	c) Dietary History	
	d) History of Job /Sports	
	e) General examination	
Physical Assessment	• Pulse	
	• BP	
	• Respiration	
	• Temperature	
	• Levels of Consciousness	
	f) Site of Pain	
	g) Onset of pain (Severe, Sudden, Slow, Steady)	
	h) Provoking factors (exertion, position, sports , work activities, cold weather, morning and evening time)	
	i) Character of pain	
	j) Associated Symptoms.	
	k) Exacerbating /Relieving Symptoms	
	s) Severity Rate the pain from 1-10 for 1 being the slight pain and 10 being the worst pain	
	Possible nursing diagnosis:	
	Advices and Referral details:	

Thus, Table 3.5 , summarises the various points to illict data about joint pain and hence, arrive at a particular nursing diagnosis.

3.2.5 Other Aches and Pain

Let us now go through and learn about other important aches and pain as given below:

1) **Toothache**

It is a common problem in the community and is most probably due to tooth decay.

- Take history from the patient and see the presenting symptoms.
- The common complaint is pain in teeth or jaw which may be constant, throbbing or intermitted, worsens by cold or hot food or drink.
- Examine for swelling of the face or gums and cavity or any suppuration (pus formation). For further details refer theory Course 2, Block 2, Unit 6.

2) **Earache**

It is the pain in the ear and causes are infection, excessive ear wax, and objects that may lodge into or injure the external ear canal is of help. Treatment varies according to cause and site of earache.

- Take history from the patient including onset (gradual or sudden), progression, duration , anyother symptoms like dizziness , fever (which points towards infection), activity done which may point towards the entry of foreign body in the ear.
- See the presenting symptoms like discharge, redness, fever, any foreign body present or not.

3) **Headache**

Headache is a dull throbbing constant pain or localised pain in a small area of head or the entire head. It is a common symptom of many illnesses e.g. tension, eyestrain, high blood pressure, sinusitis, migraine, meningitis, brain tumor, fatigue, blocked sinuses and allergies, alcohol overuse

- Take history.
- Look for the presence of rash in the body, ear discharge, sore throat , enlarged tonsils, neck stiffness, running nose, sore eyes, increased temperature.

3.3 PROVIDING PRIMARY CARE AND REFERRAL

Your role as mid level health care provider is important to provide primary care. The primary care in various pains is elaborated as given below:

3.3.1 Abdominal Pain

The care will be based on the type of problem identified.

- In case of peritonitis, appendicitis is suspected hence, it is important to refer immediately especially in persisting intestinal colic and abdominal distention. If the patient is in shock, establish IV line and refer to the higher facility.
- If you suspect tumor and infection, refer the case. Treatment may be given as per standing orders. Advice the person to take soft diet, bland with curd.
- In case of gastritis advise to drink plenty of undiluted lassi /lemon water with salt and sugar. Administer magnesium hydroxide tablet.

- If pain is due to worms, deworm with course of tablet mebendiazole (Mebex) or peprazine citrate. Stool testing if available at sub-centre level, maybe done especially for the young children. For basic tests details refer BNS-043, Block 1, Unit 2.
- In any case, Refer if the symptoms get worse or if there is excess vomiting.
- Treat old known illness as per treatment protocol detailed for the patient.

3.3.2 Chest Pain

- If you suspect myocardial infarction (MI), refer immediately to higher health facility under supervision. In case of angina, ask the patient to rest and take prescribed medications. But if it does not subside provide NTG as per prescription in a known case. For the new case, 3 doses of NTG can be given but immediate referral is needed if the angina attack doesnot subside.
- In case of aneurysm, pneumothorax and pulmonary embolus, immediate referral is essential.
- For already known hiatal hernia, ask patient to maintain propped up positioning, antacids and frequent small meals. If this does not help, surgery may be required for which referral is to be done.

3.3.3 Joint Pain

- For patient suffering fromarthritis, provide hot fomentation.Advise range of motion exercise. Also advise to take the pain medications as prescribed. Tell patient to rest and avoid strain.
- If the patient has strain or sprain, advise to keep the inflamed part high, wrap with elastic bandage as it helps reduce swelling and it gives firm support. Tell patient to keep the joint motionless. Advise the use of crutches to give a sprained foot as much rest as possible. Serious sprains need atleast 3 or 4 weeks to heal. Advise that during the first day or two, put ice wrapped in cloth or plastic, or cold, wet cloths over the swollen joint for 20 to 30 minutes once every hour. This helps reduce swelling and pain. After 24 to 48 hours (when the swelling is no longer getting worse), soak the sprain in hot water.
- For dislocations and fractures, referral is important. However before referral , immobilise the part affected. For conditions where in the joint pain is due to the other suspected conditions, referral is done.

3.3.4 Back Pain

- Examine for the symptoms of swelling.
- Adviseproperposture and giveanalgesics/painrelief ointmentsas perstandingorders.
- Refer patient for treatment of associated medical conditions.
- If the patient is already a known case of back pain due to back problems, educate to use hot fomentation, positioning and prescribed medications. If no relief, refer to the higher facility.

3.3.5 Other Pains

a) **Toothache**

- Clean the hole in the tooth wall and remove food particles.
- Advise frequent mouth was with warm saline water.

- Give analgesic like aspirin and antibiotics only as per standing orders depending on the extent of infection.
- Refer if there is tooth decay or abscess or cavity.

b) **Earache**

- Treat by applying sulphacetamide - ear drops as per standing orders. Give acetyl salicyclic tablets as per standing orders.
- If pain persists after 3 days refer.
- Apply warm and cold compress for reducing pain.
- Tell the patient to take care when blowing and avoid sniffing the nose.
- For hardened wax – put soda glycerine or soliwax one drop three times a day to soften the ear wax.
- Put 3–5 drops of baby oil or clean coconut oil in the ear daily for 3 days or 2–3 drops of boroglycerine once or twice a day. Then flush with warm saline water using sterile syringe.

c) **Headache**

- A child with headache may not complain so but there may be other signs like fever, rash, sore throat , ear discharge. The child is treated with acetyl salycilic acid tablet and in cases of head ache with other signs and symptoms one needs to treat the cause as per standing instructions given .
- For an adult enquire about the duration, frequency, and if it is associated with any activity, look for signs of anaemia, neck stiffness, dizziness, blurred vision, any other symptoms of a serious illness.
- If headache is not associated with other symptoms treat as per standing orders.

3.4 LET US SUM UP

In this practical, the management of common aches and pains at sub-centre level has been highlighted. It is important to have the knowledge about various common aches and pains, how to suspect them and provide primary care. The practical highlights how to go about the treatment of aches which the patients in community present with at the sub-centre level, how to identify emergencies which require urgent referral. Hence, this will help to improve your skill in treating patients at sub-centre level.

3.5 ACTIVITY

Activity 1: Select a case of abdominal pain coming to your sub-centre where you have been posted. Perform initial assessment and identify the possible problem.

Activity 2: Provide care to the client arriving with the episode of sudden chest pain at the sub-centre and complete records.

Activity 3: Provide primary care to a patient with known history of arthritis in the community.

Activity 4: Educate the patient with low back pain and maintain record.

Activity 5: Provide care to a patient with toothache and earache.

UNIT 4 FIRST AID TECHNIQUES AND STABILISATION CARE IN COMMON EMERGENCIES-1

Structure

4.0 Introduction

4.1 Objectives

4.2 Provide Basic Resuscitation and First Aid

4.3 First Aid Management in Specific Emergency Conditions

- 4.3.1 Fever
- 4.3.2 Hyperglycemic Shock (Diabetic Coma) and Hypoglycemic Shock (Insulin Coma)
- 4.3.3 Fractures
- 4.3.4 Wounds
- 4.3.5 Minor Injuries
- 4.3.6 Haemorrhage
- 4.3.7 Shock
- 4.3.8 Drowning
- 4.3.9 Surgical Trauma

4.4 Let Us Sum Up

4.5 Activity

4.6 Key Words

4.7 References

4.0 INTRODUCTION

Vigilance in providing the basic life saving measures for acute emergencies is an essential responsibility of community health nurse practioner in order to reduce the magnitude of deaths particularly in the areas where these conditions prevail and where unfortunately the appropriate medical facilities are not available. In Practical 3 you have learnt skills for providing management of common ache and pains. In this practical we will learn the skills required to provide the First Aid measures to patients in common emergency conditions e.g. High fever, hyperglycemic shock (diabetic coma), hypoglycemic shock (insulin coma), fracture, wound, minor injuries, haemorrhage, shock, drowning and surgical trauma.

4.1 OBJECTIVES

After completing this unit, you should be able to:

- describe the First Aid measures for stabilising the conditions of the patients with high fever, hyperglycemic shock (diabetic coma), hypoglycemic shock (insulin coma), fracture, wound, minor injuries, haemorrhage, shock, drowning and surgical trauma;
- demonstrate the First Aid measures on patient with conditions mentioned bove; and
- manage these patients.

4.2 PROVIDE BASIC RESUSCITATION AND FIRSTAID

First aid, as is known all over the world, has been practiced ever since the inception of the humanity. Basic resuscitation and First aid is the provision of life saving initial care for the acute, emergency illnesses or injuries. It can be performed either by a non-expert but trained personnel or by professionally trained personnel such as community health worker to a sick or injured person until definitive medical treatment can be accessed. Certain self-limiting illnesses /minor injuries such as high fever, hyperglycemic shock and hypoglycemic shock, fractures, wounds, minor injuries, haemorrhage, shock, drowning and surgical traumas etc. may not require further medical care, these are rather treated at home or at a sub-centre by trained personnel unless complicated. It generally consists of a series of simple and in some cases, potentially life-saving techniques that an individual can be trained to perform with minimal equipment.

The key aims of first aid are:

i) Preserve life of the victim.

ii) Prevent further harm i.e. applying first aid techniques to prevent worsening of the condition, such as applying pressure to stop a bleed becoming dangerous.

iii) Promote recovery from the illness or injurysuch as in the case of applying a plaster to a small wound.

Certain skills are considered essential to the provision of first aid and are taught universally. Particularly the "ABCs" of first aid, which focuses on critical life-saving intervention, must be rendered before treatment of less serious injuries/ conditions. ABC stands for Airway, Breathing, and Circulation. Attention must first be brought to the airway to ensure it is clear. Obstruction (choking) is a life-threatening emergency. Following evaluation of the airway, the first aider would determine adequacy of breathing and provide rescue breathing if necessary. If there is no breathing, or the patient is not breathing normally, the first aider would undertake what is probably the most recognised first aid procedure- Cardiopulmonary resuscitation (CPR), which involves artificial breathing or mouth to mouth breathing to the victim and manually providing chest compressions to the heart to promote blood flow around the body followed by assessment of circulation by checking pulse.

As a mid level health care provider your duty is to perform these life saving measures to save and sustain life of the victim till the patient is transferred to the hospital.

4.3 FIRSTAID MANAGEMENT IN SPECIFIC EMERGENCY CONDITIONS

During emergency situations, as health care worker your essential duty is to identify quickly the sick, wounded or injured victims in order to prioritise their emergency care. For that you need to acquire a sound knowledge and competent skill for assessing and managing the patients in various critical conditions through providing basic life support and first aid measures during various emergency illnesses or injuries as discussed below.

4.3.1 Fever

Fever also known as pyrexia is high temperature when a human's body temperature goes above 37°C (100°F). A fever is not by itself an illness. It is usually a symptom of an underlying condition, most often an infection. (Fig. 4.1)

Body temperature, which usually varies throughout the day from the normal temperature of 98.6°F, is controlled by a part of the brain called the hypothalamus.



Fig.4.1 : Degrees of temperature

Assessment of patient with fever:

When a patient comes with fever, assess the patient for signs and symptoms as follows:

1) Enquire how the fever started and how it progressed.
2) Look for and ask about above vital signs and symptoms as well as other accompanying signs and symptoms such as: nausea, vomiting, diarrhoea, cough, fast breathing, increased pulse rate, running nose, neck stiffness, difficulty, urgency and burning in urination, weight loss, jaundice or drowsiness.
3) Look for a skin rash and observe and enquire about signs and symptoms associated with various diseases or infections such as: respiratory infection, meningitis, chickenpox, measles, mumps, malaria, typhoid, pulmonary tuberculosis etc.
4) Ask if there is pain in any specific part of the body like pain in chest, back or abdomen, joint pain, sore throat or earache.
5) Ask if the patient has recently travelled to areas with endemic infections or have other infection risks. Amalaria infection, for example, may be having a fever that typically recurs.
6) Ask whether patient is taking any medications, if any then since how long and what for.
7) Assist physician in performing thorough physical examination of patient to find out the possible causative factors and their associated signs and symptoms.
8) Take thorough health history to enquire about whether patient has previous H/O chronic illness or chronic infection.
9) Sometimes the patient may have a "fever of unknown origin". In such cases, the cause could be an unusual such as a chronic infection, an autoimmune disorder or cancer.
10) Take temperature of the patient and if having fever, treat the patient accordingly.

Don't miss the classical picture of malaria– fever with rigors, chills and bodyaches, and coming down with sweating.

First aid Treatment:

After doing assessment of the patient, if you notice some of these symptoms (as mentioned above) record the temperature by using a thermometer. If the temperature is above 37°C, it is a fever, proceed as follows:

1) Make the patient comfortable and keep him/ her cool, ideally in bed with a sheet or light blanket (in case of chills).
2) Give the plenty of cool drinks to replace any fluid loss from sweating.
3) If the temperature is above 39°C, place the cold compresses (cool and moist cloths) on head, buttocks, back as well as in hands, axilla and groin to cover large superficial blood vessels which will lower the body temperature.
5) Change the compresses every few minutes as it becomes warm and continue applying compresses for 15 to 20 minutes.

Be careful while applying cold compress to children as they react very quickly to heat or cold, therefore monitor their temperature after every fifteen minutes in order to prevent them from hypothermia.

6) Teach a family member the procedure for application of cold compress.
7) Give prescribed 250 to 500 mg of syrup/ tablet paracetamol to the child/ adult after every 6 hourly if fever and body aches persist.
8) Give prescribed antibiotics such as syrupamoxicillin 250 mg to child and capsule 500 mg amoxicillin to adult every 8 hourly for 5 days.
9) Give prescribed non-steroidal anti-inflammatory drugs such as: ibugesic forte100 to 200 mg SOS in case of sore throat.
10) Check the TPR and level of response every 4 hourly until the patient feels better.
11) If the fever does not subside, advise the patient for blood tests to rule out the cause of fever such as upper respiratory infection, malaria, typhoid etc. under care of physician.

Remember: Fever is common in children.

a) If a young child's temperature goes above 39°C (102. 2°F) this can be dangerous and might trigger a seizure (fit).

b) If the fever persists and even if it is not high and no other specific signs or symptoms are present.

Then in both the cases (a and b) refer the patient to nearby hospital for further investigation and treatment.

4.3.2 Hyperglycemic Shock (Diabetic Coma) and Hypoglycemic Shock (Insulin Coma)

which blood glucose level increases to 300 mg/dl or above. It results due to incomplete metabolism of glucose owing to lack of circulating insulin.

Hypoglycemic shock also known as **Insulin coma** is a serious condition in which blood glucose level decreases to 50 mg/dl or below which may result from various causes.

Whenever a patient with hyperglycemic shock or hypoglycemic shock reports to you. Ask history of illness and assess the warning signs (given in Box 4.1) which will guide you in quickly identifying the condition and giving emergency treatment before referral.

When the patient is brought to the PHC, it is not confirmed whether the patient is suffering from hyperglycemic shock or hypoglycemic shock .Therefore as community health nurse practioner your first and foremost responsibility is to make the patient comfortable and obtain a comprehensive history of illness by asking, listening and critically observing and differentiating warning signs and symptoms (given in Box 4.1) which will help you in determining whether the patient is suffering fromhyperglycemic shock or hypoglycemic shock.

Assessment of patient with hyper/ hypoglycemic shock :

Assessment of the patient with hyper or hypoglycemic shock includes 2 steps:

Step 1:

A) **History taking for identifying the patient with hyperglycemic shock :**

History of illness is taken to find out whether the patient:

i) Is an undiagnosed case of diabetes mellitus

ii) Is a known case of diabetes mellitus but is not taking regular treatment or has left the treatment.

iii) Has previous H/O of:

a) Infection

b) Surgery

c) Trauma

d) Mental Stress

B) **History taking for identifying the patient with Hypoglycemic shock:**

The patient is asked whether he/she is a known case of diabetes mellitus and has H/O:

a) Delayed intake of meals

b) High dose of insulin

c) Delayed intake of meals after taking insulin dose

d) Excessive exercises

Step 2:

Assessing the patient for signs and symptoms of Hyper/ Hypoglycemic Shock

After gathering the information related to history of illness, the next step is to quickly examine the patient for the possible warning signs and symptoms (given in Box 4.1) and critically analyse them for determining the condition of the patient and for taking appropriate steps of management.

Box 4.1: Signs and symptoms of Hyper/ Hypoglycemic Shock

Hyperglycemic Shock (Diabetic coma)	Hypoglycemic Shock (Insulin coma)
• Dry and hot skin • Deep and sighing breathing • Unconsciousness, deep or stupor • May smell of acetone (mostly apple smell) • Sunken eyes • Blurred vision • Nausea and vomiting • Epigastric pain • Increased thirst • Dull headache • Increased pulse rate • Low BP • Serum glucose level is above than 300 mg/dl • Presence of sugar and acetone in urine	• Cold and clammy skin with sweating • Shallow and quiet breathing • Fainting-rarely unconsciousness • No smell of acetone • Dilated pupil • Tremors • Nervousness • Hunger • Fast and thready pulse • Dizziness • Convulsions • Slurred speech • Low BP • Serum glucose level is less than 50 mg/dl • Absence of sugar and acetone in urine

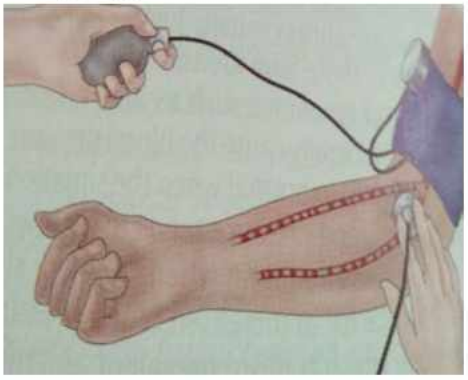
Management of patient with hyper/ hypo glycemic shock

After taking the history and doing assessment following activities shall be carried out quickly to stabilise the condition of the patient at PHC before referral:

The interventional activities (given in Box 4.2) will guide you in managing quickly the patient with Hyper or Hypoglycemic Shock.

Box 4.2: Activities for Stabilising Condition of Patient with Hyper/ Hypoglycemic Shock

Hyperglycemic Shock (Diabetic coma)	Hypoglycemic Shock (Insulin coma)
1. Make the patient to lie in comfortable position. 2. Keep the airway patent. 3. Check the vital signs every 15 minutes. 4. Draw quickly blood sample.	1. Make the patient lie to in comfortable position. 2. Keep the airway patent. 3. Check the vital signs every 15 minutes. 4. Draw blood sample.

Hyperglycemic Shock (Diabetic coma)	Hypoglycemic Shock (Insulin coma)
5. Get blood sample tested for glucose by glycometer (if available) or send it to laboratory for urgent testing. 6. After confirmation of blood glucose level if it is above 300 mg/dl. Start I/V line with fast infusion of 0.9% normal saline or 0.45% approximately 0.5 to 1 litre/hour (as per physician's order). 7. Give bolus dose of regular insulin (0.1 unit/kg/) stat followed by I/V infusion pump (0.1 unit/kg/hour) as per physician's order. 8. Maintain the rate of saline infusion and change it to dextrose 5% if blood sugar level falls to 250 mg/dl (as per physician's order) in order to avoid a too rapid drop in blood glucose level. 9. Maintain the rate of insulin infusion continuously until the subcutaneous administration of insulin can be resumed.	5. Get blood sample tested for sugar immediately by glycometer (if available) or send it to laboratory for urgent testing. 6. If patient is found hypoglycemic, (blood glucose level<50 mg/dl) Start I /V line with slow infusion of 25-50 ml of 50% dextrose. 7. If patient is conscious, give 2 to 3 spoons of sugar or honey or 4 to 6 ounces of fruit juice or 6 to 10 hard candies. 8. If patient is found unconscious, give an injection of epinephrine or glucagon 1mg subcutaneously after physician's order to raise the blood glucose level and wait for 20 minutes till patient regains consciousness. 9. On awakening give a carbohydrate snack to prevent recurrence of hypoglycemia.
 **Fig. 4.2 : Give bolus dose of regular insulin**	 **Fig. 4.4 : Check blood pressure regularly**
 **Fig. 4.3 : Maintain the rate of insulin infusion**	
10. Check the blood glucose every one hourly. 11. Monitor the vital signs every half hourly. 12. Check the patient's level of consciousness. 13. Assess the patient for the signs of recovery. 14. After patient is stabilised, refer the patient to district hospital for further investigation and treatment.	10. Check the blood glucose every one hourly. 11. Monitor the vital signs every half hourly. 12. Check the patient's level of consciousness. 13. Assess the patient for the signs of recovery. 14. After patient is stabilised, refer the patient to district hospital for further investigation and treatment.

4.3.3 Fractures

A fracture is the partial or complete break in the continuity of the bone with / without displacement of bone fragments which occurs when pressure is applied to bone. One out of five people has a fracture at some point of time in their lives, and the maximum of these fractures occur during childhood.

The commonest causes of fracture in a healthy person are direct and indirect violence

Types of fracture (Refer Course 2, Block 1, Unit 5):

The three major types of fracture are:

a) **Simple or Closed fracture**

It is that type of fracture in which the broken ends of the bone do not break the skin i.e. no wound is seen outside the skin.

b) **Compound or Open fracture**

In this type of fracture the broken ends of the bone are in contact with the skin i.e. Skin breaks causing open wound.

Assessment of patient with fracture

The assessment of a fracture is based on three points:

1) **History:** The patient will tell you that he has fallen or that he has been hit by something.
2) **Symptoms:** These include;
   a) Pain at or around the site of the fracture.
   b) Tenderness accompanied by pain on gentle pressure over the site of fracture. (DO NOT PRESS HARD)
   c) Loss of power function in the fractured limb.
3) **Signs:** These include:
   a) Deformity (abnormal twist of limb):

      The normal shape and alignment of the limb is changed (COMPARE WITH THE OTHER LIMB).Sometimes the muscles will pull up the lower free ends, causing apparent shortening of the limb.
   b) Swelling / bruising / bleeding at or around the site of fracture. This is caused by the overlapping of the broken ends and tearing of blood vessels.
   c) Difficulty or loss of movement of the part due to broken end of bone.
   d) The crackling sound of broken bones called crepitus may be felt.
   e) Sometimes unnatural movement at the spot of fracture may be felt.

- **To confirm diagnosis compare with the sound limb. Look for tear of clothing or skin at the site of fracture. Ask and listen very keenly to the patient as he/she may sometimes say that he/she had heard the crack of the bone.**
- **Never try first aid if the last two signs are present. Refer the patient immediately to district hospital for appropriate treatment.**

Major Effects of Fracture:

- Pain
- Damage to surrounding tissues and blood vessels.
- Bleeding & shock (fractures of large bones may result in considerable loss of blood, e.g. a fractured thigh results in the loss of 1 or 2 litres)

Management of patient with fracture

All fracture casesshould be given first aid treatment except when last two signsmentioned above are present in order to stabilise their condition and make them comfortable for shifting them to the hospital for further treatment.

The objectives of first aid with fracture are:

1) To prevent further damage
2) To reduce pain
3) To make the patient comfortable, and
4) To get medical aid as soon as possible.

- **The first three objectives (given above) are achieved by immobilisation.**
- **There are some rules (given in Box 4.3) which you should follow while dealing with fracture.**

Box 4.3: Rules for dealing with fracture

DO NOT
• Massage the affected area (Fig. 4.5)
• Apply any ointments like iodex
• Straighten the broken bone
• Move the injured part or limb
• Move joints above and below the fracture
• Attempt to set the fracture
• Try to push a protruding bone back into place
• Give oral liquids or food



As the fractures are usually accompanied by major accidents and when patient in such condition reports to PHC.Your first responsibility is quickly to find other injuries and decide which is more important. Heavy bleeding and severely wounded parts are more urgent and are treated first. There may be more than one fracture in the same patient or even in the same limb. Stabilise first the patient's condition by taking care of airway, breathing and circulation. If there is no immediate danger to life then proceed with first aid treatment according to type and location of fracture as follows:

1) **Closed fracture**

   a) Place the patient in a comfortable position with the injured part well supported.

   b) Clothing should not be removed. If it has to be removed, do it gently or tear it along the line of stitching.

   c) Immobilise the injured part with a splint or bandage. Remember that the joints below and above the fracture must be immobilised.

   d) Treat for shock but do not give any drink as the patient may have to have an anaesthetic on arrival at the hospital for setting the fracture.

2) **Open fracture**

   a) Follow the same procedure as mentioned in (a) and (e) steps for closed fracture.

   b) Cut or remove away the clothing over the wound and cover it with a sterile dressing.

   c) Stop any bleeding by applying a pad and bandage. If the bleeding is arterial, press the artery at the pressure point with the fingers or apply a tourniquet.

   d) Take special measures for treating shock.

Box 4.4 : Instructions for providing first aid to fractured victim

For open fractures:
1. Control bleeding before treatment
2. Rinse and dress the wound
For both open and closed fractures
• Check the breathing
• Calm the person
• Examine for other injuries
• Immobilise the broken wound
• Apply ice to reduce pain / swelling
• Consult a doctor

Application of Splint:

What is splint and how can it be improvised?

A splint is a rigid appliance, usually made of wood or metal, which is tied to a fractured limb to support it and prevent movement from taking place at the site of fracture. Some first aid kits are supplied with wooden splints or metal splints made of aluminiumor stout wire. The latter could be cut to the required size and moulded to the required shape.

However, in emergency splints can be improvised by using any article which is rigid enough and of sufficient length for the purpose for which it is required. Rolled newspapers, magazines, piece of wood, card board etc. have been used for splinting in case of emergency. The body itself can be used for splinting purposes, e.g. a fractured arm can be strapped to the side of the chest to immobilise it or a fractured leg can be tied to the other leg.

Why to use the splint?

The injured or fractured part or limbis immobilised immediately with a splint or bandage so that no movement of the part or limb is possible. This stops further injury and helps to stop the bleeding and the danger of broken ends of bone, damaging the arteries, nerves and muscles is prevented.

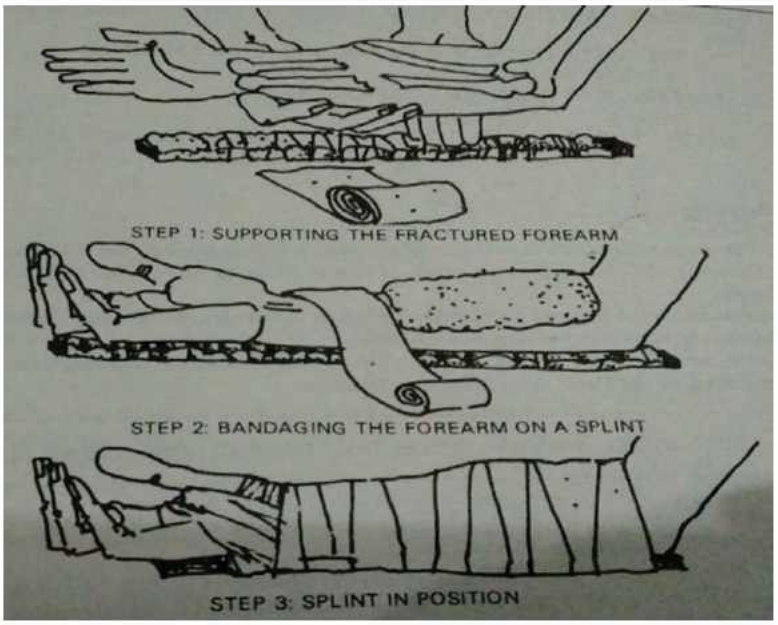


Fig. 4.6 : Splinting a fractured forearm

- **What points to keep in mind while using a splint?**

If a splint is not used properly, it may cause damage. Therefore, remember the following points when using a splint. (Fig. 4.6)

a) Make sure that the splint is well padded. This is particularly important when splint are improvised from pieces of wood which are uneven.

b) Make sure that the splint is sufficiently long to immobilise the joint above and below the fracture.

c) Make sure that he bandages used to secure the splint have the knots tied on the splint and not on the flesh.

Application of bandage: (Fig. 4.7)

A bandage is made up of gauze which is used in fracture for the following purposes:

a) To keep the dressing of wound in open fracture in place.

b) To immobilise the fractured part or limb.

c) To reduce the swelling

d) To retain a splint in position

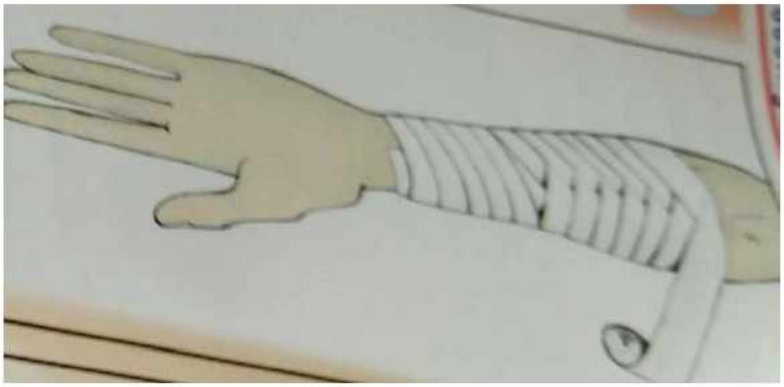


Fig. 4.7 : Application of bandage

Bandages can be improvised by using any soft clean cotton cloth such as handkerchief, a towel or a piece of sheet.

Points to remember while bandaging:

In order to facilitate the safe bandaging follow the instructions given as below:

a) Use bandaging fairly firm so that there is no movement of fractured ends but not too tight which can stop the circulation of the blood to the area. (Fig 4.8)

b) Always place padding material between the ankles and knees and other hollow areas before bandaging these, to make them comfortable and steady.

c) Always tie knots on the smooth side.



Fig. 4.8 : Avoid tight bandaging over affected area

Specific fractures and their first aid treatment:

1) **Fracture of the base of the skull**

This is the fracture of the bones forming the base of the skull. As these bones are not seen on outside of the body, obviously they cannot be fractured by a direct blow and such a fracture always results from indirect violence.

- **Signs and symptoms**
  - a) Bleeding from the ear or nose
  - b) Headache
- **Treatment**
  - a) Apply a clean sterile dressing to the nose or ear from where the bleeding occurs.
  - b) Turn gently the patient's head to the side from where the bleeding occurs.

c) Treat for shock.

d) Transfer to hospital as soon as possible.

2) **Fracture of the collar bone (Clavicle)**

This type of fracture usually occurs from a fall on the outstretched hand.

Signs

In addition to the usual signs of fracture the patient:

a) Supports the arm on the injured side at the elbow with the other hand.

b) Holds his head tilted to the injured side.

c) Has crepitus which can be felt under the skin.

Treatment

a) Place a pad in the armpit on the injured side.

b) Pass a narrow folded bandage around each armpit to make a ring.

c) Brace back the shoulders by a bandage on the back of the chest.

d) Place the arm in a sling.

e) Check the radial pulse.

f) Refer to the primary health centre

3) **Fractured pelvis**

Signs

a) Extensive bruising at the site of impact.

b) Pain on pressing the pelvis

c) Inability to stand or move legs freely without pain

d) Watch for blood in urine (injury to bladder)

Treatment

a) Place the patient in the most comfortable position, preferably with the legs and thighs outstretched.

b) Tie the legs together.

c) Fix the pelvis with a broad fold bandage.

d) Treat for shock, if present.

e) Transfer to the nearest Primary Health Centre.

4) **Fractured spine**

Signs and symptoms

a) Pain in the back at the site of fracture.

b) If the spinal cord is injured, the patient will complain of numbness, loss of sensation and inability to move the limb.

Treatment

a) Lay the patient down flat on his back on a hard board.

b) Bandage round the feet and ankles.

c) Place pads under the neck, lumbar spine and behind the ankles.

d) Strap the patient to the board to avoid rolling during transport.

e) Transfer to the nearest Primary Health Centre as soon as possible preferably with the face down on a hard board with the head and shoulders supported by a pillow or folded blankets.

Box 4.5: Principles to be followed for shifting the patient with fractured spine (Fig. 4.9)

Remember:

A simple fractured spine may easily be turned into a complicated fracture involving the spinal cord unless the patient is carefully handled. The principles to be followed for shifting the patient with fractured spine are:

- The spine must not bend when moving or lifting the patient.
- Preferably do not turn the patient but if you have to, turn the patient in one piece.
- The stretcher on which the patient is being transported must be rigid so that it will not sag on lifting. Use a board, door, shutter etc for this purpose.
- Always transport the patient lying flat.

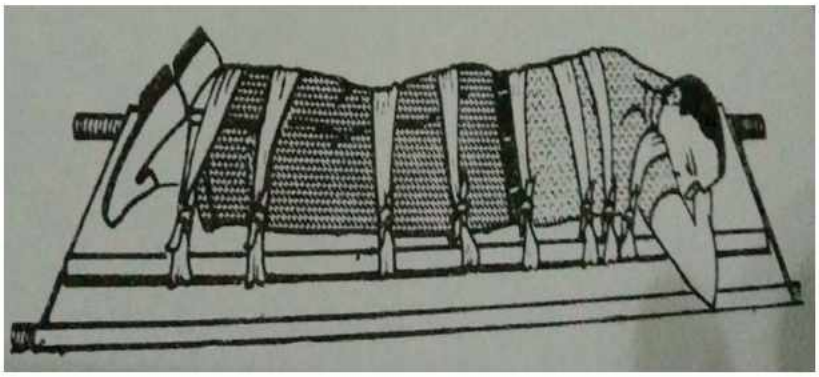


Fig. 4.9: Transport the fractured sine patient with face down

Teaching the community about first aid measures for common fractures:

As primary health care giver your task is to teach people in rural areas what immediate measures are to be taken if any person is met with a fracture athome, on the road or in the field and howto identify and manage the common fractures such as leg, arm and hand fractures.

What is a dislocation?

Adislocationiswhen the bonehascomeoutfromthesocket. This also results in acute pain, swelling, aninabilityto carry anyweightandan inabilityto move the injured limb. The first aid administered in case of a dislocation is also the same as in fracture. (Fig. 4.10)

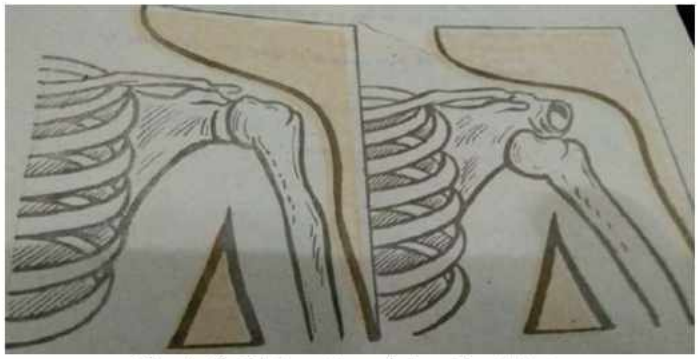


Fig. 4.10: Dislocation of shoulder joint

Remember:

The word 'RICE' as a first aid treatment for all fractures, sprains and dislocations. **RICE** stands for **Rest, Ice, Compression** and **Elevation.**

- **REST:** Give plenty of rest to the immobilised limb. Move it as little as possible so that there is no strain.
- **ICE:** Apply ice to the injured area. No heat treatment or massage should be given. Use an ice pack or wrap up some ice cubes in a damp towel and apply it to the injured area.
- **COMPRESSION:** Wrap up the injured area with a crepe bandage if possible, or use any clean, fresh cloth available. Wrap it as tight as is comfortable..
- **ELEVATION:** The injured limb should preferably be raised above the level of the heart. This could be done with the help of a pillow while sleeping.

Steps of First aid measures for:

a) **Leg Fracture: (Fig. 4.11)**

Teach the following steps to the parents/ family for taking care of victim with leg fracture:

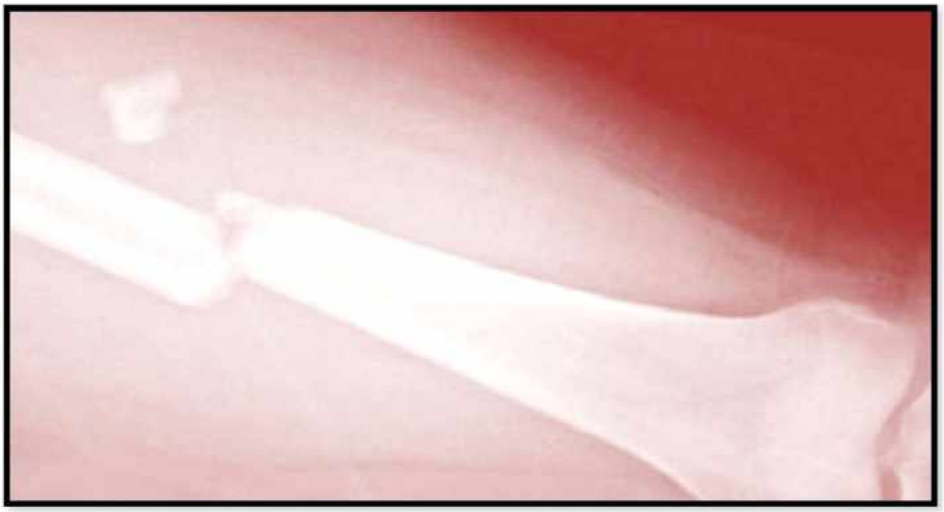


Fig 4.11 : Leg fracture

1) If your child/ family member has fractured his /her leg, carefully straighten it out.
2) Call for an ambulance.
3) Check for Bleeding:
   a) If your child/ family member is bleeding, you should treat the bleeding first.
   b) Stop the bleeding by first cleaning it carefully with antiseptic / saline / clean water.
   c) Apply a clean dressing gently over the wound.
   d) Do not bandage tightly over the injury site.
4) In the meantime, secure the leg so that it doesn't move at all.
5) Use any handy materialas splints to immobilise the limb. You could use a magazine or newspaper for support.
6) Apply two splints, one on the inner side from the foot to the inner thigh and the other on the outside, from the foot to the armpit. Secure the splints well.

7) You could even tie both legs together for added support.

8) Shift the patient immediately to PHC for further treatment.

b) **Hand / Fore arm Fracture: (Fig. 4.12)**

- Teach the following steps to the parents/ family for taking care of victim with fracture of hand or forearm :



Fig. 4.12 : Alignment for Immobilisation of fractured arm

1) If your child/ family member has fractured his /her hand or forearm, carefully straighten it out.

2) Call for an ambulance.

3) Check first for Bleeding and follow the steps from (a) to (d) as given for the first aid treatment of leg fracture.

4) Move the hand gently to a 90-degree angle and keep close to the chest.

5) Immobilise the hand in the position given in Fig. 4.12.

6) Make a sling with the help of some cloth, a rope or shoe laces.

7) Shift the patient immediately to PHC for further treatment.

4.3.4 Wounds

The skin is normally intact, a break or the tear in the skin may occur following an accident which may result in a wound. The deeper the wound the more likely it is to get infected. The appearance of the wound and its likelihood of the infection depend upon the cause of the wound. The depth of the wound is more important than its area, small deep wounds caused by sharp instruments likeknives, bullets, glasses and stones etc. are more dangerous.

Causes of wounds

A wound may be caused by:

a) A cut with sharp instruments like knives, bullets, glasses, stones etc.

b) A blow with a blunt instrument e.g. stick or hockey

c) A broken bone whose sharp end pierces the skin from inside, usually when an open fracture occurs. The degree of injury ranges from abrasion to a deep wound.

Assessment of patient with wound

When an injured person is brought to PHC, he/she may have more than one injury.As MLHP, your duty is immediately to assess and stabilise the condition of the patient as well as examine the condition and type of the wound.The assessment includes following steps:

1) Examining the condition of the patient for :
   - Airway
   - Breathing
   - Circulation
2) Asking Historyofcause for injury/wound
3) Identifying the type of wound, and
4) Checking the condition of wound for two important signs:
   - Bleeding
   - Infection

Management of patient with wound:

The aims of the first aid management are to:

a) To stop the bleeding from the wound.

b) To prevent wound from infection.

In order to achieve these aims, it is very essential for you to proceed with the following guidelines, while taking care of wound/wounds at your health centre.

Guidelines for taking care of wound

1) **Wash your hands very thoroughly with soap and water**

This helps to avoid infection. Also put on disposable protective gloves if they are available.

2) **Stop the bleeding**

Minor cuts and scrapes usually stop bleeding on their own. If not, apply gentle pressure with a sterile bandage or clean cloth and elevate the wound.

3) **Clean the wound**

Use clear water to rinse the wound. Also clean around the wound with soap and a washcloth. Keep soap out of the wound, as it can cause irritation. If dirt or debris remains in the wound after washing, use forceps cleaned with alcohol to remove the particles. Thorough cleaning reduces the risk of infection. Use antiseptic such as betadine or hydrogen peroxide if the wound is infected.

4) **Cover the wound**

Bandages can help to keep the wound clean and harmful bacteria out. If the injury is just a minor scrape, or scratch, leave it uncovered.

5) **Change the dressing**

Do this atleast once a day or whenever the bandage becomes wet or dirty. If the injured person is allergic to the adhesive in tapes and bandages, switch to adhesive-

free dressings or sterile gauze held in place with paper tape, rolled gauze or a loosely applied elastic bandage. After the wound has healed enough to make infection unlikely, you can leave it uncovered, as exposure to the air will speed healing.

6) **Get stitches for deep wounds**

Adeep gaped or jagged wound with exposed fat or muscle will need stitches.Adhesive strips or butterfly tape may hold a minor cut together, but if you cannot easily close the wound, consult the doctor as soon as possible. Proper closure within a few hours minimises scarring and reduces the risk of infection. Refer in case you are not able to manage ar the earliest.

7) **Watch for signs of infection**

Consult the doctor if the wound is not healing or you notice any redness, increasing pain, drainage, warmth or swelling.

8) **Give tetanus toxoid injection**

If the injured person hasn't had a tetanus toxoid injection in the past five years and the wound is deep or dirty, he or she may need a booster dose, as soon as possible.

Types of wounds and their first aid treatment:

1) **Abrasion**

An abrasion or graze is a scraping away of the superficial layer of the skin. (Fig. 4.13)



Fig. 4.13 : Discolouration is the hallmark of a bruise or abrasion

Signs

i) Superficial scraping of the skin

ii) Slight bleeding

First aid Treatment

a) Wash the site with pre-boiled water or normal saline.

b) Remove any grit or other foreign matter.

c) Apply antiseptic lotion such as betadine.

d) Apply clean gauze covered with cotton wool padding and bandage.

Follow-up

Tell the patient to come for follow up as per following situations:

1) If the abrasion is clean:
   a) See the patient in 5 days to remove the dressing.
   b) If the wound is dry, leave it open.
2) If the abrasion is dirty and if he gets fever:
   a) Change dressing every 2 days until dry and clean.
   b) Clean it with antiseptic solution such as betadine.
   c) Apply clean gauze and antiseptic ointment such as soframicine.
   d) Give prescribed cap amoxicillin 500 mg 8 hourly for five days.
   e) Give a dose of tetanus toxide if patient has not received in the past five years.

2) **Incised wound (Fig. 4.14)**

An incised wound is caused by a sharp cutting instrument. Its edges are straight and it is usually accompanied by profuse bleeding, which helps to wash away any germs that might have entered the wound. A deep incised wound may cut through tendons and arteries.



Fig. 4.14 : Incised wound

3) **Lacerated wound (Fig. 4.15)**

A lacerated wound is caused by a sharp irregular instrument. Its edges are ragged and bruising surrounds the wound. Usually lacerated wounds do not bleed much and any dirt which may have entered the wound is not thoroughly flushed out.



4) **Punctured wound (Fig. 4.16)**

A punctured wound is caused by a stab from a knife, needle, nail, bullet etc and is often small and deep. There is usually little bleeding so that the germs and dirt introduced to the bottom of the wound by the stabbing instrument are not washed out. These wounds are likely to become easily infected and the risk of tetanus is high. Also, because of the depth of these wounds, injury to important structures may be caused.



Fig. 4.16 : Punctured wound

Signs

a) The appearance of the wound edges depends on the cause of wound.

b) Bleeding is present to a varying extent.

c) Signs of shock (low BP, tachycardia, feeble pulse, fast breathing, cold and clammy skin, altered sensorium) may be present depending on the severity of the wound and the amount of bleeding.

First aid Treatment

The aims of the first aider when dealing with wounds are:

a) To stop bleeding

b) To prevent infection.

Start the first aid treatment as follows:

1) Handle the injured part as gently and as little as possible.

2) Sit or lay the patient down and raise the wounded limb.

3) Stop the bleeding.

4) Do not disturb the blood clots.

5) Do not remove any glass unless it is easily wiped away as its removal may open up a large blood vessel.

6) Treat for the shock (refer steps of shock management)

7) If the wound is large and will require suturing, apply a dry dressing and transfer the patients to the primary Health Centre, after applying a firm bandage to control the bleeding. Put the arm in a sling or immobilise the leg.

8) If the wound is small and you can deal with it at the sub-centre, proceed as follows:

   a) Sit or lay the patient down.

   b) Handle the injured part gently.

c) Clean the wound with pre-boiled water. Always clean away from, not towards the wound and remove foreign matter.

d) Stop the bleeding using direct pressure.

e) If the wound is small, apply antiseptic ointment/ lotion and cover with a clean dry dressing (Fig. 4.17)



Fig. 4.17 : Applying antiseptic ointment with an applicator

f) If the edges of the wound need approximation, use adhesive plaster to bring them together.

g) Apply a dry sterile dressing and bandage firmly. (Fig. 4.18)

h) Put the arm in the sling.

i) Treat for shock.

j) Give the patient a non-steriod anti-inflammatory medicine such as: ibuprofen to take home.

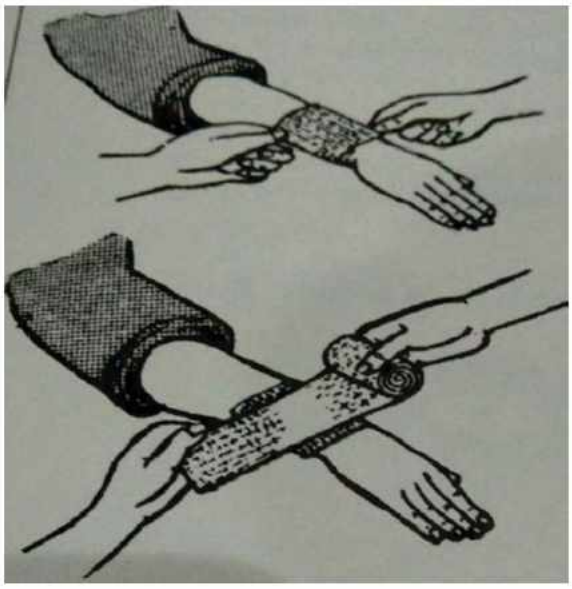


Fig. 4.18 : Dressing and bandaging a small wound

Note: If the wound is on scalp shave the hair around the wound before starting the treatment.

Follow- up

1) Tell the patient to come and see you after seven days.
2) If he develops fever or the dressing comes off, he should come to the sub-centre for a few dressings.
3) If the dressing stays on, he should have the dressing opened on the 7th day and the adhesive plaster removed. Apply a fresh sterile dressing for another three days. If the wound is healed, leave it open.
4) If fever develops, open the dressing, if dry:
   i) Apply a sterile dressing
   ii) Give paracetamol tablets.
5) If infected and moist, apply a clean dressing with antiseptic
   i) Give paracetamol tablets
   ii) Give prescribed amoxicillin capsules.
   iii) Change dressing every other day until clean.

All punctured wounds of the chest and abdomen after first aid should be referred to the doctor.

4.3.5 Minor Injuries

The children and youngadults are more prone to minor injuries which can occur suddenly and can prove very serious, if not treated immediately. The first aid treatments for various common minor injuries are discussed below:

Sprains and Strains

A sprain is an injury to a ligament. It occurs when excessive or abnormal forces are applied around a joint.

Remember:

The ankle and knee joints are commonly affected by sprain.

Signs / symptoms

- Tenderness,
- Swelling,
- Bruising,
- Loss of function, and
- Joint instability (if it is a severe sprain).

Box 4.6 : Grades of sprain

The sprain can be simply graded into:

a) Grade 1: mild stretching of the ligament; no joint instability – (Mild Sprain)
b) Grade 2: partial ligament rupture; no joint instability – (Moderate Sprain)
c) Grade 3: complete ligament rupture; joint instability. – (Severe Sprain)

A strain occurs when a muscle is stretched or torn. It happens if a muscle is over-stretched or has had forced strong contraction.

Box 4.7 : Degrees of strain

a) A first-degree strain is when just a few muscle fibres are injured. There is tenderness and pain but normal muscle strength.

b) A second-degree strain is when a greater number of muscle fibres are injured with more severe pain and tenderness and possible bruising. Mild swelling and loss of muscle strength will also be present.

c) A third-degree strain is when the muscle tears all the way through, leading to total loss of muscle function.

How can you tell if it is a fracture or a sprain/strain and what to do?

- **In sprain or strain** the pain is less intensive than in a fracture and after a sprain, flexibility exercises followed by active mobilisation can be started as soon as pain allows (usually after few days or within a week).
- **In fracture** the patient will not allow to move the effected part at all. The movement is restricted by immobilising the part or limb usually for weeks.

Therefore never make the mistake in underestimating your child's pain and administer the same kind of first aid in both the cases.

Assessment of injury

- Ask about the mechanism of injury, degree of pain and any self-treatment measures already applied.
- Assess the severity of the injury by examining for deformity, swelling, bruising, range of movement and ability to bear weight.
- Check for bony tenderness. It can be difficult to distinguish between a severe sprain and a fracture.
- Assess the degree of pain, which will help in determining the type of injury.
- Check for any nerve or circulatory disturbance.
- Ask about past medical history and current medication (including anticoagulants).

First aid treatment

Once the patient comes to your health centre withinjury. Remember the principles of 'paying the PRICE' and 'avoiding HARM' for the first 48–72 hours after the injury as follows:

i) Pay–**PRICE:**

- **P**rotection: from further injury.
- **R**est: for the first 48–72 hours after injury, activity should be avoided.
- **I**ce: a specialised ice pack wrapped in a cloth can be applied for 15–20 minutes every 2–3 hours for the first 48–72 hours after injury.
- **C**ompression: helpsto reduceswelling.Anelastic bandagecanbeappliedaround the affected limb. Remove at night. Ensure that the bandage is not too tight.
- **E**levation: as far as possible, elevate the injured area above the level of the heart for the first 48–72 hours, ensuring that it is comfortably supported.

ii) Avoid **HARM** for the first 72 hours after the injury:

- **H**eat: including heat packs or hot baths, this can increase bleeding.
- **A**lcohol: this can increase swelling and bleeding.
- **R**unning: or other forms of exercise to immobilise the injured part or limb.
- **M**assage: this can increase swelling and bleeding.

iii) **Give** analgesics as needed.

- **Avoid** oral non-steroidal anti-inflammatory drugs (NSAIDs) for the first 48 hours after injury as there is some evidence that they may delay healing.

iv) **Refer to Accident and Emergency/secondary care if:**

- Recovery is slow or symptoms seem worse than the injury OR examination suspects.
- A fracture or dislocation.
- A complete or severe muscle tear.
- Nerve or circulatory damage.
- A known case of bleeding disorder.
- Signs of septic arthritis.
- Intramuscular haematoma.
- Joint locking.
- There is uncertainty about the diagnosis.

Scrapes and minor cuts:

Scrapes are commonplace injuries and involve damage to the top layers of the skin. They do not cause major blood loss but are often dirty because grazes tend to have debris embedded with them. (Fig. 4.19 and Fig. 4.20)



Fig. 4.19 : Scrape



Fig. 4.20 : Minor cuts

- **Measures for taking care for scrapes and minor cuts at home:**

You can teach the public to take care of scrapes and minor cuts at home by using a few simple measures which can help in natural healing and prevent infection. These measures are:

The patient is referred for medical assistance only if the bleeding does not stop, if there is a foreign object embedded in the wound or there is a serious risk of infection (e.g. rusty nail puncture or a dog bite).

1) Wash your own hands well before touching the injured area of the patient.
2) If the wound is dirty wash it under lightly running water or use antiseptic as per the directions.
3) Use a sterile dressing to avoid touching the wound directly and put gentle pressure on the area.
4) Elevate the wound, above the level of the heart if possible, for example by supporting it on cushions. When bleeding has reduced clean the area and keep it dry.
5) Apply a sterile dressing over the scrape / cut.
6) Administer a dose of tetanus toxide injection.
7) Give analgesic such as Ibubrufen at once if patient has pain.

Burns and Scalds:

Burns and scalds are considered together as they produce the same type of injury. Burns are caused by dry heat, while scalds are caused by wet heat. Both are treated in the same way. Burns covering a large area or through deep layers of skin require hospital treatment but small burns will usually heal at home.

Causes:

a) Burns are caused from flames by:
   i) Fire, explosions of pressure stoves, petrol burns, hot metals, cigarettes etc.
   ii) Corrosive chemicals, e.g. strong acids and strong alkalis.
   iii) Electricity.

b) Scalds are caused by:
   1) Hot liquids such as: boiling water, tea , coffee , soup, steam, hot oil, tar, etc.

Types:

According to degree, burns and scalds can be classified into following 2 types:

i) **Superficial:** where the skin is partially destroyed;

ii) **Deep:** where the skin is completely destroyed and other structure such as muscles, bones, etc may also get destroyed.

The extent of the injury caused by a burn or scald depends on two factors:

a) The duration of contact between the skin and substance causing injury.

b) The strength of the substance. This is particularly importance when chemicals and electric currents are the cause of injury.

Signs and symptoms:

a) **Superficial burns and scalds:**

i) The skin may be red or blistered, if the blister is broken, the skin is raw and wet but the underlying fat is not exposed.

ii) Signs of shock.

iii) Severe pain.

b) **Deep burns and scalds: (Fig. 4.21)**

i) The skin is completely destroyed, exposing the fat and other deep tissues.

ii) Signs of severe shock.

iii) Severe pain.



Fig. 4.21 : Deep burn

First aid Treatment:

1) **Superficial burns and Scalds:**

These are not extensive hence can be treated at the sub-centre or PHC.

Proceed as follows:

a) If the burn or the scald is fresh and the skin is covered with blisters (Fig. 4.22)

i) Wash with clean water.

ii) Apply soframycin ointment and cover with Vaseline gauze.

iii) Dress with sterile gauze.

iv) Take off the dressing after one week if

a) If the skin is clean and dry, leave uncovered.

b) If the wound smells and is wet, refer to the MO PHC.

c) If the burn or scald is over 24 hours old and the skin is broken:

i) Wash with clean water.

ii) Remove any dirt present.

iii) Apply soframycin ointment and apply Vaseline gauze.

iv) Dress with sterile gauze.

v) Give prescribed amoxicillin capsule 500 mg 8 hourly for five days.

vi) Dress wound every 2 days until the skin is dry and clean.

vii) If the wound smells and is wet, refer to the PHC.



Fig. 4.22 : Do not burst blister as this can lead to infection

Follow up: Give following instructions to patient during follow up:

i) Drink plenty of fluids.

ii) If the dressing is wet or falls off, come to the sub-centre immediately.

iii) If fever develops, come to the sub-centre immediately.

2) **Deep burns and Scalds:**

The main effects of deep burns and scalds are shock, pain and sepsis. Your efforts must be directed to deal with these three conditions. Proceed as follows:

Remember:

Children, weak and elderly persons are most affected by shock when burnt or scalded. The extent of skin burnt or scalded is very important in deciding the severity of shock, if one-third of the body is burnt death is likely to occur due to shock. Attention to shock is of vital importance in these cases.

1) Treat the shock as a first priority.

i) Lie the patient down.

ii) Keep the patient warm.

iii) Start I/V line with immediate fluid replacement (as prescribed by physician).

iv) Do not remove any clothing.

v) Check vital signs after every fifteen minutes.

vi) Check level of consciousness and look for cyanosis.

vii) Give I/V analgesic (inj. voveran)

viii) Give a dose of inj. tetanus toxide.

ix) Cover all exposed skin which is burnt with soframycin or sulfadiazine ointment or with Vaseline gauze. This will also reduce the pain and guard against infection.

2) Transfer the patient to the nearest hospital as soon as possible. Always transport the patient in lying down position.

You must always transfer patients with deep and extensive burns or scalds to the District hospital; also if these burns are not treated properly they will give rise to scarring and disfigurement on healing.

Teaching the community about Burn management at home

Minor burns such as superficial burns and scalds can be well managed at home. The following are the various instructions for taking care of burns in emergency which you can teach to the group of the people at the health centre or in the community. Tell them to proceed with the burns/scalds as follows:

1) As soon as possible flood the burnt area with cold water. Keep cooling with water for atleast 10 minutes.

2) Remove any jewellery or tight clothing as they may become stuck later if the area swells.

3) DO NOT break blisters or try to remove skin from the area.



Fig. 4.23 : Cover the burnt area to prevent infection

1) Cover the burn with a sterile dressing. This is essential to protect the exposed injury from infection. If you do not have a dressing, clean plastic food bags may be used but DO NOT wrap them too tightly around the skin. (Fig. 4.28)

2) NEVER apply sticking plasters or adhesive tape directly to the skin, even around the burn as the burn may extend further than it first appears.

3) DO NOT use ointments or lotions of any kind.

4) Report to the doctor/ sub-centre for further treatment.

Minor Head Injuries (Scalp Injuries): (Fig. 4.24)

There is a very rich blood supply to the scalp; hence the cuts to the head may often bleed copiously making them to appear worse than they actually are. However a head injury could represent a more serious underlying injury so careful observation and treatment is necessary.

Remember:

The elderly and children especially need to be monitored for any changes in behaviour or sensorium after head injuries which may be the indication of trauma to brain tissue and need quick referral.

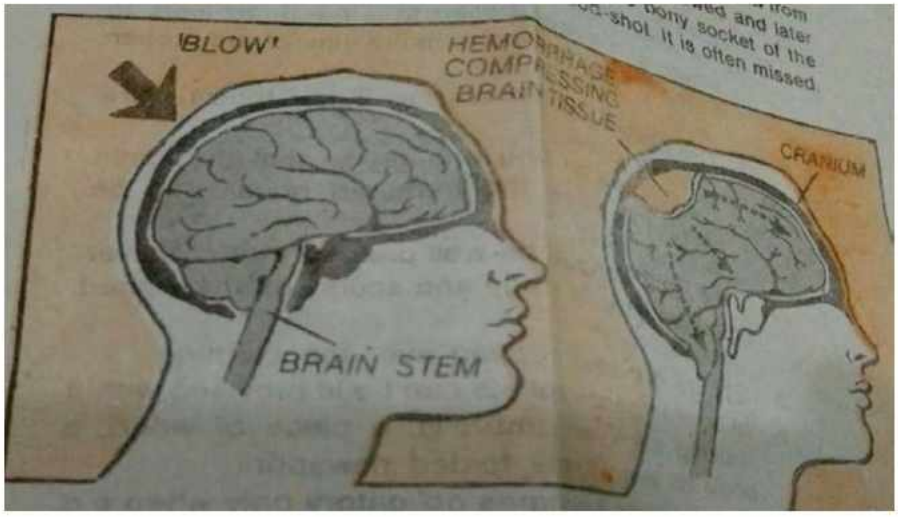


Fig. 4.24 : Head injury causing brain trauma

The following immediate measures are taken to stabilise the patient with minor head injuries:

1) Apply gentle pressure to the wound with a sterile dressing or pad.
2) Bandage the dressing in place if necessary by a roller bandage around the head to keep pressure on the wound.
3) Give the patient a dose of tetanus toxoid injection.
4) Give tab. paracetamol 500 mg if necessary.
5) Lay the patient down with pillows or cushions under him/her to keep the head and shoulders raised above heart level.
6) Keep an eye on the patient for headache, nausea, vomiting drowsiness or loss of consciousness.
7) Record vital signs (BP, pulse, respiration, temperature) and level of consciousness every 2 hourly.
8) Send the patient to hospital, if bleeding is significant or there is a gaping of the wound or if unconsciousness or sickness occur.

Nosebleed:

Nosebleed can be common in children and in the elderly. It may occur following picking or blowing the nose or after a heavy cold as the blood vessels inside the nose are fragile.

When a patient comes with nose bleed, your aim in treating the nosebleed is to control the blood and keep the airway clear for breathing.

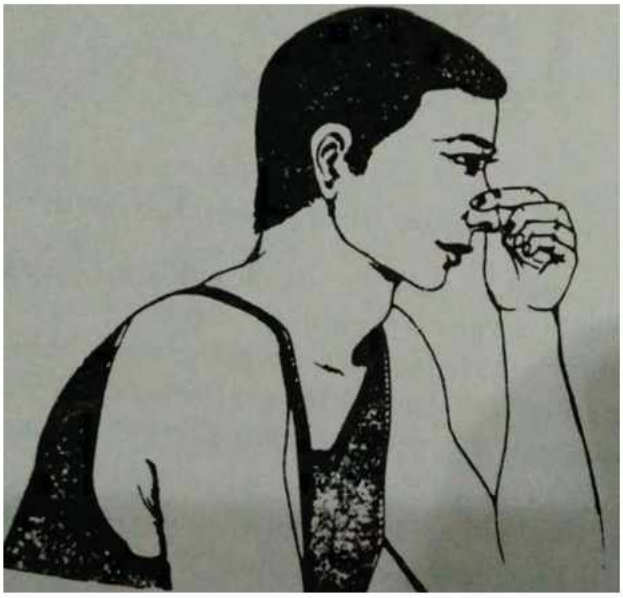


Fig. 4.25 : Stop bleeding by pinching the nose

Measures to control bleeding are:

1) Make the patient to sit on a chair with his/her head leaning forward.
2) Do not let him/ her lean the head backward as blood may run down his/her throat.
3) Pinch his/her nose on the fleshy part just below the bridge and apply pressure for 10 minutes. (Fig. 4.25)
4) Tell the patient to breathe through mouth and you may need to give her a towel or tissue to mop up blood or dribble. If he/ she is a young child you can pinch his/her nose for applying gentle but firm pressure to both sides. This helps the blood vessels to contract.
5) When the bleeding stops, you can clean around the nose with lukewarm water or wipes. Blowing the nose should be avoided for the rest of the day as this may dislodge blood clots.
6) If the bleeding persists for longer than 30 minutes the patient should be taken to hospital, whilst keeping calm and sitting in the leaning forward position as much as possible.

Black Eye

Most black eyes are easily treated at home as long as the injury is just to the area around the eye and if there is no bleeding or direct injury to the eyeball. (Fig. 4.26)

First aid treatment:

Immediately give the first aid treatment (follow the same steps as mentioned for minor head injury) and refer the victim to the hospital if you see him/ her suffering from any of the following conditions:

- Bleeding fromthe eyeball
- Loss of consciousness
- Two black eyes (especially if the injury was to a part of the head other than the face)
- Confusion

- Loss of vision or blurred vision
- Vertigo (dizziness)

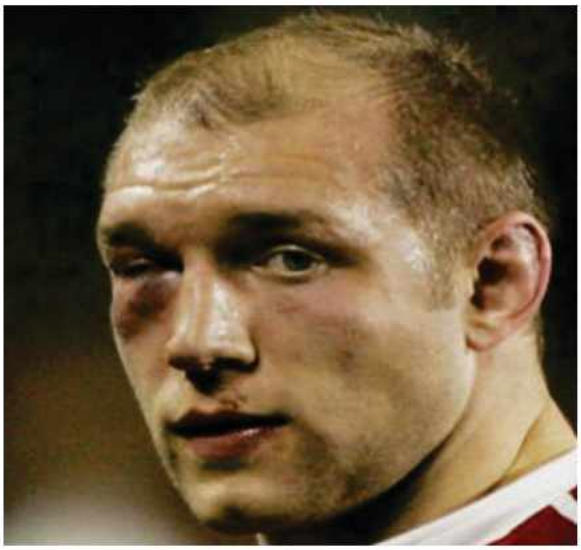


Fig. 4.26 : Victim with black eye after getting hit

4.3.6 Haemorrhage

What is haemorrhage?

Haemorrhage is the escape of blood from a blood vessel. It may be arterial, venous or capillary. The bleeding mayoccur externallywhich is visible through wound or internally into serous cavities (e.g. cranial, chest, abdominal or pelvic cavities).

How does the body stop bleeding?

When a blood vessel is torn or cut, a series of chemical reactions takes place that causes the formation of a blood clot to seal the injury. Components of the blood known as platelets clump together at the injury site. Damaged tissue and platelets release chemicals that activate proteins called clotting factors. These react with a special protein (fibrinogen) to form a mesh of filaments that traps blood cells. These form the basis of blood cells to fight infection and specialised blood cells that help promote repair and recovery. A scab will form to protect the wound until repair has taken place. When applying pressure to the site of a wound you are helping the clotting process.



What are the causes of haemorrhage?

- Internal bleeding may occur from an ulcer or tumour within the gastro-intestinal tract, stone or tumour in the urogenital tract, abdominal mass, injury to visceral organs, uterine bleeding, haemorrhage secondary to the coughing or vomiting up of blood.
- External bleeding can be caused by various injuries such as: scrapes, cuts, puncture wounds, nosebleed, pierced objects or amputation. (Fig. 4.27)

What are the Signs and Symptoms of haemorrhage?

- **The patient may have various signs and symptoms depending upon cause and severity of haemorrhage. such as :** bright red blood in cough , bright or dark red blood in vomit, vomit that looks like coffee, bright red blood or dark tar-like substance in faeces, haematuria (bright red blood in urine) rigid, swollen, or bruised abdomen, joint or bone and pain at the sight of bleeding.
- In severe haemorrhage the patient mayhave rapid,thready pulse, sighing respiration, thirst, cold and clammy skin, pallor, dizziness, syncope, apprehension, restlessness and low blood pressure (Shock).

What is the first–aid treatment for haemorrhage?

First aid for a bleeding victim is crucial. If you can slow or stop blood loss until the patient receives appropriate treatment, the patient's chances of surviving increase considerably.



Fig. 4.28 : Control of venous bleeding by applying direct pressure

The first aid treatment will depend on the type of haemorrhage as follows:

i) **Internal haemorrhage :**

If there is severe internal bleeding which may occur from an ulcer or tumour within the intestinal tract or haemorrhage secondary to the coughing up of large quantities of blood, the patient should be placed in a lying–down position and transported as quickly as possible to a hospital.

ii) **External haemorrhage:**

If the wound is bleeding proceed as follows:

a) Place pressure directly on the wound by placing a sterile gauze dressing or a clean handkerchief on the bleeding points and pressing firmly with your gloved hand over dressing. Continue pressure until bleeding stops. (Fig. 4.28)

- Do not remove dressing. If soaked through, add more material, and continue pressure. If no broken bone suspected, elevate wound higher than level of heart.
- Do not move limb if you think it is broken.

b) If the bleeding is secondary to a very severe laceration in the arm or in the leg. Place the tourniquet just above the site of the injury. This should be applied only as a last resort if the bleeding cannot be controlled by direct pressure. (Fig. 4.29).

c) Check victim's breathing. If breathing stops, see rescue breathing.

d) **Watch for shock (refer signs and symptoms of shock).**Keep victim lying down on their side or sitting up if more comfortable for victim, and cover lightly with blanket.

e) Do not give food or drink.

f) Shift immediately the patient to nearby hospital for appropriate treatment of severe bleeding in case of the cuts that are more than skin deep, cuts with ragged edges, cuts with deeply embedded dirt, impaled objects, or amputations.

Box 4.8 : Some instructions for applying tourniquet (Fig. 4.30)

1. A tourniquet must never be applied on the naked skin.
2. Tourniquet must be loosened every ten minutes to allow the circulation to return, otherwise the tissues will be deprived of blood and gangrene may result.
3. Always note the time when the tourniquet is applied.
4. A tourniquet should be applied as close as possible to bleeding site and just tight enough to stop the bleeding. If a tourniquet is applied too loosely, it will increase the amount of bleeding. If applied to tightly, it may unnecessarily damage tissues.
5. When a tourniquet has been in place for some minutes, it can be removed permanently soon after stoppage of bleeding.
6. A tight pressure dressing or tourniquet should never be applied in the region of the neck. The best way to stop bleeding from the neck is to constrict the bleeding vessel with fingers.

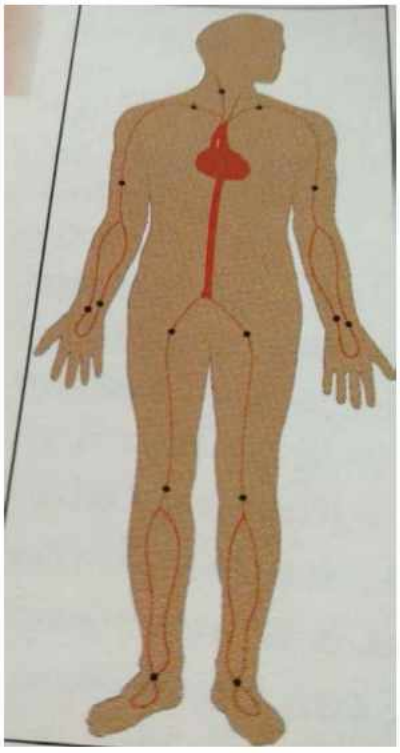


Fig. 4.29: Pressure points for

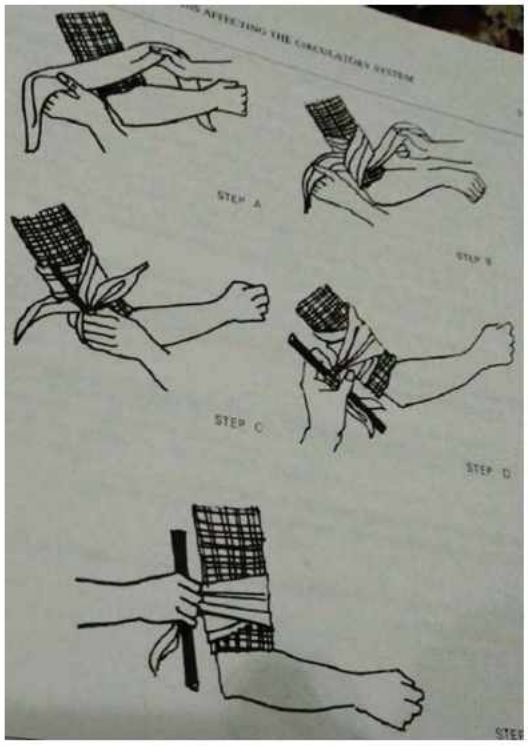


Fig . 4.30: Steps for application of

Don't do the following:

- DO NOT apply a tourniquet to control bleeding, except as a last resort. Doing so may cause more harm than good. A tourniquet should be used only in a life-threatening situation and should be applied by an experienced person.
- If continuous pressure hasn't stopped the bleeding and bleeding is extremelysevere, a tourniquet may be used until medical help arrives or bleeding is controllable.
    - It should be applied to the limb between the bleeding site and the heart and tightened so bleeding can be controlled by applying direct pressure over the wound.
    - To make a tourniquet, use bandages 2 to 4 inches wide and wrap them around the limb several times. Tie a half or square knot, leaving loose ends long enough to tie another knot. Astick or a stiff rod should be placed between the two knots. Twist the stick until the bandage is tight enough to stop the bleeding and then secure it in place.
    - Check the tourniquet every 10 to 15 minutes. If the bleeding becomes controllable, (manageable by applying direct pressure), release the tourniquet.
- DO NOT try to clean a large wound. This can cause heavier bleeding.

  DO NOT try to clean a wound after you get the bleeding under control. Get medical help.

Remember:

- No haemorrhage from the scalp, the face or from one of the extremities usually looks much worse than they are, as most of these lacerations will stop bleeding by themselves within a few minutes. It is rare for someone to bleed to death from the extremity wound.
- **People who have haemorrhage be transported** usually lying flat or with the feet elevated. This will tend to combat shock by causing blood to gravitate toward head.

4.3.7 Shock

It is a condition in which the circulatory system is unable to provide adequate circulation to the body tissues which results in the slowing of vital functions also called as circulatory failure. If untreated, this can lead to permanent organ damage or even death.



Classification of Shock. Shock is classified as given below:

- Hypovolemic shock
- Cardiogenic shock
- Distributive shock

Hypovolemic shock: It occurs due to loss of fluid, blood and plasma. e.g. burns, haemorrhage/bleeding, dehydration. It is the most common type of shock would represent a loss of 750 to 1300 ml of blood in a 70 kg person. Basically occurs due to blood loss, plasma loss and crystalloid loss.

Cardiogenic shock: It results from inability of heart muscle to function adequately or mechanical obstruction of blood flow to or from the heart.

Or occurs when the heart's ability to contract and to pump blood is impaired and the supply of oxygen is inadequate for the heart and tissues. The causes of Cardiogenic shock are known as either coronary (Myocardial infarction) or non coronary (Cardiomyopathy, Valvular damage, dysrhythmias etc.)

Distributive shock: It is also known as vasogenic shock. Blood volume remains normal but the size of vascular space increases dramatically because of massive systemic vasodilatation.

- **Types of distributive shock:**

1) **Anaphylactic shock:** It is caused by a severe allergic reaction when a patient who has already produced antibodies to a foreign substance (antigen) develops a systemic antigen-antibody reaction. Hypersensitivity reaction resulting in severe vasodilatation. Common sensitising agents are bee-stings, penicillin, snake venom etc.
2) **Septic Shock:** It is a systemic response towards Infection caused by release of vasoactive substances like endotoxines of gram negative organisms like E. coli and Staphylococcus, Pneumococcus. Having high mortality rate.
3) **Neurogenic Shock:** Vasodilatation occurs as a result of loss of sympathetic tone, caused by Spinal cord injury, especially cervical, Spinal anesthesia, Severe vasovagal reaction caused by pain or psychic trauma , Drugs causing vasodilatation e.g. lidnocaine, barbiturates, alcohol etc.

Stages of Shock:

1) **Initial stage** - Tissues are under perfused, decreased CO, increased anaerobic metabolism, lactic acid builds up.
2) **Compensatory stage -** Reversible, Sympathetic Nervous System activated by low carbon dioxode, attempting to compensate for the decrease tissue perfusion.
3) **Progressive stage -** Failing compensatory mechanisms: profound vasoconstriction results in ischemia and Lactic acid production that leads to metabolic acidosis.
4) **Irreversible or refractory stage** - Cellular necrosis and Multiple Organ Dysfunction Syndrome may occur.

First-aid treatment

Whenever you will find a patient in shock as evidenced by signs and symptoms, immediately proceed with the following steps:

1) Lay the person down, if possible

- Elevate the patient's feet about 12 inches unless head, neck, or back is injured or you suspect broken hip or leg bones. (Fig. 4.31)
- Do not raise the patient's head.
- If the person vomits or begins bleeding from the mouth, turn him or her onto a side to prevent choking, unless you suspect a spinal injury.

2) Begin CPR, if necessary

If the patient is not breathing or breathing seems dangerously weak:

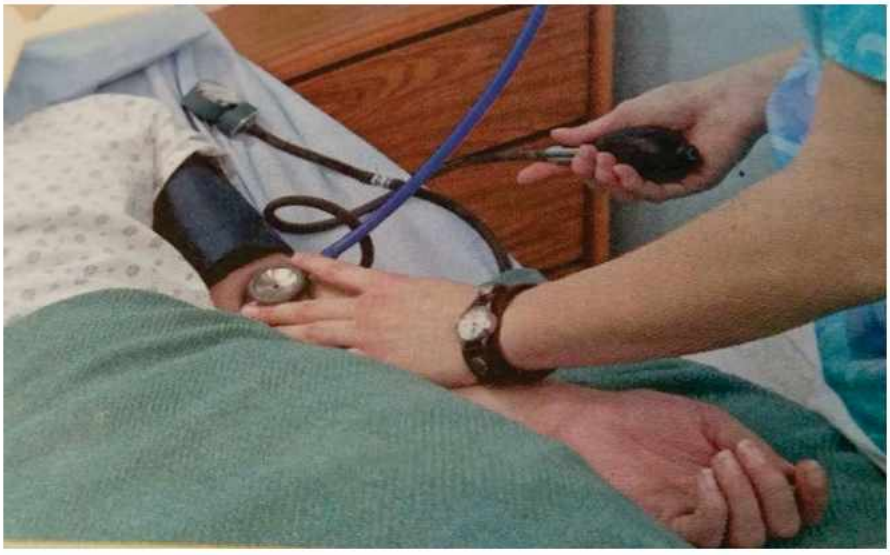
- For a child, start CPR for children (Follow the steps of CPR as mentioned in drowning)
- For an adult, start adult CPR.(Follow the steps of CPR as mentioned in drowning)
- Continue CPR until the patient resume breathing.

3) Treat visible injuries

Follow the same steps as mentioned for the treatment of punctured wound.

4) Keep person warm and comfortable

- Loosen tight clothing.
- Cover with coat or blanket.
- Keep the person still. Do not move the person unless there is danger.
- Reassure the person.
- Do not give anything to eat or drink by mouth.
- Start I/V line for fluids/ emergency drugs.
- Record and monitor vital signs (TPR/ BP and level of consciousness) every half hourly till patient becomes stable. (Fig. 4.32)
- Transport the patient quickly to the nearest health care facility.



5) Referral

- Refer the patient immediately to nearby hospital for further treatment in case if patient's condition worsens. (Fig. 4.33)

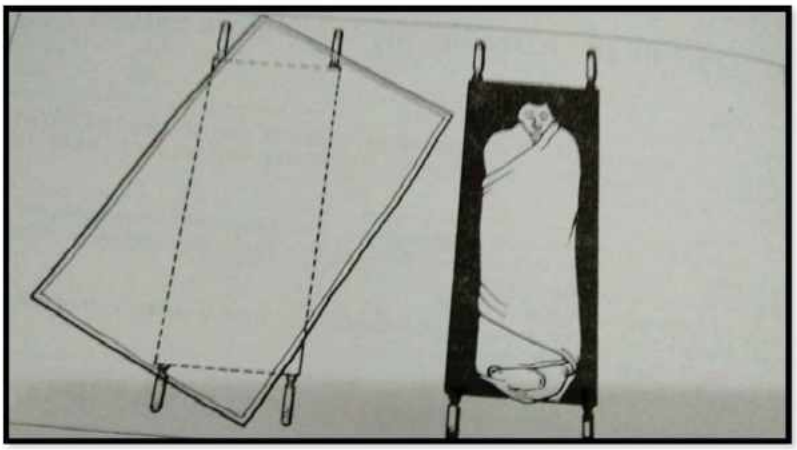


Fig. 4.33 : Transfer the patient with shock in stretcher after covering him/her in a blanket to prevent hypothermia

- At the hospital, the patient will be given oxygentherapy, blood transfusion / plasma expanders / life saving drugs in addition to intravenous infusion.
- Intravenous infusion is monitored according to a systolic blood pressure of 90–100 mmHg. in order to maintain perfusion of the vital organs.
- Blood test, urine test, cardiac functioning tests, X ray and/or CT scanand other diagnostic investigations may be done to find the underline cause, as required.
- Other treatments will depend on the cause of shock.

4.3.8 Drowning

Drowning is the leading cause of injury-related death among children ages 1 to 4 and the second-leading cause of death in children 14 years of age and under. Young kids are especially at risk because they are curious, fast, and attracted to water but are not yet able to understand how dangerous it is.

What happens due to drowning?

Drowning results in the inhalation of water into the windpipe and lungs, clogging the lungs completely. The person who is drowning has the mouth and nose below the level of the water and therefore is unable to inhale any air every time he breathes. The lungs become full of water and air cannot enter them. (Fig. 4.34)



Remember :

- Brain is quickly damaged by lack of oxygen which occurs when a drowned person is not inhaling any oxygen to circulate round the body.
- Damage to brain cells is irreversible so that a person may survive but be mentally crippled for life. The important of immediate action cannot be over-emphasised
- Your first job therefore, is to give immediately artificial respiration to prevent brain cell damage from occurring.

Emergency care

The first priority after getting a drowned victim out of the water is quickly to assess his/ her breathing. If he/she is not breathing, immediately begin rescue breathing and call someone for help. Do not assume it is too late to save a victim's life, even if he/ she is unresponsive andproceed for CPR as follows: (Fig. 4.35)

If your child is the victim of a near-drowning, this fast-action rescue plan can prevent a tragedy.

i) Clear the mouth of weeds or any other material obstructing air entryand of artificial teeth if any.

ii) Lay the patient on his back on a firm surface.

iii) Raise his shoulders on a folded coat or in some other way.

iv) Extend the head backwards to keep the air way clean.

v) Kneel down on both sides of the patients head.

vi) If necessary turn the patients head to one side to clear out the mouth.

vii) Grasp his wrists and cross them over the lower part of his chest.

viii) Rock your body forward and press down on the patient's chests.

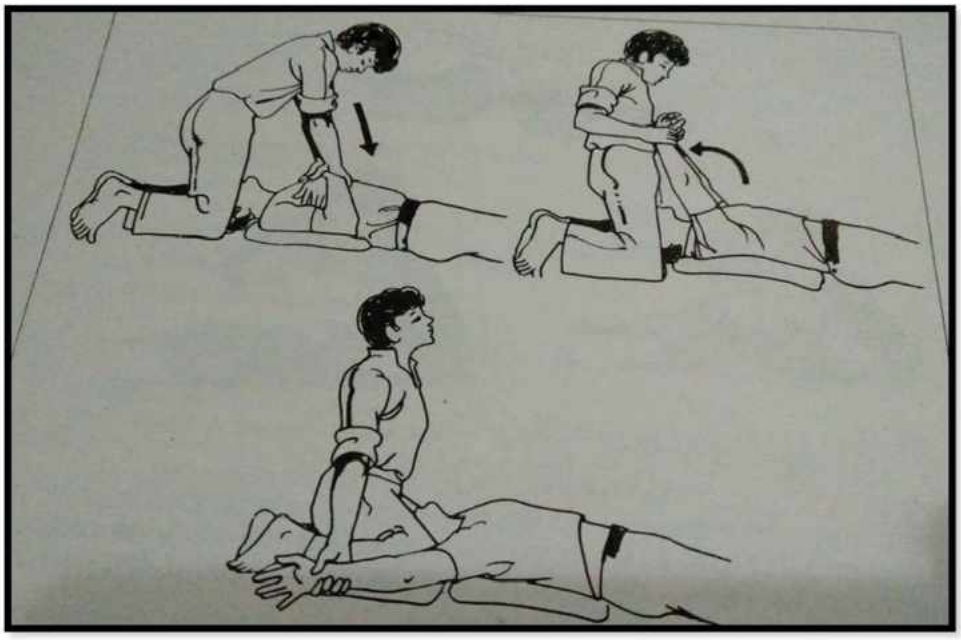


Fig. 4.35 : Steps of CPR for rescuing a drowning victim

ix) Release the pressure and with a sweeping movement draw the patient's arms backward and outward as far as possible.

x) Repeat steps (vii. to ix) rhythmically twelve times per minute in an adult.

xi) Transfer the patient lying on the stretcher to the nearest PHC or hospital as early as possible. Continue giving artificial respiration on the way.

Remember:

In drowning the heart continues to function even when breathing has ceased for some time. Breathing may be started about an hour or more after artificial respiration is commenced.

How to give CPR in different age groups?

To open your child's airway, gently tilt his/her head back with one hand and lift his/ her chin with the other. Put your ear to the child's mouth and nose, and look, listen, and feel for signs that he/she is breathing. (Fig. 4.36)

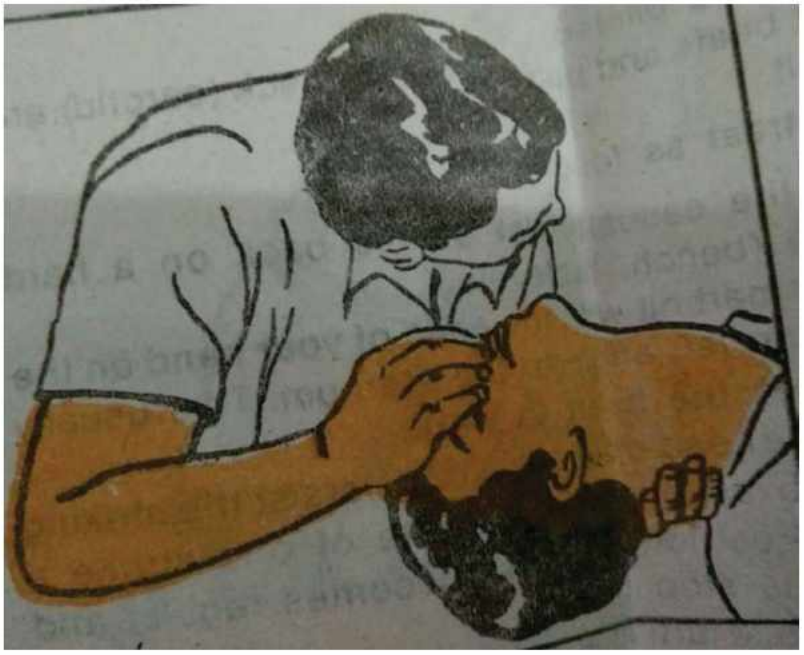


Fig. 4.36 : Listening and feeling for victim's sign of breathing



If the child doesn't seem to be breathing, give mouth to mouth breathing as follows:

Infants under age 1:

Place your mouth over infant's nose and lips and give two breaths, each lasting for about 1 second. Look for the chest to rise and fall. (Fig. 4.39)

Children 1 and older:

1) Pinch child's nose and seal your lips over her mouth. Give two slow, full breaths (each lasting for 1 to 2 seconds). (Fig. 4.37)
2) Wait for the chest to rise and fall before giving the second breath.
3) If the chest rises, check for a pulse (as explained in Sr. no : 4). If the chest doesn't rise, try again. Re-tilt the head, lift the child's chin, and repeat the breaths.
4) Check for a pulse. Put two fingers on the child's neck to the side of the Adam's apple (for infants, feel inside the arm between the elbow and shoulder). Wait five seconds. If there is a pulse, give one breath every three seconds. Check for a pulse every minute, and continue rescue breathing until the child is breathing on her own or help arrives.

If you can't find a pulse, give cardiac compression as follows:

- **Infants under age 1:**

Imagine a line between the child's nipples, and place two fingers just below its center point. Apply five half-inch chest compressions in about three seconds. After five compressions, seal your lips over your child's mouth and nose and give one breath.

- **Children 1 and older:**

Use the heel of your hand (both hands for a teenager or adult) to apply five quick one-inch chest compressions to the middle of the breastbone (just above where the ribs come together) in about three seconds. After five compressions, pinch the child's / adult's nose, seal your lips over his mouth, and give one full breath. (Fig. 4.38)



Fig. 4.38: Technique of cardiac compression in adults



Fig. 4.39: Technique of mouth breathing in child

- **All ages:** Continue the cycle of five chest compressions followed by a breath for one minute, then check for a pulse. Repeat cycle until you find a pulse or help arrives and takes over.

Educating the community how to prevent the hazards of drowning?

In rural areas the people especially young children are more vulnerable to drowning likely due to availability of pools, wells, tanks etc. as well as the children have more attraction for water. As community health nurse practitioner, it is your essential duty to safeguard the public especially parents and children about various hazards of drowning. For example:

1) Do you know that a small child can drown in as little as one to two inches of water, which is just enough to submerge his/ her mouth and nose? Be sure that child is protected from these danger zones in your home, yard or field.
2) Never leave a child under four years alone in the tub or near a running bath. A school age child can bathe by himself / herself but a parent should stay within reach.
3) Never leave your child unattended in a bath seat, he/ she could slip down into the water and get trapped underneath, or the ring could tip over.
4) A curious toddler can fall headfirst into a water filled bucket and be unable to get out. Even a cooler filled with melting ice can be a drowning hazard. Always make sure to empty after use.
5) Keep toilet cover down and bathroom door closed at all times. Install a toilet cover safety bolt.
6) Empty child size pools after use and store on their sides.
7) Pools are a lot of fun but they can also be dangerous, especially for children. In fact, the majority of drowning occurs at residential pools. Achild is at risk when he is inadequately supervised or when adults or the child himself overestimate his swimmingability.
8) Install a high (atleast five feet) fencearound all sides of the pool that separates it from the play area, with a self-closing gate.
9) Keep rescue equipment e.g. pole, rope, stick etc.near the pool with in an easy reach.

10) Never take your eyes off your child when he/she is in the pool area.
11) Keep the area around the pool clean and do not leave toys in or around it, because they could attract children to the water.
12) Keep the pool covered when it is not in use.
13) Make sure the cover fits securely over the pool's entire surface. Otherwise, a child may get under it and become trapped.
14) If your child is missing, check the pool first, since children can be drown in only a few minutes. Go to the pool's edge and scan the entire surface.
15) Teach your child to swim with a companion at all times, even if he is in the water with a large group of children and adults.
16) Do not let kids jump or dive into a lake, pond, or river until an adult has checked the water's depth (it should be atleast nine feet) and looked for underwater hazards that may be hard to see.
17) Do not allow the children to stride in pools, streams or other water collections alone if they are not able to swim.
18) Do not stand on the parapet of open wells while drawing water.
19) Never let a child swimnear boats or fishermen.Always stayin supervised swimming areas within sight of a lifeguard.
20) On boating trips, everyone should wear a life preserving jackets.

4.3.9 Surgical Trauma

What is surgical trauma?

Surgical Trauma is a term which refers to physical injury of sudden onset and severity which require immediate surgical treatment. The insult may cause systemic shock called "shock trauma", and may require immediate resuscitation and interventions to save life and limb.

What are the causes of trauma?

Traumatic injuries are the result of a wide variety of blunt, penetrating and burn mechanisms. Theyinclude motor vehicle collisions, sports injuries, falls, natural disasters and a multitude of other physical injuries which can occur at home, on the street, or while at work and require immediate care.

What are the types of trauma?

The traumas are classified according to its severity into moderate, serious, severe and critical type, in various body regions such as: traumas of head, neck, face, thorax, abdomen, pelvis, and extremities.

First-aid treatment for trauma

When a trauma patient reports to you, proceed with the following steps:

- Assess the trauma patient for life-threatening problems such as: airway obstruction, breathing difficulty, bleeding, shock and infection by evaluating the patency of airway, breathing and circulation.
- Initiate resuscitative measures for securing the patency of airway, facilitating breathing, stopping bleeding and preventing shock and infection.(Follow the

steps as discussed under CPR, first treatment of haemorrhage, shock and wound.)

- Perform a thorough head-to-toe examination, paying attention to evidence of the mechanism of injury and potentially injured areas.
- Control external bleeding with direct pressure and watch for internal bleeding.
- Start intravenous linefor administering IVfluids/emergencydrugsorblood if needed.
- Watch for signs and symptoms of shock (refer S/S of shock).
- Treat the shock before shifting. (refer the first aid treatment of shock)
- Initiate prompt transport of the patient tospecialty care hospital.The injured patient is at risk for progressive deterioration from continued bleeding and requires rapid transport to a trauma center with appropriate stabilisation procedures to be performed on the way of transportation.

Treatment in hospital

On reception of injured patient following immediate measures are taken to save the life of the patient:

- Endotracheal intubation is done to secure the airway of the patient who is unable to maintain the airway or who has potential airway threat.
- Airwayis secured with in-line of cervical immobilisation in the patient who may have suffered cervical trauma.
- Artificial ventilation is provided by for patients who exhibit severe respiratory problem.
- Oxygen saturation is maintained at more than 90–92%.
- External bleeding is controlled by applying direct pressure above the site of wound.
- Intraperitoneal haemorrhage is assumed if haemorrhagic shock is found in the absence of external haemorrhage.
- Vital signs and level of consciousness are recorded and monitored after every half hourly.
- If the patient is found haemodynamically unstable after administration of 2 liters of fluid in an adult patient, it indicates ongoing blood loss and is an indication for immediate blood transfusion.In emergency type O, Rh-negative blood can be administered if cross-matched blood is not available.
- The fluid loss is replaced with crystalloid solution (such as: Normal saline and Dextrose saline) and Ringer lactate solution is administered to patients with evidence of shock.
- Intravenous infusion is monitored according to a systolic blood pressure of 90–100 mmHg. in order to maintain perfusion of the vital organs.
- A complete spinal immobilisation of patients with multisystem injuries or of the patients who are potential for spinal cord trauma is ensured.
- Further investigations are carried out such as: contrast-enhanced CT scan of the head, spine, abdomen and pelvis and ultrasonography to find out the cause, type, site and severity of injury.
- Depending upon the cause, type, site and severity of trauma as well stability of the patient, surgical treatment is initiated.

4.4 LET US SUM UP

In this practical we have discussed the meaning, causes and signs and symptoms of various Common Emergencies such as: high fever, diabetic coma (hyperglycemic shock) and insulin shock (hypoglycemic shock), fracture, wound, minor injuries, haemorrhage, shock, drowning and other surgical traumas.

We have also described the First Aid measures for managing and stabilising the conditions of the patients with these emergencies. Certain new terms are clarified in glossary. You may use a medical dictionary for further clarifications of terms. However, further reading is solicited to keep you updatedfor which certain references are given.

4.5 ACTIVITY

1) Assess causes and signs/ symptoms of the 3 patients with high fever, diabetic coma and insulin coma, different types of (fractures, wounds, minor injuries, haemorrhage), shock, drowning and surgical traumas as mentioned in the practical.

2) Practice the steps of First Aid measures on 3 patients with high fever, diabetic coma and insulin shock,different types of (fractures, wounds, minor injuries, haemorrhage) shock, drowning and surgical traumasas mentioned in the practical.

4.6 KEY WORDS

Amputation : Surgical removal of apart of body or limb.

Antiseptic : An agent applied on wound for preventing infection by inhibiting the growth of infectious agents.

Assessment : It includes health history and physical examination of the patient.

Autoimmune : Cellular response for development of auto-antibodies.

Auto-antibodies : An abnormal immune substance produced in blood which destroys its own body cells.

Bruise : A yellow or bluish discolouration of the skin caused by blow to the body.

Cyanosis : Bluish discolouration of skin or mucous membrane.

Confusion : Disorientation to time, place and person.

CPR : Cardio-pulmonary resuscitation

CT : Computed tomography(An x-ray technique that produces a film representing a detailed cross section of tissue structure)

Dizziness : Laziness.

Drowsiness : The state of almost falling asleep.

Dyspnoea : Difficulty in breathing.

Endo-tracheal intubation : Insertion of airway catheter through the mouth or nose into the trachea

Immobilisation : Restriction of movements

Haemodynamic	:	Related to cardiac function and peripheral vascular physiology.
Hypothermia	:	A dangerous fall in temperature below 35°C or less.
Inflammation	:	A protective response ofthe body tissues to irritation or injury.
Irreversible	:	Which cannot recover.
Metabolism	:	Theprocessoftransforming food stuffs into tissue elements.
Oedema	:	Accumulation of fluid in subcutaneous tissues.
Rigor	:	Aviolent attack ofshivering associated with chills and fever.
Seizure	:	Asudden violent involuntaryseries ofcontraction of a group of muscles.
Sensorium	:	The consciousness that includes orientation of time, place and person.
Syncope	:	A brief lapse inconsciousness.
SOS	:	If necessary
Stat	:	At once
Tumour	:	A new growth of tissues
Ulcer	:	A circumscribed depressed lesion on the skin or mucous membrane.

4.7 REFERENCES

1) Panwar PK. Clinical Pharmacology: Medical Surgical Nursing. 4th edition. AITBS Medical Publishers, New Delhi -51 India. 2015 p. 24-36

2) Patricia A.Potter,Anne Griffin Perry, Patricia A, Sockert,Army M. Hall. Skin Integrity and Wound Care. In: Janice Colwell and Daisy Thomas ;Potter & Perry's Fundamentals of Nursing. South Asian Edition. Sharma and Thomas Reed Elsevier India Pvt. Ltd.2013. p. 1208-9.

3) Gupta.LC and Gupta A .Management of General Injuries, Sports Injuries and Common Injuries : Manual Of First Aid. Ist edition. Japee Brothers Medical Publishers (P) Ltd. New Delhi-02 (India) 1995 p. 81-94; 197-202.

4) First Aid to the Injured. St John Ambulance Association. 4th edition. Red Cross Road, New Delhi 1991. p 78-100

5) Antonio M. Gotto. The Cornell Illustrated Emergency Medicine &First Aid Guide. 1st edition. Life Line Press Regnery Publishing Company, Washington DC.2002 p.46-48,64-66,82-83,105-108,127-128,132-134,186-187.

6) Khalida Jabeen. Emergency Nursing: An Action Oriented Manual 1st edition. SKIMS Srinagar Kashmir; Makoff Printers, 2003. p 75-77

7) Manual For Health Worker Female. Directorate General of Health Services Ministry Of Health And Family Welfare. 2nd edition. Rekha Printers Pvt. Ltd. New Delhi-20 , 1984. P 18.10- 18.14 ; 21.1- 21.9

8) Kenneth N. Anderson , Lois E. Anderson. Mosby's Pocket Dictionaryof Medicin, Nursing And Allied Health. Ist. edition. Japee Brothers Medical Publishers (P) Ltd. New Delhi-02 (India) 1993.

UNIT 5 FIRST AID TECHNIQUES AND STABILISATION CARE IN COMMON EMERGENCIES-2

Structure

5.0 Introduction

5.1 Objectives

5.2 Meaning and Definition of First Aid

5.3 First Aid in Case of Fainting

5.3.1 Signs and Symptoms

5.3.2 First Aid/Emergency Management and Stabilisation Care

5.4 First Aid/Emergency Management and Stabilisation Care in Burns

5.5 First Aid/Emergency Management and Stabilisation Care in Chocking

5.6 First Aid/Emergency Management and Stabilisation Care in Fits

5.7 First Aid/Emergency Management and Stabilisation Care in Poisoning

5.8 First Aid/Emergency Management and Stabilisation Care in Bites

5.9 Let Us Sum Up

5.10 Activity

5.0 INTRODUCTION

In the previous unit we have discussed basic steps of resuscitation and first aid in case of fever, wound, minor injuries, bleeding and shock In this unit we will discuss about accidents occurring from which medical emergencies arise like fainting, bleeding, shock, burns, bites, poisoning etc., Although few conditions are discussed earlier, and more will be dealt in this unit. First impulse of most people is to help the victims and saving the life. First aid is the skill of applying common sense in such a way that minimises sufferings and save lives.

5.1 OBJECTIVES

After completing this unit, you shall be able to:

- define first aid and primary stabilisation of victims in emergencies;
- provide first aid management in common emergencies;
- help someone in need to alleviate sufferings;
- preserve life by applying emergency first aid interventions;
- prevent conditions from worsening; and
- promote early recovery by referring on appropriate time to appropriate and available medical facility.

5.2 MEANING AND DEFINITION OF FIRST AID

First aid is the temporary help given to an injured or sick person before professional

medical treatment can be provided. This timely assistance comprising of simple medical techniques, is most critical to victim and is often life saving.

First aid is immediate and temporary treatment of a victim of sudden illness or injury while awaiting the arrival of required medical aid.

First aid is the assistance given to a person suffering from a sudden illness or injury with care provided to preserve life, prevent the condition from worsening and /or promote recovery by referring to appropriate health care facilities.

We will now understand the treatment and management of common emergencies vis-à-vis – fainting, bleeding, shock, burns, chocking, fits, poisoning and bites.

5.3 FIRST AID IN CASE OF FAINTING

Fainting (blacking out) is also known as syncope. This is temporary loss of consciousness caused by an insufficient supply of oxygen to brain.

Or

Fainting is a loss of consciousness caused by a temporarily insufficient supply of oxygen to the brain, known by the medical term "syncope". Fainting may be preceded by dizziness, nausea or a feeling of extreme weakness. During fainting when person fall can have severe injuries.

5.3.1 Sign and Symptoms of Fainting

- Dizziness and shortness of breath
- Weakness
- Blurred vision
- Headache
- Sensation that room is moving
- Tinnitus (ringing in the ears)
- Nausea/ vomiting
- Paleness
- Tingling or numbness of fingertips and around lips
- Bluish cast to skin (cyanosis)
- Urinary Incontinence
- Excessive sweating (diaphoresis)
- Rapid heartbeat or palpitations

5.3.2 First Aid/Emergency Management and Stabilisation Care

When a person feels faint make him sit down or lie down to prevent injury from fall.

- When a person faints position him on his back and turn head to side to prevent aspiration of secretions as shown in Fig. 5.1
- Shake patient vigorously, tap briskly or yell
- Check airways are clear and ensure fresh air supply

- Restore blood flow by loosening clothing, belts, collars etc.
- Elevate feet above head level
- Check if breathing and pulse is normal
- Avoid to pour anything in mouth to prevent aspiration
- Patient should become normal within a minute, if not seek medical help
- After stabilisation of victim refer to nearest health care facility.



Fig. 5.1 : Steps for first aid management for victim with fainting

5.4 FIRST AID/EMERGENCY MANAGEMENT AND STABILISATION CARE IN BURNS

Burns are one of the most common household injuries. The term burn means more than burning sensation associated with this injury. Burns are characterised by severe skin damage that causes the affected skin cells to die.

A burn is a type of injury to skin, or other tissues caused by heat, sunlight, electricity, chemicals, friction or radiation.

First aid/Emergency management and stabilisation of burn victim:

Burns with Fire/flames: First aid/Emergency management and stabilisation of burn victim as given below:

- Rescue the victim from accident site
- In major burns look for signs of circulation, breathing, coughing or movement If needed start CPR
- Smoother any flames by covering them with blanket or water
- If clothes catches fire, ask client to roll down on ground. (Fig. 5.2)
- When flames smoother try to take out clothes and jewellery, if staked with skin don't try to take out
- Keep the burnt area under running tap water for 10–15 minutes (in superficial burns). This will eases the pain avoid in major burns to prevent hypothermia
- Don't break small blisters formed on burnt area
- Do not apply butter, grease or oil over the burnt area

- Raise the burnt area above heart level to maintain circulation
- Cover burnt area with wet gauze
- In severe burn cases transport victim to nearest health care facilities.



Fig. 5.2: Rescue from flaming burn

Management of chemical burn

A chemical burn is irritation and destruction of human tissue caused by exposure to a chemical, usually by direct contact with the chemical or its fumes.

- Rescue victim from place of accident
- Remove contaminated or chemical soaked clothes from body
- Wash area with water at least for 20 minutes
- Cover area with sterile gauze or clean cloth to prevent infection
- In severe burn cases transport victim to nearest health care facilities

Management of Electrical burn:

Electrical burns may be caused by a number of sources of electricity, such as lightening, stun guns and contact with household current.

- Never approach or touch a victim of an electrical injury until you are sure power is turned off. (Fig. 5.3)
- Check for circulation, airway and breathing if victim is unconscious
- Check for other injuries because electric shock causes severe muscular contraction so victim might have an injury during fall
- Do not cool the burn area. Cover the burn area with dry and sterile gauze or clean cloth and treat victim for shock
- If victim is not breathing start rescue procedure immediately
- In severe burn cases transport victim to nearest health care facilities



Fig. 5.3 : Rescue during electrical shock

5.5 FIRST AID/EMERGENCY MANAGEMENT AND STABILISATION CARE IN CHOCKING

Choking occurs when a foreign object becomes lodged in the throat or windpipe, blocking the flow of air.

Sign and symptoms

The universal sign for choking is hands clutched to the throat. If the person doesn't give the signal, look for these indications:

- Inability to talk
- Difficulty breathing or noisy breathing
- Inability to cough forcefully
- Skin, lips and nails turning blue or dusky
- Loss of consciousness

First aid/emergency management and stabilisation of victim with choking:

Management of victim with choking, "five-and-five" approach to delivering first aid:

- **Give 5 back blows.** First, deliver five back blows between the person's shoulder blades with the heel of your hand.
- **Give 5 abdominal thrusts.** Perform five abdominal thrusts (also known as the Heimlich maneuver).
- **Alternate between 5 blows and 5 thrusts** until the blockage is dislodged.

The American Heart Association recommendsonly the abdominal thrust procedures:

- **Stand behind the person.** Wrap your arms around the waist. Tip the person forward slightly.
- **Make a fist with one hand.** Position it slightly above the person's navel.

- **Grasp the fist with the other hand.** Press hard into the abdomen with a quick, upward thrust – as if trying to lift the person up.
- **Perform a total of 5 abdominal thrusts,** if needed. If the blockage still isn't dislodged, repeat the five-and-five cycle:

To perform abdominal thrusts (Heimlich manoeuver) on you:

- **Place a fist** slightly above your navel.
- **Grasp your fist** with the other hand and bend over a hard surface — a counter top or chair will do.
- **Shove your fist** inward and upward.

To clear the airway of a pregnant woman or obese person:

- **Position your hands a little bit higher** than with a normal Heimlich manoeuver, at the base of the breastbone, just above the joining of the lowest ribs.
- **Proceed as with the Heimlich maneuver,** pressing hard into the chest, with a quick thrust. (Fig. 5.4)
- **Repeat** until the food or other blockage is dislodged or the person becomes unconscious.

To clear the airway of an unconscious person:

- **Lower the person** on his or her back onto the floor.
- **Clear the airway.** If a blockage is visible at the back of the throat or high in the throat, reach a finger into the mouth and sweep out the cause of the blockage. Be careful not to push the food or object deeper into the airway, which can happen easily in young children.
- **Begin cardiopulmonary resuscitation (CPR)** if the object remains lodged and the person doesn't respond after you take the above measures. The chest compressions used in CPR may dislodge the object. Remember to recheck the mouth periodically.

To clear the airway of a choking infant younger than age 1 year:

- **Assume a seated position and hold the infant face down** on your forearm, which is resting on your thigh.
- **Thump the infant gently but firmly** five times on the middle of the back using the heel of your hand. The combination of gravity and the back blows should release the blocking object.
- **Hold the infant face up on your forearm** with the head lower than the trunk if the above doesn't work. Using two fingers placed at the center of the infant's breastbone, give five quick chest compressions.
- **Repeat the back blows and chest thrusts** if breathing doesn't resume. Call for emergency medical help.
- **Begin infant CPR** if one of these techniques opens the airway but the infant doesn't resume breathing.



Fig. 5.4 : First aid management for choking

5.6 FIRST AID/EMERGENCY MANAGEMENT AND STABILISATION CARE IN FITS

Fits or convulsion is a series of muscular spasms caused by a spontaneous outburst of electrical activity in the brain.

Causes of fits or convulsion:

- Fever over 102° F in children under age of 5 years
- Head Injury
- Brain tumors
- Dehydration and electrolyte imbalance
- Degenerative changes
- Hormonal disorders

First aid/ emergency management and stabilisation of victim with fits/ convulsions:

1) **Stay calm**.
2) **Look around** - If the person is in a dangerous place? Move the victim at safer place. If not, don't move them. Move objects like furniture away from them.
3) **Note the time** the seizure starts.
4) **Stay with them**. If they don't collapse but seem blank or confused, gently guide them away from any danger. Speak quietly and calmly.
5) **Cushion their head** with something soft if they have collapsed to the ground.
6) **Don't put anything in their mouth** to prevent aspiration.
7) **Check the time again**. If a convulsive (shaking) seizure doesn't stop after 5 minutes, seek for medical help.

8) **After the seizure has stopped**, put them into the recovery position and check that their breathing is returning to normal. Gently check their mouth to see that nothing is blocking their airway such as food or false teeth. If their breathing sounds difficult after the seizure has stopped, call for an ambulance or medical help.

9) **Stay with them until they are fully recovered**.

10) **Transport victim to nearest health care facility for further management**.

5.7 FIRST AID/EMERGENCY MANAGEMENT AND STABILISATION CARE IN POISONING

Poisoning is a condition which resulted from the consumption or introduction of harmful substances damaging the organ of digestion or if absorbed into the blood may affect the vital organs and even kill a person.

Poisoning is injury or death due to swallowing, inhaling, touching or injecting various drugs, chemicals, venoms or gases.

Sign and symptoms:

Poisoning signs and symptoms can mimic other conditions, such as seizure, alcohol intoxication, and stroke and insulin reaction. Signs and symptoms of poisoning may include:

- Burns or redness around the mouth and lips
- Breath that smells like chemicals, such as gasoline or paint thinner
- Vomiting
- Difficulty breathing
- Drowsiness
- Confusion or other altered mental status
- Having difficulty breathing or has stopped breathing
- Uncontrollably restless or agitated
- Having seizures
- Known to have taken medications, or any other substance, intentionally or accidentally overdosed (in these situations the poisoning typically involves larger amounts, often along with alcohol).

First aid/emergency management and stabilisation of victim with poisoning:

- **Swallowed poison.** Remove anything remaining in the person's mouth. Allow person to vomit out everything ingested. If the suspected poison is a household cleaner or other chemical, read the container's label and follow instructions for accidental poisoning.
- **Inhaled poison.** Get the person into fresh air as soon as possible.
- If the person vomits, turn his or her head to the side to prevent choking.
- Begin CPR if the person shows no signs of life, such as moving, breathing or coughing.

- Have somebody gather pill bottles, packages or containers with labels, and any other information about the poison to send along with the ambulance team.
- Transport victim to nearest health care facility as soon as possible.

5.8 FIRST AID/EMERGENCY MANAGEMENT AND STABILISATION CARE IN BITES

Bites and stings are one form of poisoning and common in infants and children.Animal bites and insect stings may lead to minor symptoms like pain and swelling to a life threatening shock, requiring immediate and urgent attention.

To pierce the skin with the teeth, fangs, or mouthparts and to sting with a stinger.

Or

To grip, cut into, or injure something with or as if with the teeth and causes stinging effect.

Common bites are dog bite and snake bite. Let us discuss these bites and management as given below:

i) **Dog bite**

Sign and symptoms:

- Initial 1– 4 days patient suffers from prodromal symptoms of fever, myalgia, headache, easy fatigue ability, sore throat, and changes in mood.
- Parasthesias or fasciculations at the site of bite.
- With advancement in infection patient becomes intolerant to noise, bright light or a cold draught of air.
- Aerophobia or fear of air may present.
- Mental changes like fear of death, anger, irritability and depression shown by patient.
- The characteristics symptoms of hydrophobia may be found even at the site or sound of water due to spasm of muscles or deglutition.
- The patient may die abruptly during convulsions or may pass to the stage of paralysis or coma.

First aid/ emergency management and stabilisation of victim with dog bite:

- Clean the wound immediately thoroughly with soap and running water.
- Encourage bleeding from the wound: if it is not already bleeding, gently squeeze the wound to encourage it to bleed.
- Bleeding will help prevent bacteria entering into the wound.
- Try to keep the injured area elevated.
- Apply a sterile bandage to the wound.
- Apply antibiotic ointment to the injury every day to prevent infection.
- If deep wound is there, transport victim to nearest health care facility for further management and anti-rabies vaccination.

ii) Snake bite

A bite from a venomous snake can be deadly, and should always be treated as a medical emergency. Even a bite from a harmless snake can be serious, leading to an allergic reaction or an infection. Venomous snake bites can produce an array of symptoms, including localised pain and swelling, convulsions, and nausea–even paralysis.

Sign and symptoms:

- two puncture wounds
- swelling and redness around the wounds
- pain at the bite site
- difficulty breathing
- vomiting and nausea
- blurred vision
- sweating and excessive salivation
- numbness in the face and limbs

First aid/ emergency management and stabilisation of victim with snake bite:

- Prevent a second bite or a second victim. Do not try to catch the snake as this can lead to additional victims or bites. Snakes can continue to bite and inject venom with successive bites until they run out of venom.
- Move the person beyond striking distance of the snake.
- Have the person lie down with wound below the heart.
- Keep the person calm and at rest, remaining as still as possible to keep venom from spreading.
- Cover the wound with loose, sterile bandage or cloth.
- Wrap a bandage or cloth at the bite site and apply pressure tourniquet the limb above the bite site to prevent circulation.
- If possible clean wound with soap and running water.
- Transport victim to nearest health care facility for further management as soon as possible.

Do not

- Cut a bite wound
- Attempt to suck out venom
- Apply, ice, or water
- Give the person alcohol or caffeinated drinks or any other

iii) Stings

Most insect bites and stings are not serious and will get better within a few hours or days. But occasionally they can become infected, cause a severe allergic reaction (anaphylaxis) or spread serious illnesses such as Lyme disease and malaria.

To pierce or wound painfully with a sharp-pointed structure or organ, as that of certain insects.

Or

A small sharp-pointed organ at the end of the abdomen of bees, wasps, ants, and scorpions, capable of inflicting a painful or dangerous wound by injecting poison.

Sign and symptoms of insect bites and stings:

- Insect bites and stings will usually cause a red, swollen lump to develop on the skin. This may be painful and in some cases can be very itchy.
- The symptoms will normally improve within a few hours or days, although sometimes they can last a little longer.
- Some people have a mild allergic reaction and a larger area of skin around the bite or sting becomes swollen, red and painful. This should pass within a week.
- Occasionally, a severe allergic reaction can occur, causing symptoms such as breathing difficulties, dizziness and a swollen face or mouth. This requires immediate medical treatment.

First aid/emergency management and stabilisation of victim with insect bite and stings:

- Remove the sting or tick if it's still in the skin.
- Wash the affected area with soap and water. (Fig. 5.5)
- Apply a cold compress (such as a flannel or cloth cooled with cold water) or an ice pack to any swelling for atleast 10 minutes.
- Raise or elevate the affected area if possible, as this can help reduce swelling.
- Avoid scratching the area, to reduce the risk of infection.
- Avoid traditional home remedies, such as vinegar and bicarbonate of soda.
- If condition is worse transport victim to the nearest health care facility as soon as possible.



Fig. 5.5: First aid management for insect bite

5.9 LET US SUM UP

In this unit we dealt with the first aid treatment and management of common emergencies vis-à-vis fainting, bleeding, shock, burns, chocking, fits, poisoning and bites. The first aid measures for stabilising the patient who is brought to your clinic have been discussed.

5.10 ACTIVITY

1) A client has been brought to your centre having fits.
   a) Assess the condition of the patient
   b) Give first aid treatment for fits
2) What first aid measures you will take for a patient who has been brought by their relatives have more than 50% burns by flame/fire.
3) Assess atleast one person each for causes, signs and symptoms and provide first aid treatment for fainting, chocking, poisoning and bites.

UNIT 6 GERIATRIC AND PALLIATIVE CARE

Structure

6.0 Introduction

6.1 Objectives

6.2 Concepts of Geriatric and Palliative Care

6.3 Health Problems of the Aged

- 6.3.1 Physical Problems
- 6.3.2 Psychological Problems
- 6.3.3 Social Problems
- 6.3.4 Economical Problems

6.4 History and Physical Examination

- 6.4.1 Preparation and History Taking
- 6.4.2 Assessment of the Elderly
- 6.4.3 Investigations

6.5 Domains of Palliative Care in Elderly

- 6.5.1 Symptom Management
- 6.5.2 Communication
- 6.5.3 Physical Exercise
- 6.5.4 Nutrition
- 6.5.5 Depression
- 6.5.6 Anxiety
- 6.5.7 Psychosocial and Spiritual Realms
- 6.5.8 Grief and Bereavement

6.6 Barriers to Palliative Care for the Elderly

6.7 Preventive Health Care of the Elderly

6.8 Welfare Schemes and Services by the Government

6.9 Let Us Sum Up

6.10 Activity

6.11 References

6.0 INTRODUCTION

We have already discussed in details about problems of elderly, factors affecting and signs and symptoms and treatment in theory Course 1, Block 4, Unit 6 also.

An elderly person becomes susceptible to both the acute and chronic health problems including heart diseases, cerebrovascular diseases, respiratory diseases and cancer etc. Women are more likely to suffer from several chronic conditions such as dementia, osteoporosis and arthritis etc. Most of the time, many older people suffer from more than one disease.

This unit shall focus more on care for elderly in general and palliative care in particular. Palliative care is an interdisciplinary approach that focuses on preventing and relieving suffering. It supports the best possible quality of life for patients and their families

facing serious and incurable illness. It involves the coordinated efforts of various disciplines such as doctors, nurses, therapists, social workers, clinical psychologists, dietitians, pastoral care workers and volunteers. It intends neither to hasten nor postpone death.

6.1 OBJECTIVES

After completing this unit, you should be able to:

- define palliative care;
- discuss the concept of palliative care in relation to elderly person;
- assess the problems of elderly;
- apply the principles of palliative care while caring for elderly person;
- provide need based care to elderly persons; and
- discuss the domains of palliative care in elderly.

6.2 CONCEPTS OF GERIATRIC AND PALLIATIVE CARE

Let us now learn the definition, aims, need and risk among geriatric population, concept and principles of palliative care as given below:

Geriatrics

The care of aged is called geriatrics or gerontology. People more than 60 yrs are considered elderly. Old age is not a disease but a normal and inevitable biological phenomenon. Aging is a progressive and generalised impairment of body functions resulting in, loss of adaptive responses to stress and increasing the risk of age-related diseases

Aims of Geriatric Care

The aims of caring for elderly includes:

- Maintenance of health in old age by high levels of engagement and avoidance of disease
- Early detection and appropriate treatment of disease
- Maintenance of maximum independence consistent with irreversible disease and disability
- Sympathetic care and support during terminal illness

Need for Geriatric Care

It is important for you to understand why we should give consider about taking care of elderly, which includes following factors:

- Elderly population will keep on rising due to advancing medical technology.
- Diseases present atypically and at an earlier stage.
- Often a multi-organ system involvement
- Worsening of pre-existing diseases are frequent.

- Burden over the health care system
- Burden over the Nations economy

Risk of Geriatrics

You should also know the following risk to which elderly are prone for:

- infections
- injuries
- psychological problems
- degenerative disorders
- increased risk for disease
- increased risk of disability
- increased risk of death

Concept of Palliative Care

Older people are more likely to have complex/ multiple medical problems of varying severity and disabilities. Even minor problems may have a greater psychological impact in older people. They are usually at greater risk of adverse drug reactions, mental confusion, problems with bladder and bowel control, sight and hearing difficulties and dizziness all greatly increase with age. They need care that requires partnership and collaboration between different groups. Palliative care should be offered according to the needs of the patient regardless of clinical stage in an incurable illness. For example, an elderly patient facing a newly diagnosed Parkinson's disease will probably require intensive counselling and support. Effective care must reach into the hospital, into people's home and into the nursing and residential homes within the community.

Principles of Palliative Care

Principles of Palliative Care are universal. These are as given below:

Cancer is a disease of the elderly. Hence, common problems are: intellectual impairment, incontinence, instability and immobility. These problems should be kept in mind while taking care of elderly.

Nutritional needs of elderly should be planned as per individual persons condition, taste and duration of illness.

A holistic approach is the fundamental principle in which a "whole person" is taken care for rather than "organ specialist" approach.

Work together in a team to provide quality care to the patient.

The importance of community care includes having more of hospice, volunteers, day home palliative care services so that patient is with his/her near and dear ones in last journey of life adding life to years when years cannot be added to life. As improving quality of life is the ultimate goal.

Death and dying and associated ethics are important issues.

6.3 HEALTH PROBLEMS OF THE AGED

The health problems of the aged can be discussed under four areas – physical problems, psychological problems, social problems and economical problems.

6.3.1 Physical Problems

Let us now go through the assessment check list to identify physical problems of elderly persons as given below:

Assessment check list to identify physical problems of elderly

Assessment of Physical Problems	Effects on Elderly	Remarks
• Cataract • Glaucoma • Retinopathy	Blindness	
• Nerve deafness • Conductive hearing loss	Deafness	
• Fibrositis, • Osteoarthritis, • Rheumatoid arthritis, • Myositis, • Neuritis, • Gout, • Spondilitis of spine	Mobility problems	
• Dementia, • Parkinsons disease, • Alzheimer's disease • Atherosclerosis, • Thrombus formation, • Myocardial Infarction, Hypertension	Slow activities Syncope Heart failure Stroke	
• Chronic bronchitis, • Asthma, • Emphysema	RTI's and pneumonias	
• Senile wrinkles, • Scaly lesions, • Scaly dermatosis, • Blistering diseases, • Neoplastic disorders	Wrinkling Alopecia and baldness	
• Peptic ulcer • Constipation • Ulcerative colitis • Carcinoma of GIT	Poor absorptionand deficiency states Hepatic failure	
• Frequency and urgency of micturation • Nocturia • Dysuria • Enlargement of prostate	Accumulation excretion of toxins in the bodyUTI Frequency	

6.3.2 Psychological Problems

Psychological problems among elderly patients includes they are less willing to talk about the problem. Hence, you must pay attention to these symptoms : anxiety, physical discomfort and inability to adapt to a new lifestyle, lack of Sleep, lack of Interest, Guilt feeling ("Are you a burden to others?"), lack of Energy, Concentration, Appetite, Psychomotor changes, Suicidality ("Do you wish you could die?").

In depression you can observe the following symptoms and signs of depression among elderly. Cognitive Psychomotor Retardation, Psychomotor Agitation which can lead to suicide and deliberate self harm, Personality disorder, Schizophrenia, Delirium Anxiety Depression, Alzheimer's disease etc.

6.3.3 Social Problems

The social problems include abuse, dependency, insecurity and rehabilitation.

Abuse refers to ill-treatment of an elderly person. The abuse may be of a physical nature, it may be psychological (involving emotional or verbal aggression), or it may involve financial or other material maltreatment. It is a very sensitive issue and requires a high index of suspicion.

Abuse is generally having the following categories:

- **Physical abuse:** dependency, physical, financial, functional and other dependency has a major affect on the self esteem of the old.
- Psychological abuse,
- Financial abuse,
- Sexual abuse.

Sexual abuse: Non-consensual sexual contact of any kind with the older person.

Financial or material abuse: The illegal or improper exploitation or use of funds or resources of the older person.

Neglect: The refusal or failure to fulfill a care giving obligation. This may or may not involve a conscious and intentional attempt to inflict physical or emotional distress on the older person.

Insecurity: Insecurity of being abandoned by their children.

Rehabilitation: This is one of the main problem of old age.

6.3.4 Economical Problems

Total economical dependence on children for their daily needs and no or inadequate source of income. Financial abuse which leads to illegal or improper exploitation or use of funds or resources of the older person.

6.4 HISTORY AND PHYSICAL EXAMINATION

History taking and physical examination are important aspects before planning care for the elderly.

6.4.1 Preparation and History Taking

- Wash your hands to prepare for the history taking and physical examination.
- Go through the records before seeing the patient.
- Think about the timing i.e how much time will be taken for history taking and examination.
- Use both non-verbal as well as verbal communication.
- Take care of your manners, physical position with regards to the patient's, and your body language as this contribute to the outcome.
- Be relaxed and smile to radiate confidence.
- Apologise to the patient if there is a long waiting period.
- Avoid writing whilst the patient is talking to you. If required to note down, let the client know the purpose of recording the findings/history.
- Be careful while extracting information Clients may be anxious and may manifest in many ways: the quiet patient, the apparently over-confident patient, the angry patient, and the returning patient.
- Stay focused during the interview for recording history.
- Record past history of illness .
- Note if person is on any medication in the present.
- Family history is important as many conditions do have a genetic component, including coronary heart disease (CHD), diabetes, atopic eczema, autoimmune disease, glaucoma and some cancers.
- It is important to know the social history as to who takes care of them.
- Occupation may be very relevant to the aetiology of the disease and its management. It also indicates the person's level of education and hence ability to comprehend certain issues.

6.4.2 Assessment of the Elderly

Aims of assessment of the elderly includes:

- Providing quality care up to the maximum satisfaction of the user
- Maintaining the elderly active
- Cost effective use of services

Protocol for each system should be followed. Competence in assessment or general examination is key to elicit all information. Refer Unit 3 of this Block for further details to identify the problems of the elderly. Use an appropriate assessment form covering examination of the following areas given below:

- cardiovascular system, including auscultation of the heart.
- respiratory system.
- abdomen.
- hernia and lumps in the groin and scrotum.
- lumps.

- Neurological history and examination.
- Tender, hot swollen joints.
- Gynaecological history and examination.
- Breast lumps and breast examination.
- Peripheral pulses.
- ENT and Eye examination.
- Mental state examination

6.4.3 Investigations

The objective of the investigations is to improve the quality of life. Under or over investigations to be avoided.The health team should be aware of the age related variables while interpreting the results.

Usually Non-invasive tests are preferred than invasive. Investigations are done to exclude or confirm a diagnosis, reassure the patient and satisfy the priorities and local protocols of the hospital/health care facility to whom you may refer the patient.

6.5 DOMAINS OF PALLIATIVE CARE IN ELDERLY

Let us now go through the major domains for taking care of the elderly such as : Physical domain includes pain and symptom management, comfort, psychological and social problems which includes communication, clear information and a coherent package of care. Keeping these domains to care can help the elderly to lead a quality and meaningful life.

6.5.1 Symptom Management

You have to deals with problems such as bladder and bowel control, sight and hearing difficulties and dizziness all increases with age, limited activity, fatigue, physical discomfort, pain, dyspnea, constipation, nausea are the most commonly reported symptoms by the elderly people. The general management of the most common symptoms in older adults is discussed as given below:

Pain management

Pain is a common problem for older adults which lead to:

- depression,
- decreased socialisation,
- insomnia,
- gait instability, and
- loss of functional capacity.

> **Remember:**
>
> In non-cancer conditions, it has been increasingly shown that the judicious use of opioids for pain can be safe and effective.

Similar to cancer pain the WHO analgesic ladder can be followed (Table). It provides general framework for choosing and approach to pain management in chronic illness.

Table 6.1: Pain Management as per WHO analgesic Ladder

Degree of Pain	Medication	Precaution
Mild pain	Acetaminophen, non-steroidal anti-inflammatory medications, less commonly aspirin and tramadol	Should not be given on an empty stomach because it can lead to gastritis. Should ask for history of gastritis/ peptic ulcer in which case these should be avoided. Avoid overdose to prevent end organ damage.
Severe pain	Opioids such as morphine, hydromorphone, fentanyl, and oxycondone.	Opioids have no ceiling dose. Dosing is guided by past exposure to opioid medications and systemic dose escalation is done based on pain.

The starting point of mild pain is acetaminophen, non-steroidal anti-inflammatory medications, and less commonly aspirin and tramadol are recommended. Medications in both of these categories have ceiling doses based on maximum daily doses to prevent possible end-organ damage.

Non-pharmacologic treatments

For mild, moderate, and severe pain categories, consideration of non-pharmacologic treatments like

- massage,
- aromatherapy,
- music therapy, and
- adjuvant medications like anticonvulsants, antidepressants, and steroids, and interventional procedures, if indicated, is recommended. Hot and cold fermentation for joint pain have also proven to be beneficial in elderly people.

Assessment and care for Dyspnea

Dyspnea is a subjective discomfort while breathing. It can vary from mild to severe with activity. It can be commonly assessed by history of shortness of breath, trouble catching ones' breath and chest tightness. Ask for if breathing exacerbated by fear, anxiety and depression. The underlying cause of dyspnea should be treated. Hence, take thorough history of the patient.

Treatment and care for Dyspnea

Oxygen, opioids and anxiolytics are the main components of dyspnea management. Oxygen should be used therapeutically when patients exhibit hypoxemia with appropriate titration. In patients without hypoxemia, oxygen can also be used for symptomatic relief. Airflow from directed fans and from open windows across the face is thought to be quite helpful for some patients.

Anxiolytic medications should also be considered in the management of dyspnea, particularly short-acting benzodiazepines like lorazepam and alprazolam. Given the potential side effects of sedation and confusion, especially in geriatric patients, these medications should also be used with caution. In the case of refractory dyspnea or in

patients with significant components of anxiety, however, titration of initial low-dose short-acting benzodiazepines may be appropriate.

Elevating the head end side of the bed at 30 to 45 degree may be helpful in relieving the symptoms in elderly people.

Assessment and care in Constipation

Constipation is common in advanced illness and its prevalence increases with age. Assessment includes asking for factors leads to constipation in elderly people such as:

- being immobile or remaining in bed due to various causes,
- side effect of certain medications,
- lack of appetite,
- not eating high fiber foods,
- poor fluid intake,
- overall weakness,
- difficulty in ingesting the food,
- tumors or masses blocking the intestines,
- haemorrhoids that cause pain when having a bowel movement, and
- difficulty reaching a toilet or commode.

Constipation can cause nausea, vomiting, pain, and a general feeling of not being well.

Treatment and Care

It is very important to prevent it and if it occurs to relieve it effectively at the earliest. Screening and assessment of bowel function should be made a routine part of all the elderly patients. All patients on opioids need to receive a prophylactic bowel regimen of stool softener and stimulant laxative. The other preventive measures for constipation include

- increased fiber in the diet,
- increased fluid intake,
- making toileting easily accessible either by the patient or by quick response by the caregiver and encouraging the patient to be as active as is possible,
- sometimes, the patient may be given suppositories or enemas to try to stimulate the bowels.

Nausea

Nausea and vomiting are commonly caused by multiple factors like the disease process with which the elderly may be suffering from or the side effects of various therapies. So, it is important to assess the likely cause before treating it.

Assessment and care for Fatigue

Fatigue hits everyone at some time or another. During assessment, ask for causes such as

- stress,
- lack of sleep,

- poor diet, or
- too much work.
- In addition to the above causes, patients receiving palliative care may have fatigue from the illness itself or the side effects of the treatment can also lead to fatigue.

Fatigue can affect a patient both physically and psychologically. Physically, someone who is fatigued may not have the energy to physically participate in his or her own care such as eating or drinking by self. Sometimes, the patients with fatigue may avoid spending time with family and friends, and can easily become depressed. Someone who is fatigued may have a very hard time sleeping which further increases tiredness.

If someone isn't getting a good, proper rest, this could be helped by prescribing sleep aids, encouraging good sleep habits, adjusting medications during the day that don't result in excessive napping, and minimising the number of disturbances to the patient throughout the night.

6.5.2 Communication

Communication between health care professionals and patients is a cornerstone of palliative care. Communication is an ongoing process for patients who have chronic and acute illnesses. Effective communication between health care provider and patients is associated with range of health outcomes including improvement in psychosocial health, general symptoms and better control of pain. The ability of the health care professionals to communicate effectively with families, and involve them in decision making, consistently emerges as an important contributor to their satisfaction with care.

Ideally, discussions concerning wishes and goals should start early, by a primary provider, and before patients are too ill or impaired to make decisions. As illness advances, discussions can focus on broad goals; treatment objectives should stay consistent with these goals by weighing the burden and benefit of each intervention.

6.5.3 Physical Exercise

Usually people who are very old will probably not be moving around very much. So, sometimes, the simple acts of getting up in a chair to sit by a window, having a shower, or being brought outside can provide enough exercise to stimulate a good refreshing rest. As per the capability of the individual, he/she should be motivated to do the active range of motion exercises.

6.5.4 Nutrition

The aged people usually have poor appetite. Sometimes because of certain disease process, s/he may have no appetite or may want to eat but may have lost the sense of taste. A lack of taste reduces the enjoyment that someone gets from eating or drinking favourite foods. Ill-fitting artificial denture could be another problem.

The elderly people should be encouraged to eat. Offer the food keeping in mind their likings and disliking. Serve the food in small amounts but frequently and in an attractive manner. Give enough time for them to finish the food. There should not be any hurry-burry. The consistency of food may be changed as per the need. The elderly should be encouraged to have their food in the dining room along with other family members. The drugs leading to side effects must be reviewed. Some appetisers may be added. Refer theory Course 1, BNS-41, Block 2, Unit 3 for more details.

6.5.5 Depression

Many people who are depressed find themselves feeling very fatigued. It is not unusual for someone with depression to sleep for whole of the day. The feeling of exhaustion is very physical although the cause may be psychological. Loneliness might be the major cause of depression amongst elderly. Try to find out the reason for depression. Some of these people do well with anti-depressants and/or with counselling.

6.5.6 Anxiety

Anxiety can be a tiring state. Someone who is anxious is often in a heightened state, waiting for something bad to happen or fretting over what has happened. As with depression, some of the elderly people do well with anti-anxiety medications and/or with counselling.

6.5.7 Psychosocial and Spiritual Realms

Addressing the psychosocial and spiritual needs of elderly patients and their families is a core component of palliative care. Patients may experience suffering that is not physical. Non-physical suffering can take a toll. For some patients, concerns like guilt, hopelessness, fear and loss may lead to significant distress, even contributing to worsened physical symptoms (i.e. pain and anxiety). Loved ones may manifest similar distress. Supporting families and care givers with tolerant listening and appreciation by the organised service providers is also crucial to help them fight the depression and anxiety associated with an ailing dear one.

6.5.8 Grief and Bereavement

When you are involved in taking care of dying person, you must identify those bereaved persons at high risk for complicated grief and those who need treatment. More over these persons can be given psychological support by sympathetic and respectful attitude from family members, friends and neighbours.

6.6 BARRIERS TO PALLIATIVE CARE FOR THE ELDERLY

It is also very important to know the barriers so that you take measures before hand and help the elderly in providing quality care.

Certain barriers to palliative care for elderly exist. We need to overcome these in order to provide quality care to the elderly.

- A lack of awareness and knowledge of the scale of problem of the elderly.
- A lack of health policies for palliative care, both for older people and for the diseases they commonly suffer from.
- Faulty assumptions about the needs of older people and their desire or ability to cope without special forms of help.
- Failure to implement simple proven effective measures.
- The complexity of linking care packages across different settings and between health and social support and care.
- A lack of resources and outdated pattern of care and health systems of delivery.

6.7 PREVENTIVE HEALTH CARE OF THE ELDERLY

The role of prevention in geriatrics is to delay the onset of age-related de-compensatory problems of body functions. It includes- Primary prevention, Secondary prevention, and Tertiary prevention.

Primary prevention

Keeping in mind the demographic profile, the following areas need atterction.

Calcium and Vitamin- D supplementation. Osteoporosis prevention,Tetanus. Pneumococcal, Influenza Immunisation, Easy and safe access to water. Low level switches, Railing/holding bars in bathrooms, Flat shoes, Bright lighting , Keep the floor dry, Removal of obstacles, Burns accidents and falls should be prevented adequate sleep, and exercise.

Secondary prevention – Screening for early detection and treatment is an important step in secondary prevention of disease and disability. Screening helps in early detection of modifiable risk factors and their adequate management. Areas are eyes /ears, nutritional deficiency states, infections, cancers, drug adverse effects, dental problems, hyper/hypotension, diabetes mellitus.

Tertiary prevention: Rehabilitation team includes; a physician, a physiotherapist, an occupational therapist, a speech and language therapist, a psychiatrist, a dietitian, a nurse and a social worker. Rehabilitation is a problem solving process focused on the patients functional abilities. It deals with rehabilitation and caregiver support.

Interventions in rehabilitation include soft interventions like listening, encouragement. counselling. Education, advice, speech and language therapist, and Hard interventions are aids and adaptation, occupational therapy, physiotherapy and drugs.

Other areas that aid in preventive rehabilitation include Counselling by the caregiver, hospitalisation in case of chronic illness, Organisation of "day care centers", Physicians support, Social attitude and Supporting the caregiver.

Let us summarise the aspects for prevention as given below:

Primordial prevention

Pre geriatric care

Primary prevention

Health education

Exercise

Secondary prevention

Annual medical check-up

Early detection (Universal approach, Selective approach)

Treatment

Tertiary prevention

Counselling and Rehabilitation

Welfare activities (Sanjay Niradhar Yojana, Vridhashrama etc.)

Chiropody services to improve quality of life of elderly.

Cultural programme

Old age club

Meals-on wheel service

Home help

Old age home

6.8 WELFARE SCHEMES AND SERVICES BY THE GOVERNMENT

The welfare schemes and services that have been provided for the elderly group are listed below:

Section	Content/Text
Section 125(1) (d)	If any person having sufficient means neglects or refuses to maintain his father or mother, unable to maintain himself or herself, a Magistrate of the first class may, upon proof of such neglect or refusal, order such person to make a monthly allowance for the maintenance of his wife or such child, father or mother, at such monthly rate not exceeding five hundred rupees in the whole, as such Magistrate thinks fit, and to pay the same to such person as the Magistrate may from time to time direct. Laws in India to protect the old people
Section 125(3)	If any person so ordered fails without sufficient cause to comply with the order, any such Magistrate may, for every breach of the order, issue a warrant for levying the amount due in the manner provided for levying fines, and may sentence such person, for the whole or any part of each month's allowance remaining unpaid after the execution of the warrant, to imprisonment for a term which may extend to one month or until payment if sooner made

Sl. No	Name of the Ministry/Dept	Name of the Facilities/Benefits given to Senior Citizen
1	Ministry of Social Justice	Ministry of Social & Empowerment Justice & Empowerment announced the National Policy on Older Persons which seeks to assure older persons that their concerns are national concerns.The Ministry is also implementing following schemes for the benefit

Sl. No	Name of the Ministry/Dept	Name of the Facilities/Benefits given to Senior Citizen
		of Senior Citizens: a) The Scheme of Assistance to Panchayati Raj Institutions/Voluntary Organisations Self Help Groups for Construction of Old Age Homes/multi-service centres for older persons. Under this Scheme, one time construction grant for old age homes/multi-service centre is provided.b) An Integrated Programme for Older Persons has been formulated by revising the earlier scheme of "Assistance to Voluntary Organisations for Programmes relating to the Welfare of the Aged". Under this Scheme, financial assistance up to 90% of the project cost is provided to NGOs for establishing and maintaining old age homes, day care centers, mobile medicare units and to provide non-institutional services to older persons.
2	Ministry of Rural Development	Under the National Old Age Pension Scheme, Central Assistance of Rs. 75/- p.m. is granted to destitute older persons above 65 years. This Scheme has been transferred to the State Plan w.e.f. 2002- 03. 2.Under the Annapurna Scheme, free food grains (wheat or rice) up to 10 kg per month are provided to destitute older persons 65 years or above.
3	Ministry of Social Justice & Empowerment	Ministry of Social Justice & Empowerment is the nodal Ministry responsible for welfare of the Senior Citizens. It has announced the National Policy on Older Persons covering all concerns pertaining to the welfare of older persons. The National Policy on Older Persons recognises a person aged 60 years and above as a senior citizen.
4	Ministry of Finance	Income tax rebate upto an income of Rs. 1.85 lakh p.a. Higher rates of interest on saving schemes of senior citizens. A Senior Citizens Savings Scheme offering an interest rate is 9% per annum on the deposits made by the senior citizens in post offices has been introduced by the Government through Post Offices in India doing savings bank work
5	Ministry of Road Transport and Highways	i) Reservation of two seats for senior citizens in front row of the buses of the State Road Transport Undertakings. ii) Some State Governments are giving fare concession to senior citizens in the State Road Transport Undertaking buses and are introducing Bus Models, which are convenient to the elderly
6	Ministry of Health & Family Welfare	Separate queues for older persons in hospitals for registration and clinical examination.

Sl. No	Name of the Ministry/Dept	Name of the Facilities/Benefits given to Senior Citizen
7	Department of Telecommunications	i) Faults/complaints of senior citizens are given priority by registering them under senior citizens category with VIP flag, which is a priority category. ii) Senior citizens are allowed to register telephone connection under N-OYT Special Category, which is a priority category
8	Ministry of Railways	a) Indian Railways provide 30% fare concession in all Mail senior citizens aged 60 years and above. b) Indian Railways also have the facility of separate counters for Senior Citizens for tickets. c) Ramps for wheel chairs movement are available at the entry to important stations. d) Specially designed coaches with provisions of space for wheel chairs, hand rail and specially designed toilet for handicapped persons have been introduced.
9	Ministry of Civil Aviation	1. Indian Airlines is providing 50 per cent Senior Citizen Discount on Normal Economy Class fare for all domestic flights to Indian senior citizens who have completed the age of 65 years in the case of male senior citizens and 63 years in the case of female senior. 2. Air is offering discount to senior citizens of 60 plus on flights.
10	Ministry of Consumer Affairs	i) Under the Antyodaya Scheme, Food and Public the Below Poverty Line (BPL) families which also include older Distribution persons are provided food grains at the rate of 35 kgs. per family per month. The food grains are issued @ Rs.3/- per kg. for rice and Rs.2/- per kg. for wheat. (ii) Under the Annapoorna Scheme being implemented by the States/UT Administration, 10 kgs. of food grains per beneficiary per month.
11	MCD (municipal cooperation department)	(i)MCD, has opened a separate of India) counter to facilitate the senior citizens for submission of property tax bills. (ii) A rebate of 30% of the property tax due on the covered space of a building up to one hundred sq. mtrs. of the covered space has been allowed by the corporation in the case of any self-occupied residential building singly owned by a man who is 65 years or more in age.
12	Miscellaneous	(i) Courts in the country accord priority to cases involving older persons and ensures their expeditious disposal. (ii) Under the Old Age Pension Scheme, monthly pension is given at variable rates to the destitute old by various State Governments/UT Administrations.

HELPAGE INDIA

Helpage India supports the following programmes to make life easier for older people:

1) Free cataract operation
2) Mobile Medicare units
3) Income generation and micro-credits
4) Old age home and day care centers
5) Adopt a grant parents
6) Disaster mitigation

6.9 LET US SUM UP

In this unit we have discussed concept of palliative care and domains of care for elderly persons.

Many older people live in well good health into their old age, but there remains a significant number for whom growing old includes the development of complex physical and social needs, requiring both health and social care. However, this is also a fact that the older people face prolonged courses of chronic diseases and gradual decline. Palliative care focuses more on the quality of life of patients and relatives than on prolonging life. Thus, as a health care professionals you need to be expert in the domains of palliative care so that these patients and their families can receive the best quality of care while they are still living full lives and later as they approach the end of life. At the end of the unit we discussed certain barriers which you may overcome so that you are able to provide adequate care to the elderly person in need.

6.10 ACTIVITY

1) Prepare an assessment form for elderly patients who attend the clinic based on the guidelines of assessment.
2) Assess 10 male and 10 female elderly patients.
3) Prepare a health education programme for the elderly group in the community emphasising on preventive aspects and welfare activities and schemes provided by the Government.

6.11 REFERENCES

1) Singh A, Kaur S, Kishore J. Comprehensive textbook of Elderly Care. Century Publications, New Delhi, 1st Edition 2014. ISBN: 978-81-88132-52-2.
2) http://www.indiatogether.org/2010/mar/hlt-palliate.htm, Retrieved on 24 Dec 2010.
3) http://www.indiatogether.org/2010/mar/hlt-palliate.htm. Retrieved on 24 Dec 2010.
4) http://www.medhealthwriter.com/main/page_top_10_myths_of_palliative_care.html. Retrieved on 27 Dec 2010.
5) National Institute of Social Defence. Ministry of Social Justice and Empowerment Govt. of India. Jan 2008. pp 1.
6) Tara F. Bishop, MD, and R. Sean Morrison, pain and symptom management for

7) Tara F. Bishop, R. Sean Morrison. Geriatric Palliative Care—Part II: Communication and Goals of Care. Clinical Geriatrics 2007; 15: 27-32

8) Davies E, Higginson IJ, eds. The solid facts: Palliative care. Geneva: World Health Organization, 2004.

9) Davies E, Higginson IJ. Better Palliative care for older people. Geneva: World Health Organization, 2004.

10) AGS Panel on Persistent Pain in Older Persons. The management of persistent pain in older persons. J Am Geriatr Soc 2002; 50(6 suppl):S205-S224.

11) Caird FI. The importance of psychological symptoms in Parkinson' disease. Age, Ageing 1999:28:335-336.

12) Famcombe M. Chater S. Gillis A. The use of nebulised opioids for breathlessness: a chart review. Palliat Med 1994;8:306-12.

13) Graziotti PJ, Goucke CR. The use of opioids in patients with chronic non- cancer pain. Management strategies. Med J Aust 1997:167: 30-34

14) Higginson I J. Who needs palliative care'? Jour of Roy Soc of Med 1998:91:563-4.

15) Hobaon P, Holden A. Meara J. Measuring the impact of Parkinson's disease with the Parkinson's Disease Quality of Life questionnaire Age Ageing 1999:28:341-346.

16) Light RW, Muro JR, Sato RI, Stansbury DW, Fischer CE. Brown SE. Effects of oral morphine on breathlessness and exercise tolerance in patients with chronic obstructive airways disease. Am Rev Respir Dis 1989:139: 126-33.

17) McCarthy M, Addington-Hall JM. Altmann D. the experience of dying with dementia: a retrospective study. Int J Geriatr Psy 1997:12:404-9.

18) Moulin DE, IezziA, Xmireh R et al. Randomised trial of oral morphine for chronic non-cancer pain. Lancet 1996:347:143-7.

19) National Cancer Control Programme: Policies and Managerial guidelines, 2nd ed. Geneva, World Health Organization, 2002.

20) Sepulveda C. Palliative care: the World Health Organization's global perspective. Journal of pain and symptom management 2002;24:91-96.

21) Singh T, Singh A, Avasthi A. Pattern of quality of life of long term care for the bedridden patients in Chandigarh, North India. The International Journal of Geriatrics and Geronotology 2005; 2:1-14.

22) Skilbeck J. Mott L. Page H. Smith D. Hjelmeland-Ahmedzai S, Clark D. Palliative care in chronic obstructive airways disease: a needs assessment. Palliat Med 1998:12:245-54

23) Zenz M. Strumpf M. Tryba M. Long term oral opioid therapy in patients with chronic non-malignant pain. J Pain Sym Management 1992:7:69-77

NOTE

NOTE

Certificate in Community Health for Nurses (BPCCHN)
Practical Course

CHO - 0003 Public Health and Primary Health Care Skills (10 Credits)

Block – 1 : Public Health Skills

Unit 1 : Community Need Assessment and Identification of Common Health Problems
Unit 2 : Nutritional Assessment
Unit 3 : Investigation of an Outbreak
Unit 4 : Organizing and Conducting Special Clinics
Unit 5 : Social Mobilisation Skills
Unit 6 : Health Education and Counselling
Unit 7 : Report Writing and IT Skills including Interpretation and Use of Data

Block- 2 : General Skills and Laboratory Skills

Unit 1 : Universal Precautions and Bio Medical Waste Management
Unit 2 : Procedures for Basic Tests
Unit 3 : Common Blood Tests and Preparation of Peripheral Smear
Unit 4 : Examination of Swelling, Lump and Joint
Unit 5 : Eye and ENT Examination
Unit 6 : Screening and Management of Common Dental Conditions
Unit 7 : Suturing of Superficial Wounds
Unit 8 : Drugs Dispensing and Injections

Block – 3 : Skills for Management of Common Conditions and Emergencies

Unit 1 : Basic Life Support (BLS)
Unit 2 : Assessment and Management of Fevers
Unit 3 : Management of Common Aches and Pains
Unit 4 : First Aid Techniques and Stabilization Care in Common Emergencies – 1
Unit 5 : First Aid Techniques and Stabilization Care in Common Emergencies – 2
Unit 6 : Geriatric and Palliative Care

Block – 4 : Maternal Health Skills

Unit 1 : Assessment of Health Status of Women
Unit 2 : Antenatal, Intranatal, Postnatal Examination and Care
Unit 3 : Organising Labor Room
Unit 4 : Conducting Normal Deliveries and Partograph
Unit 5 : Identification, Care and Referral of Complications during Labour
Unit 6 : Postnatal Examinations and Care
Unit 7 : Emergency and Injectable Contraceptives and Follow - up Care
Unit 8 : Understanding Continuum of Care (CoC) and the Use of Digital Interventions in Rajasthan

Block 5 : Reproductive and Adolescent Health Skills

Unit 1 : Assessment and Management of STIs / RTIs
Unit 2 : Insertion and Removal of IUCDS
Unit 3 : Management of Abortion and Counselling
Unit 4 : Adolescent Counselling

Block 6 : Newborn and Child Health Skills

Unit 1 : Newborn Resuscitation
Unit 2 : Assessment of the Newborn
Unit 3 : Kangaroo Mother Care
Unit 4 : Infant and Young Child Feeding and Counselling
Unit 5 : Promoting and Monitoring Growth and Development and use of Growth Chart
Unit 6 : Immunisation and Safe Injection Practices
Unit 7 : Use of Equipments
Unit 8 : National Child Health programmes