SECTOR : HEALTHCARE

Student Workbook

Class-XII

Central Board of Secondary Education

SECTOR: HEALTHCARE

Student Workbook
Class-XII

CENTRAL BOARD OF SECONDARY EDUCATION
(A Constituent Unit of NCERT, Under Ministry of Human Resource Development)

Sector: Healthcare
Student Handbook, Class - XII

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भारत का संविधान

उद्देशिका

हम, भारत के लोग, भारत को एक [1][सम्पूर्ण प्रभुत्व-संपन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य] बनाने के लिए, तथा उसके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनैतिक न्याय,
विचार, अभिव्यक्ति, विश्वास, धर्म
और उपासना की स्वतंत्रता,
प्रतिष्ठा और अवसर की समता
प्राप्त कराने के लिए
तथा उन सब में व्यक्ति की गरिमा
और [2][राष्ट्र की एकता और अखंडता]
सुनिश्चित करने वाली बंधुता बढ़ाने के लिए

दृढ़संकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवम्बर, 1949 ई० (मिति मार्गशीर्ष शुक्ल सप्तमी, संवत् दो हजार छह विक्रमी) को एतद्द्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

[1] संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 2 द्वारा (3.1.1977 से) "प्रभुत्व-संपन्न लोकतंत्रात्मक गणराज्य" के स्थान पर प्रतिस्थापित।
[2] संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 2 द्वारा (3.1.1977 से) "राष्ट्र की एकता" के स्थान पर प्रतिस्थापित।

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[1][भाग 4 क

मूल कर्त्तव्य

51 क. भारत के प्रत्येक नागरिक का यह कर्त्तव्य होगा कि वह –

(क) संविधान का पालन करे और उसके आदर्शों, संस्थाओं, राष्ट्रध्वज और राष्ट्रगान का आदर करे;

(ख) स्वतंत्रता के लिए हमारे राष्ट्रीय आंदोलन को प्रेरित करने वाले उच्च आदर्शों को हृदय में संजोए रखे और उनका पालन करे;

(ग) भारत की प्रभुता, एकता और अखंडता की रक्षा करे और उसे अक्षुण्ण रखे;

(घ) देश की रक्षा करे और आह्वान किए जाने पर राष्ट्र की सेवा करे;

(ङ) भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निर्माण करे जो धर्म, भाषा और प्रदेश या वर्ग पर आधारित सभी भेदभाव से परे हों, ऐसी प्रथाओं का त्याग करे जो स्त्रियों के सम्मान के विरुद्ध हैं;

(च) हमारी सामाजिक संस्कृति की गौरवशाली परंपरा का महत्त्व समझे और उसका परिरक्षण करे;

(छ) प्राकृतिक पर्यावरण की जिसके अंतर्गत वन, झील, नदी और वन्य जीव हैं, रक्षा करे और उसका संवर्धन करे तथा प्राणिमात्र के प्रति दयाभाव रखे;

(ज) वैज्ञानिक दृष्टिकोण, मानववाद और ज्ञानार्जन तथा सुधार की भावना का विकास करे;

(झ) सार्वजनिक संपत्ति को सुरक्षित रखे और हिंसा से दूर रहे;

(ञ) व्यक्तिगत और सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे जिससे राष्ट्र निरंतर बढ़ते हुए प्रयत्न और उपलब्धि की नई उंचाइयों को छू ले;

[1][(ट) यदि माता-पिता या संरक्षक है, छह वर्ष से चौदह वर्ष तक की आयु वाले अपने, यथास्थिति, बालक या प्रतिपाल्य के लिये शिक्षा के अवसर प्रदान करे।]

[1]संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 11 द्वारा (3-1-1977 से) अंत:स्थापित।
[2]संविधान (छियासीवां संशोधन) अधिनियम, 2002 की धारा 4 द्वारा (1-4-2010 से) अंत:स्थापित।

THE CONSTITUTION OF INDIA

PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a [1]**[SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC]** and to secure to all its citizens :

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the[2] [unity and integrity of the Nation];

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

[1] Subs. by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "SOVEREIGN DEMOCRATIC REPUBLIC" w.e.f. 3.1.1977)
[2] Subs. by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "unity of the Nation" (w.e.f. 3.1.1977)

THE CONSTITUTION OF INDIA

[1][PART IV A

FUNDAMENTAL DUTIES

51A. Fundamental Duties- It shall be the duty of every citizen of India-

(a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;

(b) to cherish and follow the noble ideals which inspired our national struggle for freedom;

(c) to uphold and protect the sovereignty, unity and integrity of India;

(d) to defend the country and render national service when called upon to do so;

(e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;

(f) to value and preserve the rich heritage of our composite culture;

(g) to protect and improve the natural environment including forests, lakes, rivers rivers, and wild life, and to compassion for living creatures;

(h) to develop the scientific temper, humanism and the spirit of inquiry and reform;

(i) to safeguard public property and to abjure violence;

(j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;

[2][(k) who is a parent or guardian to provide opportunities for education to his/her child or, as the case may be, ward between age of six and forteen years.]

[1] Ins. by the Constitution (Forty-Second Amendment) Act, 1976, s.11 (w.e.f. 3-1-1977).
[2] Ins. by the Constitution (Eighty-Sixth Amendment) Act, 2002, s.4 (w.e.f. 1-4-2010).

PREFACE

The student andbook is developed for the skill subject under the National Skill Qualification Framework (NSQF), an initiative of Ministry of Human Resource Development (MHRD), Government of India. The NSQF sets common principles and guidelines for a nationally recognized qualification system covering Schools, Vocational Education and Training Institutions, Technical Education Institutions, Colleges and Universities. It is envisaged that the NSQF will promote transparency of qualifications, cross-sectoral learning, student-centred learning and facilitate learner‟s mobility between different qualifications, thus encouraging lifelong learning. The National Curriculum Framework, 2005 recommends that children‟s life at school must be linked to their life outside the school. This principle makes a departure from the legacy of bookish learning which continues to shape our system and causes a gap between the school, home, community and the workplace. The Pandit Sunderlal Sharma Central Institute of Vocational Education (PSSCIVE), a constituent of National Council of Educational Research and Training (NCERT) has developed learning materials for the skill subjects offered from Classes IX to XII (NSQF Levels 1-4). This student workbook, which has been developed keeping in view the National Occupation Standards (NOSs) set by the Healthcare Sector Skill Council (HSSC) for the Job Role of Patient Care Assistant/ General Duty Assistant is meant for students who have passed Class XI. The success of education in schools depends on the steps that Principals and Teachers will take to encourage children to reflect their own learning and to pursue imaginative and on-the-job training activities. The student handbook has been reviewed by a group of experts team of doctors of AIIMS and MoHFW and their contributions are admirably acknowledged. The utility of the handbook will be adjudged by the qualitative improvement that it brings about in teaching-learning. The feedback and suggestions on the content by the teachers and other stakeholders will be of immense value to us in bringing about necessary improvement in the student workbook.

Chairperson, CBSE

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Sector:
HEALTHCARE

MEDICAL RECORD/ DOCUMENTATION

Student Workbook

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UNIT 1: MEDICAL RECORD/DOCUMENTATION		
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SESSION 1:
Preparing Medical Record

In this session, you will learn about the purpose and importance of documentation. You will also study the significance of documentation as per the needs of the patient.

Relevant Knowledge

Purpose of Documentation

A) The purpose of documenting medical records are –

i) To provide better and evidence based care.

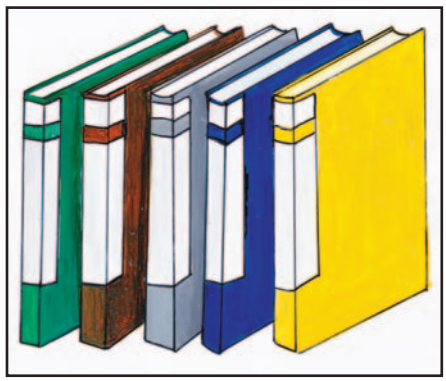
ii) Accurate and fast diagnosis leading to better treatment at lower costs of care.

iii) Avoid repeating investigations.

iv) Provide personalized care.

v) Improved application of health policy decisions.

vi) Provide evidence for medico-legal decisions and disputes.



Patient Medical Record

vii) Effective communication among health professionals. All these translate into improved personal and public health.

Patient Documentation

Patient medical card is the written, legal record of all pertinent interactions with the patient – assessing, diagnosing, planning, implementing and evaluating. It is a legal record that is permanent and retrievable for future purposes.

A) Documentation of patient care in is vital. Team members who interact with the patient at different times and in different ways, get a clear picture of what took place in their absence. All personnel should provide written documentation of anything they have observed or done with a patient to ensure coordination of activities and continuity of care. Proper documentation informs appropriate personnel about a patient's condition response to illness and the care that has been given as the result of the illness.

B) Documentation helps in auditing and thus, improving the quality of care. Audit of patient's records serves two purposes, quality assurance and reimbursement. As part of quality assurance programme, healthcare agencies periodically conduct chart audits to determine whether or not the care provided meets the established standards of patient care. The results of the audit can lead to changes in the manner in which care is provided.

If deficiencies are found, training can be used to find solution to the problems and improve the quality of care. Good medical documentation can help fill lacunae in the existing medical care and thus, planning of subsequent medical research.

C) The patient's record also serves as a document for reimbursement process as well as a legal document of the patient's health status and the care received.

The medical team taking care of the patient is responsible for ensuring diagnostic and therapeutic orders that are entered in the patient's record and implemented. Most often it is the policy of the healthcare agency that the diagnostic and therapeutic orders are written and is signed by the medical officer before it is being executed by the medical team.

Exercise

1. Visit a nearby hospital and observe various medical records. Write a paragraph in various medical records.

2. Discussed the following in class:

a) Purpose of documentation in hospital.

b) Legal aspects of patient's records.

SESSION 2:
Principles of Documentation

In this session, you will learn about the basic principles of documentation.

Relevant Knowledge

The patient's medical record is a permanent legal record. Accepted terminology should be commonly understood by the healthcare team and should communicate clearly and concisely. Only standard medical and nursing terminology and community recognized abbreviations and symbols should be used to facilitate communication. Consistency in their use saves time and space, without interrupting communication.

Medical Record Documentation

(i) The document should contain the date and time of each recording.

(ii) Correct spellings of words should be used. Check the dictionary and use the correct spellings.

(iii) Record only that information which pertains to the patient's health problem and care.

(iv) Accurate and complete documentation gives legal protection to the General Duty Assistant (GDA) and other healthcare professionals of the institution.

(v) The Patient name and identification data must be written on each page of the clinical record. Entries must be accurate. An observation made by another health professional must be identified as such.

(vi) Document all information necessary to explain the events in a shift. Anyone reading the document should have a clear picture of what took place or is being described. Complete, pertinent assessment data, such as vital signs, wound drainage, patient's complaints, who notified GDA on subsequent shift, etc. can make an objective evaluation and would help in revising the plan as needed.

(vii) Good charting is concise and brief. Use partial sentences and phrases. Use only accepted abbreviations.

(viii) Writing must be clear and easily readable by others. Legibility is all the more important while recording numbers and medical terms.

(ix) Recording of information on the patient's record must follow a chronological order. Charting statements must be logically organized according to time and content. Use of organized sequence will help to prevent omitting information about the patient. Documentation on data collection should be organized and logical in sequence. The statement is more easily read when written in a logical pattern.

(x) Documentation in a timely manner can help in avoiding errors. Record all medications at the time they are given. Procedures, treatments and assessments should be recorded as soon as possible after their completion. Timelines help to avoid forgetting important information.

(xi) While writing, if an error occurs, do not erase it. Common policies followed in such cases include, drawing a single line and writing the word void or error in the space above the incorrect entry, followed by the initials of the writer. A single line instead of multiple line is required to keep the incorrect entry legible.

(xii) Blank spaces should not be left on the chart. Avoid writing outside the lines of the charting format. A horizontal line is drawn thought any empty space to the right margin to prevent later entries being made in front of a signature.

(xiii) A signature must follow every entry into a patient's record. The correct way to sign a notation is using the first initial and full last name followed by the abbreviation of the healthcare workers position/title.

(xiv) All patient's records are confidential files that require written permission of the patient for them to be copied. Information within the chart is often of a personal matter as well as legal evidence of the care provided and should not be available to the insurance companies or third parties without the written permission of the patient. Those who require patient's information from records need to go through the proper channel which varies with the policies of the hospital.

Exercise

1. Visit a nearby hospital and observe various medical records. Observe various medical records with respect to above 14 points.

2. Visit a nearby hospital and examine a sample of patient case file and prepare the list of the content. Identify general types of information kept, such as referral letters, clinical notes, pharmacy or drug information and so on. Identify how the records are filled in chronological order.

3. Short Answer Questions:

a) Why confidentiality is important in maintaining medical record of the patient?

b) Describe the procedure of making corrections and omissions in healthcare documents?

c) Explain how to maintain the confidentiality of patient's records/documents?

4. Differentiate between the following:

Accuracy and completeness of patient's medical record.

5. Discuss the following in class:

a) Principles of documentation.

b) How to maintain confidentiality of patient's records?

c) Importance of recording date and time in medical records.

SESSION 3:
Content of Medical Documentation

In this session, you will learn about the types of entries and notes to be prepared while maintaining the medical record of the patient. Description of observations, symptoms, complaints and medical treatments will also be studied in this session.

Relevant Knowledge

Content of Documentation

Patient Medical Record

Healthcare agencies/hospitals vary in their specific requirement about what need to be included in the chart. All significant patient care should be documented either in narrative notes or on flow sheets (forms use to document data that can be more easily followed in graphic or tabular form). On admission to a facility, a complete health history is obtained and documented. This is followed by the current need assessment. These may be combined or maintained on separate forms.

Types of Entries

Various types of entries may be made in a chart. They are described as followed:

(i) Admission Note

An admission note is a part of medical record that documents the patient's status, reasons why the patient is admitted for inpatient care to a hospital and the initial instructions for the patient's care. It is the note that acknowledges the arrival of a new patient. Following the admission note, a narrative entry is made. This is followed by a description of the patient's current status at appropriate intervals. On arrival, a patient's orientation to the hospital facility should be made.

The admission note usually include – the time of arrival, age, sex, how the patient arrived, where the patient came from, medical diagnosis, chief complaint, general appearance, treatment in progress, allergies, vital signs and notifications of the physician. An ideal admission note would include the following:

(i) Patient demographic Information

- Name
- Age
- Gender
- Race/Religion
- Address

- Contact Information
- UHID number
- Chart number
- Room number
- Date of birth
- Attending physician
- Admission date & time
- Occupation

(ii) Chief Complaints

- Present complaints in chronological order with earlist first.

(iii) History of Present Illness

- Statement of health status
- Detailed description of chief complaints
- Positive and negative symptoms related to the chief complaint based on the differential diagnosis the health care provider has developed.
- Emergency actions taken and patient responses if relevant

(iv) Allergies

- History of any food on medication allergies

(v) Past Medical History

List of the patient's on-going medical problems. Chronic problems should be addressed as to whether or not they are well controlled or uncontrolled. Include dates of pertinent items.

(vi) Past Surgical History

List of surgeries in the past with dates of pertinent items.

(vii) Family history

Current Health Status or cause of death for:

- Parents I Siblings I Children I Spouse

(viii) Social History

In medicine, social history is a portion of the patient history addressing familial, occupational, and recreational aspects of the patient's life that have the potential to be clinically significant.

(ix) Medications

- For each: generic name - amount - rate
- Medications on arrival
- Medications on transfer

(x) Review of Systems

- General
- Head
- Eyes
- Ears
- Nose and sinuses
- Throat, mouth, and neck
- Breasts
- Cardiovascular system
- Respiratory system
- Gastrointestinal system
- Urinary system
- Genital system
- Vascular system
- Musculoskeletal system
- Nervous system
- Mental status
- Hematologic system
- Endocrine system

(xi) Physical exam

Physical examination or clinical examination is the process by which a health care provider investigates the body of a patient for signs of disease.

(xii) Labs

e.g.: Electrolytes, Arterial blood gases, Liver function tests, etc.

(xiii) Diagnostics

e.g.: Electrocardiography (ECG), Chest X-ray (CXR), Computed Thermography (CT), Magnetic Resonance Imaging (MRI)

(xiv) Assessment and Plan

Assessment includes a discussion of the differential diagnosis and supporting history and exam findings.

(ii) Change of Shift Report

During each shift, documentation of the patient's assessment made is done. The "Change of Shift Report" is the communication between the nursing staff during shift changeover periods regarding patient care. At the end of each shift nurses report information about their assigned patients to nurses working on the next shift. A handover report is usually given orally in person or during rounds at the bedside. Reports are given in person or during rounds in hospital permit nurses to obtain immediate feedback when questions are raised about a patient's/patient's care.

(iii) Assessment Notes

Documentation of the complete assessment of the patient is done. Assessment of the patient's overall physical, emotional and behavioural state. Consideration for all patients include: looks well or unwell, pale or flushed, lethargic or active, agitated or calm, complaint or combative, posture and movement.

(iv) Transfer and Discharge Notes

When a patient is transferred to another facility either temporarily or permanently, a transfer note is written. This note may include the following:

- Reason for transfer
- Method of transportation
- Person giving and receiving the report
- Notification of the patient, including vital signs and treatments in progress.

A similar note is made when a patient is sent for a test within the same facility. When the patient returns to unit a similar note may be made.

(v) Patient Teaching Notes

Instructions given to a patient need careful study. All teaching that occurs must be noted including reinforcement of the information already taught. It also must state the patient's response to teaching.

Electronic Medical Record Documentation

(vi) Symptoms and Complaints

Any symptoms or complaints by patient should be documented in detail. This can include subjective or objective data and must be specific in terms of location, duration, intensity, amount, size and frequency. While documenting, the complaints of the patient, care given and response of the patient is also noted.

(vii) Observation of Dressing, Tubes or Attached Devices

Observation of the tubes must be documented in the initial entry of each shift and thereafter frequently. Documentation of dressing should include location of dressing, amount as well as a description of any drainage observed. If the dressing is changed,

the condition of the surrounding skin and wound must be described. If I/V fluids are administered, correct placement of the tube, observation of infusion site for any redness, tenderness edema or warmth, also must be documented.

(viii) Medications and Treatments

Usually there will be a medication administration record. When all the medicines are administered, charting is done. If any medication is not given, the reason for that should be documented and it is better to inform the physician concerned. Time, route and dosage of medicine and the reason for administration and the response of the patient are also documented.

(ix) Observation of Psychosocial Status

The patient's sensorium in relation to the level of consciousness and orientation to time, place and person are also documented.

Patient's leaving against medical advice (LAMA) must be documented clearly with the reason for the LAMA.

Exercise

1. Visit a nearby hospital and list the contents of given records maintained in a hospital:

Record	Contents
Pharmacy and Drug Records	
Administrative Records	
Nursing Records or Ward Records	
Legal Records	

2. Short Answer Questions:

a) What is the full form of LAMA?

b) List the content of Admission Note?

c) Describe the purpose of transfer and discharge note?

3. Differentiate between the following:

a) Assessment note and treatment note.

b) Symptom note and medication note.

4. Discuss the following in class:

a) Types of notes/reports maintained for a patient/patient?

b) What is the role of a General Duty Assistant (GDA)/PCA in preparation and maintenance of physical assessment report?

SESSION 4:
Maintaining Record

Documentation is a set of documents provided on paper or on digital media. The procedure of documentation includes drafting, formatting, submitting, reviewing, approving, distributing, reporting, tracking, etc. The purpose of complete and accurate documentation is to foster quality and continuity of care. In this session, you will learn about different methods of documentation and their formats. You will also study different types of records.

Relevant Knowledge

The different methods of documentation system are evolved to achieve specific aims. Familiarity with the different systems will enable you to adapt the appropriate system in a particular health care setting.

Source Oriented Medical Record

Source Oriented Medical Record is a type of medical record kept according to health discipline e.g., medicine, nursing, laboratory, X-ray etc. These records include information about the care given, the patient's response to care, and other events documented chronologically and sequentially in a specific location in the record designed for the particular health team member making the entry.

Patient - Doctor interaction

The advantage is that the filing and retrieving of data is easy. It organizes the information according to the patient care department that provided the care, or who provided the care. The main advantage of this format is that the filing of reports is easy. Professionals would just have to look at where the report came from and date, and file in that section. The main disadvantage is that it would be difficult to follow a certain course of treatment for the patient, since they would have to search through everything, making it time consuming. Also if a facility has many different departments, there will be even more sections in the record to search through.

Problem Oriented Medical Records (POMR)

There is an index list that defines each problem. Everything is itemized and specific problems are organized into four parts. The main advantage of it is that, it makes it easier to follow a course of treatment under a specific problem. However, this type would be time consuming as well, especially to file a new problem in it. The POMR consists of four components, the database, the problem list, initial plan for each problem and progress note for each problem.

Documentation Format

There are a variety of documentation formats utilized by the health care providers. They include:

(i) **Narrative charting:** It is a free style method of documentation. It is a method of charting that provides information in the form of statements that describes an event surrounding the patient care. It is often relatively unstructured thereby providing flexibility in determining how information is recorded or on the other hand the format may be structured and problem focused.

(ii) **Problem focused charting:** This includes the following:

A - Assessment

P - Problem identification

I - Intervention

E - Evaluation

The process begins with an admission assessment that is usually completed on a separate form and the initiation of a problem list that is based on the initial assessment. Documentation of the patient care is focused on intervention and evaluation related to problems listed. Each entry in the progress note is preceded by the date, time, and problems listed.

Maintenance of Records

1. The records are kept under the safe custody of the GDA in each ward or department.
2. No individual sheet is separated from the complete record.
3. Records are kept in a place, not accessible to the patients and visitors.
4. No stranger is ever permitted to read the records.
5. Records are not handed over to the legal advisors without the written permission of the administration.
6. All hospital personnel are legally and ethically obligated to keep in confidence all the informations provided in the records.

7. All the records are to be handled carefully. Careless handling can destroy the records.
8. All the records are filed according to the hospital custom, so that they can be traced easily.
9. All the records are identified with the bio-data of the patients such as name, age, ward, bed no., diagnosis etc.
10. Records are never sent out of the hospital without the doctor's permission.

    Reference is made by writing separate sheets and sending to the agency who requests for them.

Types of Records

1. Outpatient and Inpatient Records – in most of the hospitals, the inpatient records will be continuation of the outpatient record. Outpatient record is will contain the records filled up in the outpatient department. This will contain the biodata of the patient, diagnosis, family history, history of the past and present illness, signs and symptoms, findings of medical examination, investigations, treatments, medications progress notes and summary made at the discharge of the patient.
2. Doctor's Order Sheet – The doctor's orders regarding the medication investigations, diet etc. may be written on separate sheets.
3. Graphic charts of Temperature, Pulse, Respiration Rate (T.P.R.) – In this type of record, the temperature, pulse and respiration are written in a graphic form so that a slight deviation from the normal can be noted at a glance.
4. Reports of Laboratory Examination
5. Diet Sheets
6. Consent form for Operation and Anesthesia
7. Intake and Output Chart – Patient's on intravenous fluids or on the liquid diet, critically ill patient, post – operative patients, patient with oedema, patients having vomiting and diarrhea patients getting diuretics etc.
8. Reports of Anesthesia, Physiotherapy, Occupational Therapy and other Special Treatment
9. Registers – To maintain the statistic records, every hospital maintains certain registers, such as resister for the births and deaths, register for operations and deliveries, census register, register for the admission and discharge & register for the OPD attendants, etc. Documentation of Medico-legal cases

The important documents to be maintained by the hospital in Medico-legal cases are as follows:

(i) Police intimation: This is a document which is sent by the hospital informing about a medico-legal case.

(ii) Wound certificate: This document describes the nature of wound and its importance, these are given on request by the police. It must be duly signed by the medical officer, who has attended the patient.

(iii) Discharge certificate – This certificate is given to the patient at the time of discharge from hospital. It contains the diagnosis of disease, time period of hospital stay, treatment given. It is a documents of medico-legal importance.

(iv) Accident cum wound register: this is usually maintained by the casualty medical officer. Recording the nature of wound & trauma. In case the patient requests, medical certificate may have to be issued by the hospital.

Treatment Record

This is a record which keeps track of medicines taken by the patient. It includes date, time, route of drug, frequency and signature of treating doctor & nursing staff.

Discharge / Referral Summaries

Role of GDA in Maintaining the Records

The major role of GDA is to compile, process and maintain medical records, which include information about the patient's care on the following aspects:

- Baths
- Showers
- Oral care
- Denture care
- Foot care
- Hair and nail care
- Urinary catheter care
- Back care
- Turning and positioning
- Meal intake
- Fluid intake
- Activities, like walking

- Range of motion exercises if done
- Warm soaks
- Height
- Weight
- Urinary drainage bag output
- Temperature
- Pulse
- Respiration rate
- Blood pressure
- Blood glucose readings

Exercise

1. Visit a nearby hospital and observe the records maintained in different department:

Department	Type of Record

2. Short Answer Questions:

a) Enlist any two methods of documentation?

b) Enlist the different type of medical records kept in a hospital?

c) What are the documents maintained by the hospital for Medico-legal cases?

d) What is Problem Oriented Medical records (POMR)?

3. Differentiate between the following:

a) Source oriented and problem oriented medical record.

b) Outpatient and inpatient record.

4. Discuss the following in class:

Role of GDA in documentation.

Sector:
HEALTHCARE

ROLE OF GENERAL DUTY ASSISTANT IN ELDERLY AND CHILDCARE

Student Workbook

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SESSION 1:
Introduction to Care of the Elderly

In this session, you will learn about ageing and some myths and facts about ageing. You will also learn about the basics of care of the elderly.

Relevant Knowledge

An Elderly Couple

Elderly care, (also known as aged care), is the fulfillment of the special needs and requirements that are unique to the aged people. This broad term encompasses services, such as assisted living, adult daycare, long term care, nursing homes (often referred to as residential care), hospice care, and home care.

Elderly care emphasizes the social and personal requirements of senior citizens who need some assistance with daily activities and health care, but who desire to live with dignity. Traditionally, elderly care has been the responsibility of family members and was provided within the extended family home. Increasingly in modern societies, elderly care is now being provided by state or charitable institutions.

Ageing is an inevitable process of life. A sudden spurt in the population of elderly in a country is bound to pose multiple challenges before the human society. Ageing has gone beyond the realm of welfare concern and needs to be viewed as a developmental challenge. Many elderly people gradually lose functioning ability and require either additional assistance in the home or a move to an eldercare facility. Assisted living is one option for the elderly who need assistance with everyday tasks.

In India, parents are typically cared for by their children into old age. Indian values demand honour and respect for older people. Currently there is an estimated 6.9% in the age group of 55-64 years and 5.7% for 65 and above elderly in India (Census of India, 2011).

A distinction is generally made between medical and non-medical care (care provided by people who are not medical professionals). It is important for caregivers to ensure that measures are put into place to preserve and promote function rather than contribute to a decline in the status an older adult that has physical limitations.

Caregivers need to be conscious of actions and behaviors that cause older adults to become dependent on them and need to allow older patients to maintain as much independence as possible. Providing information to the older patient on why it is important to perform self-care may allow them to see the benefit in performing self-care independently. If the older adult is able to complete the self-care activities on their own, or even if they need supervision, the caregivers should encourage them in their efforts this maintaining independence. It can

provide them with a sense of accomplishment and the ability to maintain independence longer.

Think about Elderly

All of us know “old” people. It may be a parent, grandparent or a neighbour. It may also be the person that you take care of. Think for a minute about these “old” people. Are they all the same? Or, are they different? Think about how they all are different in physical way. Are they all in poor health? Think about their mental health. Are they all confused? Think about how they are in a social way. Do they go out or do they all stay alone in their home? Think about how they are in terms of money. Do all “old” people have the same spiritual needs? Are they different or, are they all the same?

Words used for particular age groups:

Age Groups	Age Span
Infant	Birth to 1 year
Toddler	1 to 3 years
Preschool child	3 to 5 years
School age child	5 to 12 years
Adolescent	12 to 18 years
Young Adult	18 to 45 years
Middle Age Adult	45 to 65 years
Old Adult	Over 65

Myths and Fact about Aging

There are many things said about older people that are just not true.

Some of these false myths are below:

- All old people are the same
- Old people cannot learn new things
- Old people are forgetful
- All old people will get confused and senile
- Old people are sick and frail
- Old people become sicker and sicker as they age
- Old people cannot exercise
- Old people depend on others
- Old people are usually lonely, alone and withdrawn

All old people are NOT the same. Often the age of the person is not the best way to know about the person and his/her strengths and weaknesses. Some 90-year-old people exercise daily; some take college courses; some are very active in their area of work or belief.

Ageing does not affect our personality. It remains about the same. Old people keep these personality differences as they age.

Old people can still learn and they are not always “forgetful”. Aging does not mean that the person cannot learn. Some have short-term memory problems but they can cope up with this and learn. Confusion is NOT a normal sign of aging.

Not all old people are sick and frail. Some are very healthy and without any disability. Older people can, and should, exercise on a daily basis. Healthy aging involves many things, including a good diet and exercise. Although some older people may need some assistance because they have some disability, many more are NOT dependent on others.

Old people do NOT have to lose their teeth. Good dental care is needed for keeping teeth healthy and strong.

Socially, NOT all old people are lonely, alone and withdrawn. Some remain active.

Many old people remain active and involved with family, friends and other friends. Some may enter a senior group home or an assisted living place with lots of activities. However, all old people need care and greater attention from their family members, friends and colleagues.

Exercise

1. Observe the old people in your surrounding and tabulate the myths and facts related to ageing:

Myths	Facts

2. **Short Answer Questions:**

a) What is ageing?

b) Classify various age group?

c) What are the special points regarding care of elderly?

SESSION 2:
Age Related Changes in People

In this session, you will learn about the age related changes that occur in people. You will also study the physical and psychological changes in aged people.

Relevant Knowledge

Most age-related biological functions reach a peak at the age of 30 and thereafter decline linearly. The physical changes that take place with age are as follows:

Skin, Hair and Nails

An Elderly Couple

- Skin becomes more fragile
- Rashes are more common
- Skin may become paler
- "Age spots" or "liver spots" may appear
- Skin tags may appear, mostly on the neck
- Skin may become thinner. Wrinkles appear
- Dry skin may occur
- Hairs gets gray and faded
- Hair thins on the head and under the arms
- Nose and ear hair become thicker and more visible
- Facial hair may appear
- Finger nails and toe nails get thick
- The sweat glands in the skin slow down
- Red, purple or brown spots may begin on the arms and legs

Muscles and Bones

- Bones lose calcium.
- Bones get weaker and thinner.
- Disks of spine get smaller so some will have a curve in the spine
- Joints get less flexible and less mobile.
- Muscle tone gets less.
- Muscle mass gets lower and fat builds up.

Respiratory System

- Nose gets drier.
- Vocal cords lose their elastic so the voice of the person may change.

- Lung capacity may decrease.
- Breath sounds decrease.

Vardiovascular System

Cardiovascular System

- Loss of heart muscle tone.
- Increased size of the heart muscle.
- A larger left side of the heart.
- Less elasticity of the heart and blood vessels.
- Lower output from the heart.
- Greater deposits in the blood vessels.
- Lower pulse.
- The blood gets thicker.
- A small drop in the red blood cells and white blood cells.
- The Thymocytes cells (T cells) get less effective.

Gastrointestinal System

- Less feeling of thirst.
- Less saliva.
- Less digestion.
- Slower movement of the gastro-intestinal tract.

Urinary System

- Kidneys lose some of their function.
- Lower blood flow to the kidneys.
- Concentration of the urine decreases.
- Bladder gets smaller.
- Loss of bladder muscle tone.
- Loss of bladder elasticity.
- Slower and/or lower feeling of the need to void.
- More urine at night.
- Prostate in men gets larger.

Nervous System

- Brain gets smaller.
- Brain weighs less.
- Blood flow to the brain gets lower.
- Reflexes get slower.

Eyes

Eye

- Less able to focus.
- The eyelids sag.
- Eyelashes get thin, short and less.
- A gray area around the edges of the cornea.
- People get far sighted. They cannot see things that are close to them.
- Lower eye muscle tone.
- Less tears.

Ear

Ear

- Less able to hear high pitch sounds.
- The parts of the inner ear shrink.

Taste and Smell

- Less taste buds.
- Less nose scent cells.

Thinking and Emotional Changes and Needs

Not all old people have a mental problem or confusion. These things are NOT a normal change. Most are fine in terms of their thinking, learning and communication, but some have a disease or problem that affects these things. Some of these problems are things like Alzheimer's and some drugs. It is also known that the personality of the person does not change, as the person gets old.

Complete cycle of person's life from childhood to old age

Social Changes and Needs

There are many social changes and needs for old people. Many of

these are related to the fact that loved ones, both friends and spouses, may have died. Others miss working after they retire. Others may have a physical problem that does not let them be with others as they used to do.

For example, some old people lose their sight so they are not able to drive their car; some may have muscle weakness so they cannot take long walks as they used to.

Legal Needs

The elderly also have their own legal needs. Some of these special needs are:

- Maintaining rights and dignity
- Power of attorney/ other financial issues
- Prevention from being abuse
- Prevention from violence

Old adults do not have the same appetite that they had when they were younger. Their need for large amounts of food and calories is lowered. They may also not want to eat. If the sense of taste and smell are gone, they may not enjoy food as much as they did when they were younger.

As the human body ages, it slows down and it does not work as well as it did in the past. For example, digestion slows down. Foods that are eaten take longer to digest. It also takes longer to burn the calories that we eat.

Vision and hearing may also get poor as a person gets older. Many old patients and residents use eyeglasses, hearing aids and devices as they get older.

An old adult may also have weak muscles, unstable joints and poor balance. These things can make an old person fall or slip. Falls and slips can break bones and even lead to death.

Many elderly people also have long-term diseases that affect how we care for them. Many older people have diabetes, arthritis, Alzheimer's disease, heart, lung and kidney disease. They are also not able to fight off infections as well as they did when they were young.

Old patients are at great risk of getting an infection, like pneumonia or a urinary tract infection, because their immune system has slowed down.

The aging process also affects the skin of old people. The skin gets dry and easily irritated; it breaks down and tears very easily for many patients and residents. Also, the body temperature is not controlled as well as it was in the past. Old patients feel extremes of hot and cold more than younger people.

An Elderly Man

Mental ability also changes as one gets older. Mentally, many old residents and patients are confused. They forget things quickly. They are not able to remember recent events. They

may not know the time of day, the day of the week or even the current year. Some do not know, or cannot remember, where they are and who they are. They are disoriented.

They are not oriented to person, place and time. They may also be agitated and use poor judgment. Others may have delirium, dementia and depression.

All of these are normal aging changes which affect the kind of care we must provide to our aging patients.

Exercise

1. Understand the following needs with different age groups and fill the table given below:

Needs	Elderly	Young	Adult
Social needs			
Thinking needs			
Emotional needs			
Special needs			

2. Short Answer Questions:

a) Enlist the common health problems that older people may have?

b) Why elderly people require special care?

c) State any five changes that occurs in the body during old age?

SESSION 3:
Basic Needs of Elderly

In this session, you will learn about the safety, security, food and fluid needs of the elderly people.

Relevant Knowledge

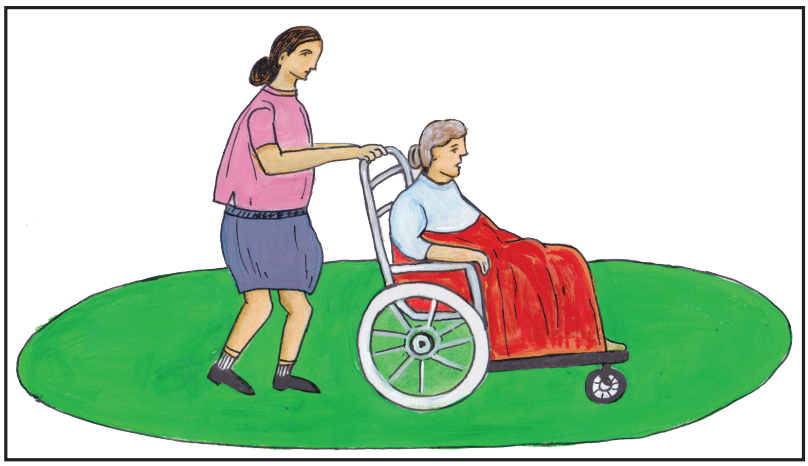
The General Duty Assistant (GDA) and other healthcare workers care for the old patients and residents all over the world. In India today there are more aged people than people of any other age group.

Some Tasks for the Elderly

Erik Erikson, a psychologist, listed 8 major developmental tasks that every person must accomplish during their life. The General Duty Assistant and other healthcare providers must know about these major tasks. For example, to take care of adolescents one must know that adolescents have to cope with identity formation- "Who am I?". A hospital staff can affect an adolescent's sense of self, it can also help to keep in touch with their friends or peer group; a group that is much more important to them than their own family. Their peer group helps them to define who they are.

Care of the Elderly

According to Erikson, older adults want to share their wisdom, maintain their sense of self, maintain the integrity and be happy with what they have done. Old adults who can NOT do these tasks may be sad, depressed and unhappy. They may view their life as worthless and without meaning. They may think that they are useless. Some may feel that they are a burden to their family, friends and healthcare workers. Old adults also have to deal with losses. They may lose their husband or wife, their friends and other people who they loved. They may feel lonely and not loved. They can also be very sad and depressed. As they get older and lose their own mental and physical health, they may NOT be able to care for themselves anymore. This may make the patient or resident sad or angry. All of these losses make the old person feel that they are no more needed in this world or they



GDA taking care of non-ambulatory elderly woman

too will die one day. They give their own things and prized possessions to their family and loved ones. Some older adults may think silently about these losses and their own death. They may also review their own life and what they have done in silence. Other old adults may speak about their losses to nurses, General Duty Assistant, social workers, family and others. As a healthcare provider, we should listen to the older patient when they talk about their losses and their thoughts about death.

Thinking and Learning Abilities

The thinking and learning abilities of the older adults affect how we communicate, instruct and teach them and their family members. Older adults need special care during communication and instruction for doing exercise, etc. They often have a physical and mental problem that can interfere with learning and thinking. Older adults may have:

- **A short attention span:** Old adults may not be able to understand long and detailed information. They may do better with short instructions.
- **Less learning ability:** Old people may not be able to learn new things as well as they did in the past.
- **Less ability to understand:** Many older adults are confused and not able to understand.
- **An inability to communicate:** Older adults may not be able to speak and ask questions. After a stroke, many patients have aphasia; a lack of ability to speak.
- **Poor hearing and sight:** Vision and hearing get poor as humans age. GDA and others must give a patient their eyeglasses and/or their hearing aid so they can communicate easily.

When a GDA is communicating with an elderly patient, he/she should:

- Give the person their eyeglasses and hearing aid, if they have one
- Speak slowly and clearly while facing the person
- Keep information simple
- Use words that the person can understand
- Use pictures and large print material
- Provide enough light if the patient wants to read
- Keep sessions short
- Repeat communication as often as needed so that the patient can understand it and remember it
- Allow enough time for the patient. Some patients need more time than others
- Make sure that the area or room is quiet
- Allow the person to talk and ask questions
- Include the loved ones in the communication and instruction process.

Safety and Security Needs

The need for safety and security is one of our most basic human needs. Safety is very important for all age groups but safety needs are the greatest for young children and the elderly. For example, infants put small objects in their mouths. These small things can be dangerous. They can eat pills, poisons and even choke on something small.

Similarly, the old adults who have a mental, sensory (eyes, ears) or physical loss are at greater risk and prone to accidents. An old patient that has poor vision and hearing is generally confused and has poor judgment. He is prone to slip, fall, cut, bruises, etc.

Physical problems, confusion, loss of hearing and vision, poor judgment and the inability to see danger when it exists are some of the reasons why healthcare providers must maintain a safe environment for the elderly. Safety of patient's is everyone's responsibility. Safety needs must ALWAYS be a priority.

All patients and patient care areas must be safe and free of all dangers.

Food and Fluid Needs

Food and nutritional needs also change as a person gets older and older. The need for calories decreases when a person gets older. These needs are highest when the person was an infant or a teen.

The caloric requirement of old people are comparatively less than younger people. They do not burn calories and food as quickly as they did when they were younger and more active. This does not mean, however, that the elderly do not need a good diet. Older patients do need a good diet just like the other age groups.

The appetite and the digestive process slows down as the human body ages. Old adults do not feel as hungry as they did when they were young. Also, when they eat meals they feel full and they may not want to eat another meal for a long time. They may even skip a meal. Old adults often do better with small snacks during the day rather than large meals three times a day.

In terms of fluid needs (hydration), an elderly patient may not be able to swallow fluids. They may not even feel thirsty when they should under normal conditions. We must, therefore, offer fluids very often to elderly. The GDA should use an apron and proper utensils for feeding the elderly patients.

Exercise

1. Visit a nearby hospital and observe the old age patients and write the safety related requirement and care rendered by GDA in the table given below:

Safety related needs of Patient	Care rendered by GDA

2. Short Answer Questions:

Explain the security and safety needs of an elderly?

3. Differentiate between the following:

a) Thinking and learning abilities.

b) Security and safety of patients.

4. Discuss the following in class:

Physical and mental care of the elderly.

SESSION 4:
Taking Care of Common Problems of Elderly

In this session, you will learn about the common problems that elderly face and the procedures to be adopted for taking care of these problems.

Relevant Knowledge

Taking Care of Skin and Nails

The skin becomes thinner, dry, pale, fragile, rough, less elastic, with less sweat glands and fat. The older person may get these problems as a result of these changes.

- Skin tears (thin and fragile skin)
- **Skin breakdown and pressure ulcers:** The skin is thin, dry, fragile and has less cushion as the person ages.
- Skin cancer and sun burns. The pale and fragile skin makes the person prone to sunburns and skin cancer.
- Rashes and infections like contact allergies from some soaps and shingles.
- **Less able to cope with heat and cold:** The person may get too cold because they have less fat tissue. The person may also get too hot because they have less "cooling off" sweat glands.
- **Pressure Ulcer:** Pressure ulcers occur when people are not up and walking. Patients and residents with a poor diet are at risk for pressure ulcers. Residents and patients who are wet are at risk for pressure ulcers. People that do not have a normal sense of pain and the physical ability to turn will remain in one position for a very long time unless someone else turns them. If a patient stays in one position for a long time, they will get a pressure ulcer. Friction occurs when a patient or resident is pulled up in bed or in the chair. Uneven pressure is created when sheets are wrinkled. This leads to pressure ulcers.

A General Duty Assistant should render the following care as per the needs of the patient:

- **Dry skin care:** Skin lotions and mild soaps should be used.
- **Skin tears and other skin breakdowns:** The older person must not be gripped forcefully during a transfer. This can lead to a skin tear. People on bed rest are most at risk developing pressure ulcer.

GDA Supporting the Elderly

- **Provide good skin care:** Use mild soap and gentle strokes with a soft washcloth when giving a bath to a resident or patient. Rinse the skin well and then pat it dry with a soft towel. Use a bland lotion to help dry skin. Lotion helps to keep the skin healthy and soft. Do NOT use alcohol or alcohol base lotions on skin. Alcohol dries the skin.
- **Keep the skin clean and dry:** Immediately remove all wet or dirty linens, briefs and clothing. Do not let the patient remain wet or dirty with urine, feces or other fluids, including water or tea. Wash, rinse and dry all wet and dirty skin.
- Patients and residents who stay in bed, the chair or wheelchair must be moved and re-positioned at least every 2 hours.
- Encourage patients to walk around. Walking and moving about increases blood flow.
- Anticipate the patient's need to use the commode or bathroom. Follow the patient's bowel and bladder training programme if it is ordered.
- Encourage the person to eat good foods and lots of fluids.
- Use pressure reducing cushions, mattresses, beds, booties, elbow pads, etc. These items lower pressure when patients stay in bed or chair for a long period of time.
- Do NOT allow a patient to remain on a bedpan for a long period of time.
- Do NOT drag a person's body along bed sheets. Lifting devices and lifting sheets lower friction and shear. They also prevent patient and staff injury.
- The feet and toes should be washed and dried during every bath and kept clean. Leaving the area between the toes wet can lead to soft skin that could break down. It is also important to use a good skin lotion on the feet but NOT between the toes. This will soften the area and make it more prone to sores.

Taking Care of Bones

As the body ages, the bones lose calcium, get weak, thin, brittle and weak. Spine gets smaller. Joints become less flexible and less mobile. Many people get broken bones and fractures because of these changes. Falls can lead to injury and even death.

The most common problems of the bones are:

- Osteoporosis
- Osteoarthritis
- Rheumatoid arthritis
- Gout
- Bursitis

In order to provide necessary care to the bones, the GDA can help their patients in the following ways:

- Provide patient with a good healthy diet.
- Make sure that they get enough calcium and vitamin D.

- Encourage them to perform daily exercise include both active and passive range of motion exercises.
- Encourage the person to walk and get out of bed.
- Prevent falls.
- Nurses and other people that work in homes, hospitals and nursing homes, must assess a resident or patients risk. They have to find out if the patient or resident is at risk for falls. Move such patient's bed and/or room closer to the nursing station.
- Regular rest and sleep.

Taking Care of Muscle Problems

Regular exercise is very important in order to maintain and improve muscle function. The GDA should help the patient to do range of motion exercise so that they can move their muscles and joints completely. GDA and other members of the team often help and/or remind the patient or resident to perform these exercises. When a person is not able to do these transfers they must depend on others for help and GDA can do it in a better way.

Teach the patient to practice how to walk up and down stairs using a handrail. When a person walks up the stairs they should put their good leg up on the stair and then bring up the weak one.

Taking Care of Respiratory System

The GDA should take all precautions to prevent lung infection and help patients to keep respiratory system normal. The following points should be kept in mind by the GDA while helping a patient in keeping his/her respiratory system fit.

- COPD is treated with a number of medicines, GDA should ensure they take their regular medication as suggested by their physician. Also advice good diet, plenty of fluids, oxygen, and deep breathing exercises.
- Lung cancer is treated with surgery, radiation and drugs. Pain, a poor appetite, nausea and vomiting may be issues with cancer patients. The GDA can provide the person with a good diet and fluids; make the person as comfortable as possible; and observe the person's coughing, chest pain and blood in the sputum. Report anything that is NOT normal.
- When the person has the flu, the GDA should observe the person's temperature, coughing & running nose. Report anything that is NOT normal, and give the person as much comfort as possible.
- The treatment of pneumonia includes drugs to kill the germs supportively by rest, fluids, a good diet and oxygen. The GDA must observe all of their patients about their breathing, especially older people. They must immediately report anything that is not normal.

Taking Care of Heart Problems

GDA should encourage patients to do mild exercises regularly.

- Exercise and a healthy weight are also important in keeping the blood pressure at a good level.
- Heart attacks are treated with rest, oxygen, a number of different medications, including aspirin, which thins the blood, and pain medications to help the pain and to ease the amount of work that the heart has to do as a result of the pain. The GDA can help the person to prevent a heart attack by giving a healthy diet, encouraging them to exercise and reminding them to take their heart medicines.
- The GDA can care for the person Peripheral Vessel Problems by encouraging the person to walk and then to rest if pain begins, checking the feet and toes regularly for any signs of a sore, giving the person good foot care, encouraging the person to stop smoking if they do so, giving the person a good diet with lots of fruit, vegetables and whole grains rather than fats and salt.

Taking Care of Digestion Problems

The GDA can help patients in taking care of their digestion related problems by performing the following activities:

- Advising smaller meals spread out during the day, sit up after a meal, rather than lying down, provide a good diet with low fat and caffeine in case of hernia.
- Encouraging NOT to drink alcohol or smoke and helping the person to cope with stress.
- Reporting any pain or bleeding in stool to the doctor.
- When the GDA cares for a person with incontinence, the area must be cleaned properly & then air dried. The area should be air dried. A special cream should also be used on clean dry skin to prevent skin breakdown and to keep all stool away from the skin. Cornstarch can also be used.
- The GDA should advise balanced diet consiting of fiber/day, fruit, vegetables, beans, bran and whole grains, plenty of fluids such as water and juice and exercise on a daily basis.

Urine System

- Good hygiene, hand washing and encouraging the person to have water in their diet helps in preventing urine infections.
- Bladder training along with medicine and surgery is done, in some cases of Incontinence.
- Smaller meals, control of diabetes, heart disease and high blood pressure, treatment of urine infections, low salt and protein in the diet is advised to the patient with kidney failure.

Nervous System

- The GDA must maintain safety and ensure good nutrition to support patients who are suffering from a lack of ability to do simple things like eating and wearing clothes.
- If a patient is in the early stage of the nervous disease and is able to dress and bathe without help, he/she should help them to remain as active and as independent as possible. If the patient is at risk for falls, we must make sure that their room and the nursing unit is safe, secure, neat and uncluttered.

Keep the patient care area bright. Keep stimulation and noise to a minimum. Use large clocks, calendars and other things to orient the patient. Take away all clutter and dangerous chemicals, like medicines and cleaning liquids in order to ensure safety.

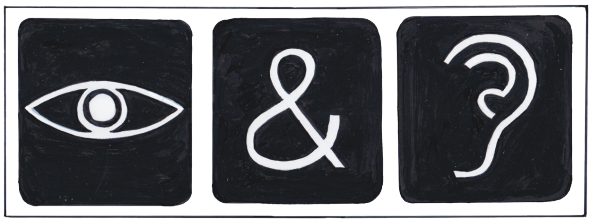
Taking Care of Eyes

The older persons, who have vision problems, need assistance with many activities of daily living (ADL), including dressing, walking and eating. The need for safety, freedom from falls, and other injuries (cooking fires) are of utmost importance. Encourage older patients to have a regular, annual eye examination and use their eye drugs. The GDA should also observe and report any changes in the persons vision.

Special low vision programme help patients on the use of special things that help the person to read, write and do other things. For example, they may get special lighting, magnifiers, large print reading materials, computers that talk, clocks and watches that talk and/or have larger numbers.

Taking Care of Ears

The GDA should advice patients to use all the time hearing aid in case of hearing loss. Speak slowly and clearly while facing the person, keep information simple, use words that the person can understand, use pictures and large print material. Provide enough light if the patient is reading. Repeat communication as often as needed so that the patient can understand it and remember it.



Exercise

1. Visit a nearby hospital and observe the old age patients and write the safety related requirement and care rendered by GDA in the table given below:

Human Body Part	Problem Identified	Care or Treatment given

2. Short Answer Questions:

a) Enlist the common problems of skin and nails in elderly?

b) Enumerate the common problems related to sensory organs in old age?

c) Describe the activities to be performed by GDA in providing care to elderly for the following:

(i) Long nails:

(ii) Dry skin

(iii) Wax in ears

(iv) Pressure ulcer

3. Differentiate between the following:

a) Care required for problems of muscular system and nervous system.

b) Care of incontinence and constipation.

4. Discuss the following in class:

a) How to take care of skin problems in elderly?

b) How to assist elderly with problems of eye-hand coordinated?

c) How to assist elderly with low vision?

d) How to assist and take care of patients with pressure ulcer?

SESSION 5:
Caring for Infants and Children

Relevant Knowledge

The General Duty Assistant and other healthcare workers must know how to take care of babies and children. This care must meet the special needs of these age groups. GDA, nurses and many others get a lot of joy as they care for children but there are also a lot of challenges.

The Age Groups

- INFANTS- Birth to 1 year
- TODDLER- 1 to 3 years
- PRE-SCHOOL CHILD- 3 to 5 years
- SCHOOL CHILD- 5 to 12 years
- ADOLESCENT (TEENAGER)- 12 to 18 years

An Infant

A new baby is an infant from the minute they are born until they have their 1st birthday. They are a toddler after their 1st birthday and until they are 3 years of age. These young children begin to walk and toddle around the house.

From the age of 3 until 5, a child is in the pre-school age group. The young child has not yet started the first grade of school. From 5 to 12 years of age, the child is considered a school age child.

The last stage of childhood is adolescence. A boy or girl is a teenager, or adolescent, from 12 to 18 years of age. After the age of 18, the child is considered a young adult and able to make legal decisions of their own.

Growth and Development of Children

The General Duty Assistant (GDA) and other healthcare providers must know about the major tasks for each of the age groups.

A teenager's sense of self must be encouraged when they are in the hospital for a long period of time. When this age group is in the hospital they are not with their friends. Their group of friends helps them define who they are. Friends have become much more important to the teenager than their own family. Things that each age group must do are listed below for the infant, toddler, pre-school child, school age child and adolescent.

- **Infants-** They are not yet able to do anything for themselves. They depend on others to feed them and to keep them safe. They need to be loved. They need others to keep them clean and dry. They must feel that their needs will be met as soon as they begin to cry.

- **Toddlers-** begin to take care of themselves and do things on their own. They learn to control themselves and what they do. They learn how to walk around, feed themselves, use the toilet and control their own behavior. They also want to be with their parents. They do not like people that they do not know.
- **Pre-School Children-** start to act with a purpose and a goal. They begin to feel happy about what they can do. This age group is afraid of being punished and rejected.
- **School Age Children-** want to be confident. They want to do well in school. They try very hard to please their teachers and their parents. School age children want to feel that they are competent and able to do things on their own.
- **Adolescents or Teenagers-** want to be a part of a group. They need to have a sense of self and know who they are. They form their own identity when they belong to a group. Also, they often rebel against their parents.

Keeping Children Safe

Safety is one of the most basic human needs. Children have the greatest safety needs. For example, infants will put almost anything in their mouth, including poison and small things that they can choke on. We must, therefore, prevent poisoning and choking by keeping dangerous things away from infants and small children.

Keeping Children Safe

In addition to putting strange things in their mouth, infants and young children also do NOT know the difference between things that are safe and those that are not. They are very curious and they will try just about anything. They have little or no fear of getting hurt. It is our job to watch them very closely so they do not injure themselves while we are taking care of them in the home or in the hospital.

Taking Care of Nutrition of Infants and Children

Nutritional and hydration needs also change as a person ages. Infants should be exclusively breast feed till 6 months of age. At 6 months new food should be added slowly and ONE at a time so that new foods that cause problems can be identified right away.

Infants need frequent small feedings. They have to be kept warm with a blanket and proper clothing because their body is not yet able to control its own temperature. Infants can also

become dehydrated very quickly, especially if they have diarrhea or vomiting. They have to be kept safe and away from infections because their body is not able to fight off infections as older children and adults can.

Toddlers like to eat foods that they can pick up with their hands and eat. They start to use cups, and may even begin to use a spoon to feed themselves.

Pre-school children start to decide what foods they like and dislike. They use a fork, knife and spoon to eat.

Teenagers need extra calories, protein, calcium, iron, iodine and B complex vitamins for their growth. They often do not get a good diet. They eat a lot of snacks and "fast food". They also do not stick to regular meal times. Many teenagers develop eating disorders that can lead to poor health.

The vital signs of the infant, child and pre-teen/teen are different. The usual vital signs are as follows:

Approximate ranges for vital signs

Vital Sign	Infant	Child	Pre-Teen/Teen
	0 to 12 months	1 to 11 years	12 and up
Heart Rate	100 to 160 beats per minute (bpm)	70 to 120 bpm	60 to 100 bpm
Respiration (breaths)	0 to 6 months 30 to 60 breaths per minute (bpm) 6 to 12 months 24 to 30 bpm 0 to 6 months	1 to 5 years 20 to 30 (bpm) 6 to 11 years 12 to 20 bpm	12 to 18 bpm
Blood Pressure (systolic/diastolic)	65 to 90/45 to 65 millimeters of mercury (mm Hg) 6 to 12 months 80 to 100/55 to 65 mm Hg	90 to 110/55 to 75 mm Hg	110 to 135/65 to 85 mm Hg
Temperature	All ages 98.6 F (normal range is 97.4 F to 99.6 F)	All ages 98.6 F (normal range is 97.4 F to 99.6 F)	All ages 98.6 F (normal range is 97.4 F to 99.6 F)

Infants must be held, cuddled and touched. The mother, father, sisters and brothers are the most important people to them. They do NOT want to be separated from them. They often

cry when the parents are not seen. We should encourage the family members to stay with the infant and young children, whenever this is possible. We should also help the family to care for the sick infant or child.

Infants must NEVER be left alone unless they are in a safe crib with the side rails up. They should be placed on their back and WITHOUT any pillows when they sleep. Medications, small objects and other items that are not safe and MUST be kept out of their reach.

Taking Care of Teens

The GDA should deal very cautiously and carefully with the teenagers. Some specific conditions that the GDA may have to deal with include the following:

Common disorders in adolescence

- Abdominal pain
- Acne
- Anemia
- Anxiety
- Attention deficit hyperactivity disorder (ADHD)
- Breast discharge l Breast masses l Contraception
- Delayed/early onset of menses
- Depression
- Eating disorders, including anorexia nervosa and bulimia nervosa
- Endometriosis
- Excessive hair growth
- Fertility concerns
- Gynecomastia
- Headaches
- Hormonal problems
- Mental health issues
- Menstrual problems
- Muscle strains and sprains
- Malnutritional
- Obesity
- Ovarian cysts
- Pelvic masses

- Pelvic pain
- Polycystic ovary syndrome
- Postural orthostatic hypotension
- Puberty questions
- School problems (absences and performance)
- Sexual risk behaviors
- Sexually transmitted diseases
- Skin rashes
- Sleep problems
- Sore throats
- Sports injuries
- Urinary tract infections
- Upper respiratory infections
- Vaginal discharge
- Weight loss

Some examples of typical adolescent patients include:

- Teens that are unable to focus at school.
- Adolescents who are not gaining weight or may have an eating disorder
- Teens with stomach pain who have seen other experts and are not getting better
- Teens with fatigue and dizziness who have missed over two weeks of school
- Adolescents who have some symptoms of depression or are withdrawing socially
- Young adults who are experiencing increasing anxiety

Teens (adolescents) like to be their own person. Adolescence is a time of physical maturity and the teens develop powerful emotions and rapid changes in ways of thinking. Physical and emotional changes take place at this stage. They also face pressures at school and home, which complicate their health problems. They often rebel against their parents and other people in their life, like their school teachers. They often show anger. Sometimes, they break rules and laws.

Their friends are the most important group to them. They are not happy when they are not with their friends. This age group wants to look and dress nicely. They want to be liked by their group of friends.

This gives them a sense of self. Healthcare providers must give them privacy and time with their friends.

Exercise

1. Visit a nearby hospital and observe the young patients and write the safety related requirement and care rendered by GDA in the table given below:

Age Group	Special Needs
Infant	
Toddlers	
Pre school children	
School age children	
Teen	

2. Fill in the blanks:

a) Infants – birth to.....year..... .

b) Toddler – 1 to ..... years..... .

c) Pre-school child – 3 to.....years..... .

d) School child – 5 to ..... years..... .

e) Adolescents --- 5 to .....years..... .

3. Fill in the blanks:

a) Heart rate of infants ranges from 100 to ..... beats per minute ..... .

b) Heart rate of child ranges from 70 to ..... beats per minute ..... .

c) Respiration of infant ranges from 30 to ..... breaths per minute ..... .

d) Respiration of pre-teen/teen ranges from 12 to ..... breaths per minute ..... .

e) Blood pressure (systolic/diastolic) of teens ranges from ..... mm Hg to 135/65 to 85.

f) Normal temperature range for all age groups in human beings is 97.4° .....

4. Differentiate between the following:

a) Special needs of infant and toddler.

b) Toddler and adolescent age group.

5. Discuss the following in class:

a) Development and growth of children.

b) Special care for infants and children.

Sector:
HEALTHCARE

BIO-MEDICAL WASTE MANAGEMENT

Student Workbook

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SESSION 1:
Introduction to Bio-medical Waste Management

In this session, you will learn about the concept of Bio-medical waste management. You will study about the risks involved with poor waste management, classification of hospital waste and disposal of biomedical waste.

Relevant Knowledge

Bio- medical waste is defined as "waste that is generated during the diagnosis, treatment or immunization of human beings and is contaminated with patients body fluids, such as syringes, needles, ampoules, organs and body parts, placenta, dressings, disposables plastics and microbiological wastes". India generates waste around 1-2 kg per bed per day in a hospital and 600 gm per day per bed in a clinic. This medical waste needs to be disposed off effectively. Of the total amount of waste generated by health-care activities, about 85% is general, non-hazardous waste. The remaining 15% is considered hazardous material that may be infectious, toxic or radioactive.

Definitions

Before we study the classification and disposal of hospital waste, let us first try to understand the meaning of some of the terminologies used in hospital waste management:

- Infectious waste: waste contaminated with blood and other bodily fluids (e.g. from discarded diagnostic samples), cultures and stocks of infectious agents from laboratory work (e.g. waste from autopsies and infected animals from laboratories), or waste from patients with infections (e.g. swabs, bandages and disposable medical devices);
- Pathological waste: human tissues, organs or fluids, body parts and contaminated animal carcasses;
- Sharps waste: syringes, needles, disposable scalpels and blades, etc.;
- Chemical waste: for example solvents and reagents used for laboratory preparations, disinfectants, sterilants and heavy metals contained in medical devices (e.g. mercury in broken thermometers) and batteries;
- Pharmaceutical waste: expired, unused, contaminated drugs and vaccines;
- Cytotoxic waste: waste containing substances with genotoxic properties (i.e. highly hazardous substances that are, mutagenic, teratogenic or carcinogenic), such as cytotoxic drugs used in cancer treatment and their metabolites;
- Radioactive waste: such as products contaminated by radionuclides including radioactive diagnostic material or radiotherapeutic materials; and Non-hazardous or

general waste: waste that does not pose any particular biological, chemical, radioactive or physical hazards.

These types of wastes may be generated from various sources. As per the nomenclature the waste generated includes as follow:

1. **General Waste:** The waste generated from office, administrative offices, kitchen, laundry and stores.
2. **Sharps:** Hypodermic needles, needles attached to tubing, scalpel blades, razor, nails, broken glass pieces, etc.
3. **Infected waste:** Equipment and instruments used for diagnostic and therapeutic procedures, waste from surgery like tissues and organs removed and autopsy.
4. **Chemical waste:** Formaldehyde used for preserving tissues and organs, fixer and developers used in radiology department. Solvents like xylene, acetone, ethanol and methanol used in laboratories.
5. **Radioactive waste:** Various radioactive wastes generated through the activities of the department like research activity, clinical laboratory and nuclear medicine department.
6. **Cytotoxic drugs:** Various anti-cancer drugs.

Hospital Waste Management

The hospitals are visited by the patients for treatment and they are accompanied by close associates, friends or relatives, who prefer to stay with patients for taking care of their non-medical needs. In addition to the attendants of the patients, a large number of visitors also visit the hospital. Therefore, involvement of hospital staff along with the patients and relatives becomes very important for proper segregation and management of Hospital waste.

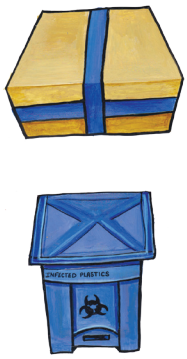
The staff working in hospitals is directly exposed to the risks of hospital wastes. The healthcare worker by virtue of their profession has to work with sharps like a needles, blades, etc. and they are at risk of contracting that infection. There is a risk of transmission of infections by Human Immunodeficiency Virus / Acquired immune-Deficiency Syndrome (HIV/AIDS), and Hepatitis B and C viruses. The implications of the management of hospital waste by health care workers and hospital administration can be emphasized on the basis of following points:

(i) The hospital staff is responsible for generating, segregating, collecting, storing and treating of the hospital waste.

(iii) The hospital authorities must organize teaching and training programmes for the healthcare workers and must provide appropriate protectives measures including gloves, masks, foot wears, goggles, gum boots, gowns, head gear, etc.

It is essential to segregate the wastes suitably as per the latest guidelines in the designated bins rather than putting it all in a single bin. This requires not only arrangement of separate bins but also the appropriate training of the hospital staff accordingly.

Table 2: Storage of Biomedical Waste

S.No.	Category	Type of waste	Colour & Type of Container
1.	Yellow Category	– Human Anatomical Waste – Animal Anatomical Waste – Soiled Waste – Discarded or Expired Medicine – Microbiology, Biotechnology and other clinical laboratory waste – Chemical waste (yellow-e) – chemical Liquid Waste	Yellow coloured non-chiorinated Plastic Bags  **Note:** (i) Chemical Waste (yellow-e) comprising of un-used residual or date expired liquid chemicals including spent hypo of X-Ray, should be stored in yellow container
2.	Red Category	Contaminated Waste (Recyclable)	Red Coloured Non Chlorinated Plastic Bags (having thickness equal to more than 50 µ) and Containers 
3.	White Category	Waste Sharps including metals	White Coloured translucent, puncture proof, leak proof, Temper Proof containers 
4.	Blue Category	• Glassware • Metallic Body Implants	Puncture proof, leak proof boxes of containers with blue coloured marking 

The internal environment of the hospital has got direct communication with the outside environment. The gases and heat generated inside the hospitals are exhausted into the external environment. The internal environment of the hospital is contaminated with bacteria, viruses and parasites, which can pose a threat of spreading infection to the outside environment. The foul gases from mortuary or foul smelling discharges from the labour room, pathology department, anatomy department are discharged directly to the outside environment, which is responsible for environmental pollution. All such activities have invited attention of the environmentalists and the Government has enacted laws to protect the health of the people and also to safeguard the environment.

Hospital acquired infections (Nosocomial Infections): Nosocomial infections are infections that have been acquired in a hospital and are potentially caused by organisms that are resistant to antibiotics. It is the infection that was not present or incubating prior to the patient's admission in the hospital but occurs within 72 hours after admittance to the hospital. The sources of hospital acquired infection can be self, by other patients, attendants, visitors and hospital staff or through fomites (any object or substance capable of carrying infectious organisms)

The routes of transmission of infection can be:

a) Air borne for example, through inhalation of hospital dust.

b) Direct contact for example, through abrasions on the skin, or through the mucous membrane.

c) Faeco – oral route for example, through ingestion of food, water with contaminated hands

d) Parenteral route during the process of injections and infusions.

e) Through equipment and materials.

Exercise

1. Visit a nearby hospital. Wear personal protection equipment and identify the different wastes. Classify them according to the latest guidelines.

2. Short Answer Questions:

a) Enlist the risks involved in poor waste management in hospital?

b) What is Bio-medical waste?

c) How bio-medical waste management helps in environment protection?

d) Describe the importance of bio-medical waste management?

e) What is nosocomial infection?

3. Differentiate between the following:

a) Medical waste and clinical waste.

b) Infectious waste and hazardous waste.

c) Pathological waste and general waste.

d) Air borne route and oral route of transmission of infection.

4. Discuss the following in class:

a) Classification of bio-medical waste.

b) Waste management system in hospitals.

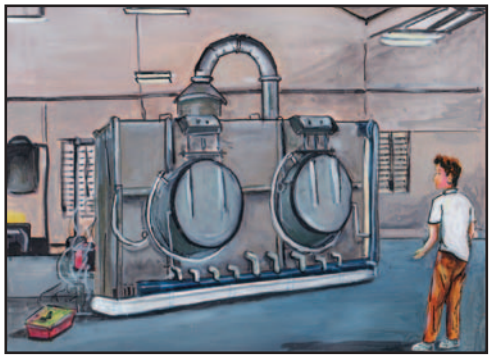
SESSION 2:
Sources and Disposal of Bio-medical Waste

In this session, you will learn about the sources and disposal methods of bio-medical wastes.

Relevant Knowledge

Sources of biomedical waste

Biomedical waste is generated from biological and medical sources and activities in hospitals, clinics, healthcare organizations, veterinary hospitals, etc. let us now try to identify the various generators of biomedical wastes. The sources can be broadly grouped as follows:



Bio-Medical Service

1. **Hospital**

   Hospitals of all categories like general, specialist hospitals, private as well as public sector. Waste is generated from all departments (clinical, paraclinical, preclinical) including wards, Operation theaters, intensive care units, out patient department, kitchen etc.

2. Clinics including immunization clinics, maternal and child health clinics, dialysis centres, dispensaries etc. Other Healthcare organizations such as geriatric homes, mentally challenged center Support Services like blood banks, pharmacy, mortuary, laundry, Laboratories

3. Veterinary Hospitals

Disposal of Wastes

Biomedical waste should not be mixed with other wastes for disposal. It should be treated and disposed off as per guidelines issued by Government of India and in compliance with the standards prescribed in schedule V of the notification of Bio Medical Waste (BMW) rules of Ministry of Environment & Forest, Govt. of India. Once the wastes have been treated by one or the other method it is to be finally disposed of in the following manner:

1. Disposal of human anatomical, blood and body fluids as per central government guidelines.
2. Disposal of sharps: the needles should be destroyed by the needle destroyers and other sharps and stored in puncture proof container.

White coloured transucent puncture proof sharps container

3. Disposal of microbiological and bio-technological wastes: This is done by autoclaving hydroclaving, microwave or incineration.
4. Disposal of pharmaceutical wastes: The preferred method is by incineration and the ash can be disposed of by land filling.
5. Disposal of infectious solid waste: it is first treated and converted to non – hazardous waste which is then disposed of as general waste.
6. Disposal of chemical waste: Non-hazardous waste is disposed of as general waste and hazardous waste is first converted into non – hazardous waste and then disposed of as general waste.
7. Disposal of radioactive wastes: This is done in accordance with the guidelines issued by the Bhaba Atomic Research Centre (BARC).

All records are subjected to inspection and verification by the prescribed authority at any time. The authorized person maintains records related to generation, collection, reception, storage, transportation, treatment disposal and/or any form of handling of bio-medical waste. No untreated bio- medical waste should be kept beyond a period of 48 hours.

Exercise

1. Visit a nearby hospital and identify the various types and sources of bio-medical wastes:

Name of waste	Department generating such waste
Needle	
Human Organs/tissues	
Plastic materials	
Infectious dressing pad	

2. Visit a nearby hospital and study the methods/techniques of disposing the bio-medical waste: Fill in the method(s) used for disposal of wastes:

Waste	Methods/techniques adopted
General / non-hazardous waste	
Water and liquid waste	
Human anatomical, blood and body fluids	
Sharps	
Microbiological and bio- technological wastes	
Pharmaceutical wastes	
Infectious solid waste	
Chemical waste	
Radioactive wastes	

3. Short Answer Questions:

a) Enlist the sources of bio-medical waste.

b) Describe the method of disposing of microbiological wastes in hospitals.

4. Differentiate between the following:

a) Sources of solid and liquid wastes in hospitals.

b) Chemical and radioactive waste.

5. Discuss the following in class:

a) Sources of generation of bio-medical wastes.

b) Disposal techniques of wastes.

SESSION 3:
Segregation Transportation of Bio-medical Waste

In this session, you will learn about segregation, packaging, transportation and storage of bio-medical waste. You will study the colour coding criteria recommended by the Government of India guidelines for Management of Healthcare Waste 2016

Relevant Knowledge

The following points should be remembered while segregating, packaging, transportation and storage of biomedical wastes:

Transport of Bio-Medical Waste

1. Biomedical waste should not be mixed with other wastes.
2. Biomedical waste should be segregated into containers/ bags at the point of generation.

   If a container is transported from the premises where biomedical waste is generated to any waste treatment facility outside the premises, the container should, apart from the label prescribed as per latest guidelines 2016.
3. Untreated biomedical waste should be transported only in such vehicle as may be authorized for the purpose by the competent authority as specified by the government.
4. No untreated biomedical waste should be kept stored beyond a period of 48 hours. Provided that if for any reason it becomes inevitable to store beyond 48 hours,the authorized person must take permission of the prescribed authority and take measures to ensure that the waste does not adversely affect human health and the environment.

Transportation of Biomedical Wastes

Transportation of bio-medical wastes can be divided into intramural (internal) and extra mural (external) transportation.

1. Intramural (internal) transport

The sanitation staff from the centralized team should be responsible for transporting the different coloured polythene bags in garbage bins from the sluice room (dedicated place

where used disposables such as incontinence pads, bed pans and reusable products are cleaned and disinfected), nursing station and treatment room of each ward. Push carts and garbage trollies designed for the purpose should only be used. From all the floors and wings, the waste should be taken to the designated site of the hospital. Any spillage or leakage should be reported to Sanitation Inspector Incharge, and it is his/her responsibility to get the respective trolleys/carts cleaned and disinfected.

2. Extramural (external) transport

Only general waste collected in the black coloured plastic bags should be transported in the vehicle by the Municipality authorities. The request should be made by the hospital authorities to the Municipal authorities to send the vehicle once in a day without any failure. The segregated biomedical waste should be transported to the Common Bio Medical Waste Treatment Facility (CBWTF) as per latest Government of India 2016 guidelines.

Exercise

1. Visit a nearby hospital and observe the segregation process of bio-medical waste. Do not forget to wear personal protective equipment. Identify the type of bio- medical waste and fill the table given below:

Type of bio- medical waste	Class of Waste	Type of Container	Waste Category No.	Colour Code
Needle				
Human Organs/ tissues				
Plastic materials				
Infectious dressing pad				

2. Short Answer Questions:

a) How bio-medical waste is treated in a hospital?

b) How general waste is disposed of by hospital?

c) Describe the colour code for the following types of waste:

(i) General non hazardous waste:

(ii) Sharps:

(iii) Infected waste:

(iv) Chemicals:

(v) Human anatomical waste:

3. Differentiate between the following:

a) Types of biomedical wastes.

b) Extramural and intramural transport of bio-medical waste.

3. Discuss the following in class:

a) Importance of color coding in bio-medical waste management.

b) Transportation of bio-medical waste.

c) Disposal of hospital waste.

SESSION 4:

Role of Hospital Staff in Bio-medical Waste Management Waste

In this session, you will learn about the roles and functions of authorities or personnel involved in bio-medical waste management in a hospital. You will also study the importance of providing training to the staff of the hospital.

Relevant Knowledge

(A) Role of Medical Superintendent/Director

The overall responsibility of Medical Superintendent/Director along with the infection control committee is to implement the guidelines for hospital waste management and ensure that waste is handled without any adverse effect on human health and environment. They are responsible for submitting an annual report on biomedical waste management. They are answerable to the higher authorities regarding implementation of biomedical waste management policy.

Disposal of solid waste in yellow bag

(B) Functions of Hospital Waste Management Committee

1. To ensure the circulation of Bio-medical Waste Rules and guidelines in Departments.
2. To conduct awareness programmes regarding bio-medical waste management.
3. To conduct training programmes for Medical Professionals, Nursing Professionals, General Duty Assistant and other staff on biomedical waste management.
4. To hold a meetings of the Hospital Waste Management Committee and formulate a detailed plan of action in regard to segregation, collection, storage and transport of waste. To procure the items required in this regard and make them available.

Each Clinical Department (Unit), Lab Services, Blood Bank, Microbiology, Pathology shall make one Faculty Member responsible for supervision of segregation of biomedical waste in their area of activities. Floor wise nurses and GDAs are responsible for supervision of segregation in the wards of each floor. In each and every OT one Incharge is responsible for segregation of waste.

(C) Role of Officer Incharge of Waste Management

The Officer Incharge of Bio-medical Waste Management liaise with the Heads of Departments, Infection Control Officer and Matron. He is a member of the Hospital Waste Management Committee. He is responsible for monitoring the programme from time to time at various levels i.e. generation, segregation, collection, storage, transportation and treatment (including disposal). He is responsible for circulation of all policy decisions and the hospital waste management manual.

(D) Role of Heads/Incharge of Labs/Units/Departments

They are responsible for the formulation and implementation of waste management procedures for their departments which should be done in conformity with the general guidelines issued by the administration. They shall also be responsible for getting all staff, doctors, nurses, paramedics and may be replaced with hospital/trained in hospital waste management, and shall liaise with the Officer Incharge of bio-medical waste management for administrative support. With regard to the departments which generate radioactive waste, one of the consultants should be designated as Radiation Protection Officer and he/she shall be responsible for implementation of necessary guidelines.

(E) Role of Matron / Nursing Superintendent

The Matron shall designate one of the senior administrative level deputies as Sister In-charge of Hospital Waste Management, who shall be responsible for close monitoring of the activity. She shall conduct surprise rounds and shall review and evaluate the various aspects of scientific hospital waste management at all levels from generation and segregation to final disposal. She shall also attend the meetings of Hospital Waste Management Committee on behalf of the Matron and co-ordinate the training of nurses on Hospital Waste Management with administration.

(F) Role of Sanitation Inspector

The In-charge Sanitation Inspector is responsible for the implementation, monitoring and evaluation of hospital waste management from collection and storage of hospital waste to its final disposal. He/she attend the Hospital Waste Management Committee meetings and ensure the training of the staff. Regular in-service training and evaluation of the sanitation attendants carried out by him/her. He/she shall also provide feedback information to Officer In-charge waste management in case of accidents and spills.

Training on Hospital Waste Management

In order to be able to comprehend and implement the Bio-medical waste management, it is mandatory to provide training to all categories of staff i.e. resident doctors, nurses,

paramedical staff, GDA, attendants, canteen staff, etc. The training of BMW, as per the requirement of the respective cadres, should be interactive and should include awareness sessions, demonstrations and behavioural science inputs. It should include the following:

(i) Awareness of different categories of waste and their potential hazards

(ii) Waste minimization

(iii) Segregation policy

(iv) Proper and safe handling of sharps

(v) Use of protective gear

(vi) Colour coding of containers

(vii) Appropriate treatment of waste

(viii) Management of spills and accidents

(ix) Occupational health and safety

Exercise

1. Visit a nearby hospital and observe the duties performed by health personnel involved in bio- medical waste management?

2. Short Answer Questions:

a) State any two functions of hospital waste management committee?

b) State any two duties of medical superintendent/director regarding bio medical waste management?

c) Describe the role of GDA in hospital waste management?

3. Differentiate between the following:

a) Role of officer in-charge and sanitation in-charge in bio-medical waste management?

b) Role of sister in-charge and sanitation inspector in-charge in biomedical waste management?

4. Discuss the following in class:

a) Role of GDA in bio-medical waste management?

b) Significance of training of staff on hospital waste management?

c) Role and functions of authorities of hospital in bio-medical waste management?

Sector:
HEALTHCARE

OPERATION THEATRE

Student Workbook

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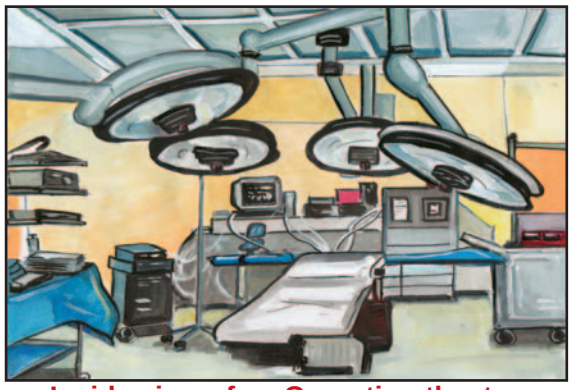
SESSION 1:

Zones and Areas in Operation Theatre Complex

In this session, you will learn about the aims of planning of operation theatre (OT) and the zones and areas in Operation Theatre complex.

Relevant Knowledge

An operating theatre, operating room or surgery suite is a room within a hospital, within which surgical operations are carried out in a sterile environment. The Operation Theatre complexes are designed and built to carry out investigative, diagnostic, therapeutic and palliative procedures These setups are customized to the requirements based on size of hospital and patient turnover and may also be designed to suit the speciality needs.



Inside view of an Operation theater

The need for safety, convenience and economy guide the planning of a modern operation theatre complex, whatever the size, number or the speciality. Efforts are directed to maintain vital functions, prevent infections/ promote healing with safety, comfort and economy.

Aims of Planning

(i) To promote a high degree of asepsis.

(ii) Ensure maximum safety to patients and staff working in OT.

(iii) Ensure maximum utilization of the OT.

(v) Ensure maximum comfort to the surgical team, considering long hours of work in difficult posture.

(v) To provide complete environmental control.

(vi) Flexibility of uses of operating suites.

Location

The best location for the OT is the one which permits a convenient and planned flow of patients and staff. It should be close to surgical wards and Intensive Care Unit (ICU). OT receives patients from the floor through non-public corridor, elevators and ramps. Convenient access to elevators is, therefore, essential.

Size

The size of OT will depend upon the surgical facilities:

(i) General Operating Room – 40 sq. meters.

(ii) The Endoscopy suite will require a procedure room of 20 sq. meter.

(iii) For OT of 200 – 300 bed district hospital the optimum size is 18" x 18" to 18" x 20" but not more than 400 sq. feet.

Zones in OT Complex

Additional space may be required for additional equipments, as per the speciality e.g.- fluroscope, imaging device, heart lung machine, surgical robots. The location and flow of patients, staff and various equipments decides the OT complex to be divided into different zones. These zoning are based on the need of variable level of cleanliness and sterility. Conventionally, the OT complex has been divided into four zones:

1. Protective Zone
2. Clean Zone
3. Aseptic Zone
4. Disposal Zone

1. Protective Zone:

It is the outermost entry/exit zone of the OT complex. It includes:

(a) Changing rooms for OT staff (doctors, nursing staff and other support staff).

(b) Patient's waiting area and reception

(c) Rooms for administrative staff

(d) Stores and records room.

(e) Receiving area for various materials and equipments

2. Clean zone:

It connects the protective zone to the aseptic zone. It includes:

(a) Pre-operating room

(b) Recovery room

(c) Store room for sterile equipment and consumables.

3. Sterile/Aseptic zone:

It includes operation rooms which are kept sterile. This zone includes:

(a) Operating room/suite in particular

(b) Scrubbing station/ room and gowning area/ room.

(c) Pre-Anesthesia room

(d) Sterile Instruments trolley area.

4. Disposal Zone:

Areas in this zone include dirty utility and disposal corridor. Disposal areas from operating room and connecting corridors lead to Disposal zone. The connecting corridors are outside the aseptic zone.

Sub Areas (excluding OT place) for various OT related activities:

(1) **Pre-operative check in area (reception)-** It is used to maintain privacy, for changing clothes and wearing gown and to provide lockers and lavatories for staff.

(2) **Holding area for patient-** This area is planned for IV line insertion, preparation, catheter/ gastric tube insertion, connection of monitors, etc.

(3) **Anaesthesia Induction room -** It provides space for anaesthetic trolleys and equipment as per performing anaesthesia related interventions

(4) **Post anaesthetic care units (PACU) –** It contains a medication station, hand washing station, nurse station, storages pace for stretchers, supplies and monitors/ equipment and gas, suction outlets and ventilator.

(5) **Staff room –** Men and women change dress from street clothes to OT attire.

(6) **Sanitary facility for staff-** One wash basin and one western closet is usually provided.

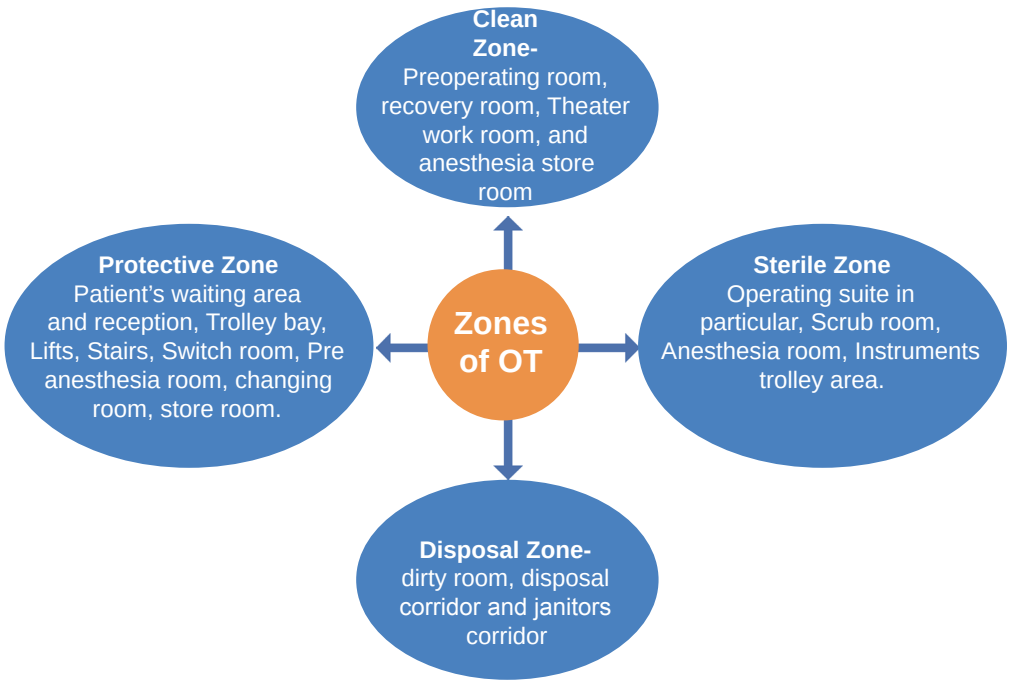
(7) **The anaesthesia gas / cylinder manifold room / storage area -** It should be in a cool, clean room that is constructed of fire resistant materials.

(8) **Laboratory –** Laboratory facility should be available.

(9) **Theatre sterile supply unit (TSSU)-** In this area temperature between 18 to 22°C,humidity of 40 to 50% is maintained. Sterile drapes, sponges, gloves, gowns and other items ready to use are stored in this unit.

Proper inventory of the items required is maintained in this unit.

Adequate water supply, electricity back up and cleanliness is maintained in the OT complex



Exercise

1. Short Answer Questions:

a) Briefly explain the purpose of the operation theatre?

b) List the different zones of the operation theatre?

2. Differentiate between the following:

a) Protective and sterile zone of OT.

b) Clean and disposal zone of OT.

c) Pre-operating room and recovery room.

3. Discuss the following in class:

a) Ideal location of OT.

b) Purpose of OT.

c) Zones of operation theatre.

SESSION 2:
Organization of Operation Theatre (OT)

In this session, you will learn about the range of equipment of operation theatre (O.T.). You will also study the staff associated with an operation theatre.

Relevant Knowledge

Operation theatres are mainly utilized by the surgical departments for conducting various surgeries with the help of the anaesthesia department with other paramedical staff, the optimal management of various surgeries requires a team approach including various departments and support units. There should be perfect planning of the OT scheduling, timely preparation, complete Pre-anesthesia checkup (PAC), preoperative treatment and shifting of patient to O.T. With the advancement in technology and improvement of the surgical skills, more complex surgeries are being done and include, simultaneously, various other specialities.

The OT Staffing includes:

1. Doctors: Surgeons (from various surgical specialities like General Surgery, ENT Surgery, Orthopedics Surgery etc), Anaesthesiologists and other ancillary medical staff like radiologists, pathologists, etc.
2. Nursing staff
3. OT Technicians
4. Other support staff: like Store keeper, Record keeper, Nursing assistants, General Duty Assistants (GDA), sanitation staff etc.

Equipment in O.T. Complex

The modern O.T. complex is highly equipped. The range of equipment of OT will depend upon the OT of a particular specialty. The requirement of equipment in the OT complex includes equipment and furnitures. All OT complex areas must be equipped with medical gases delivery system. (Oxygen, Nitrous Oxide, medical air along with a dedicated suction line)

Medical Equipment: The requirement of medical equipment varies with the type of surgeries routinely being done in a particular operating room. The common medical equipment includes:

1. OT table(s) and OT lights
2. Anesthesia machine(s)/ Workstations
3. Patient monitors [Electrocardiography (ECG), Blood Pressure (BP), Oxygen saturation, etc and Defibrillator(s)]

4. Drugs and Drug Trolleys.

5. Various surgical equipment required for performing surgeries.

Medical Furniture: This is specified furniture for the use of patients in the operation theatres and other hospital areas. These are usually different from household furniture specifically with regards to their fixity, mobility, cleanliness, lightweight, adjustability, with safety features. E.g. Hospital beds, hospital couches, patient transfer trolleys, storage cabinets for medicines and equipments.

Office furniture: In addition to the above, office furniture like chairs, tables, filing cabinets, almirahs, lockers etc. are required in the rooms in protective zone for record keeping, administrative work etc.

Training of Staff

All staff members should be trained in the maintenance of asepsis and universal precautions. All the medical staff, nursing staff, technical and non technical staff have different responsibilities and they all work in close harmony.

Training of staff is done on “technical skills” and ”non-technical skills”. The former includes the psychomotor dexterity, coordination and decision making that are required to carry out complex psychomotor tasks (e.g. to successfully do a surgical or anaesthesia procedure). This requires dedicated training programme like B.Sc. (Nursing)/ MBBS/ MS/ MD and subsequent super specialization in their respective fields. In case of the latter, a healthcare provider is trained to work effectively as a member of a team and should possess skills like communication skills, leadership skills, interpersonal skills, coping with stress, etc.

Patient safety is of utmost importance. Open communication and effective interdisciplinary teamwork helps in successfully achieving the target of providing safety to the patients. Teamwork can be defined as a set of interrelated behaviours, actions, cognitions and attitudes that facilitate the required task work that must be completed. Team members must possess specific knowledge, skills and attitudes to achieve the goals.

Exercise

1. Visit a nearby hospital and prepare the list of staff working in the OT.

Staff	Roles and Functions

2. Short Answer Questions:

a) List any five professional and staff generally present in OT?

b) What kind of training is required for OT staff?

3. Differentiate between the following:

a) Medical furniture and office furniture?

b) Sterile Zone and Clean Zone?

4. Discuss in class the following:

a) Training of staff of OT?

b) Equipment in OT?

SESSION 3:
Preparation of Patient for Operation

In this session, you will learn about the role of GDA in the preoperative preparation of the patient.

Relevant Knowledge

The General Duty Assistant or the Patient Care Assistant assists the team in OT. The various activities or tasks in which the GDA/PCA is involved is listed below:

The Operating Team

(I) Pre-operative Preparations

1. The drugs that the patient is receiving are noted.
2. The patient's general condition is noted.
3. An adequate & light food is given.
4. Prosperative balanced diet is given to the patient.
5. Adequate liquids and water are given to the patient. If the patient is not to take anything orally, intravenous fluids are given to maintain fluid and electrolyte balance.
6. The patient is prepared mentally for various investigations he/she has to undergo.
7. Preoperative investigations are done, so as to ensure fitness for anesthesia and surgery.
8. If the patient's hemoglobin is low, it is build up by the administration of appropriate therapy including blood transfusions.
9. Any medical disorders present are treated appropriately so that they are under control at the time of the surgery.

10. Written informed consent is obtained from the patient and his relatives if required for the operation to be performed.
11. A sedative is administered on the night before surgery to reduce anxiety and ensure adequate rest.
12. Vital parameters are checked and recorded twice a day or more if required.

(II) Local Preparation for Surgery

1. The surgical site hair are removed usually.
2. The patient is asked to take a bath in including the surgical site.
3. The patient is given clean clothes to wear.

(III) Preparation before sending the Patient to O.T.

1. The patient is given a long gown to wear, which opens on the back.
2. The patient is given long socks to wear so that he/she does not feel embarrassed.
3. Lipstick and nail polish are removed before oneday. This is important because the anesthetist has to note pallor and cyanosis, which will not be seen in the presence of the colour.
4. The head is covered with a triangular bandage or a cap so that all hairs are covered.
5. Dentures are removed.
6. Spectacles or contact lenses are removed.
7. All ornaments including wrist watch, bangles, etc. are removed.
8. A label is tied around the wrist of the patient, giving the following information.
    a. Name
    b. Indoor number
    c. Doctor's name
    d. Ward
    e. Diagnosis
    f. Operation to be done
9. The patient is asked to pass urine before operation.
10. The drugs prescribed to be given pre-operatively are given. Appropriate records are maintained by the drug administration.
11. The patient is taken to the operation theater on a trolley, along with his case papers and reports of his investigations.

Exercise

1. Visit a nearby hospital and observe how patient is prepared for OT. Fill the table given below.

Name of Surgery	Preoperative Care given

2. Short Answer Questions:

a) Describe the general duties of GDA in pre-operative preparation of the patient?

b) What information is written on patient's wrist band?

c) Enlist the major parameters assessed through physical examination in preoperative care of patient?

3. Differentiate between the following:

Preoperative and post operative care?

4. Discuss in class the following:

a) Role of GDA in providing pre-surgery care?

b) Preparation of a patient for surgery?

SESSION 4:
Post-operative Care

In this session, you will learn about the care rendered by General Duty Assistant (GDA) in the post operative phase.

Relevant Knowledge

The GDA is responsible for the following tasks or activities in the post operative phase:

1. The patient's bed should be prepared before he comes back from the operation theater. Other preparations include the following:

   (a) The bed should be kept warm with the use of hot water bottles and bags, in winter and cold environment.

   (b) Extra blankets should be to keep to keep patient warm.

   (c) The following articles are kept ready near the bed as per need and nature of operation the patient had under gone.

      (i) Oxygen cylinder

      (ii) I.V. fluid stand

      (iii) Monitors

      (iv) Injection tray

      (v) Intravenous infusion tray

Instrument Trolley

2. It is preferable to have a recovery room in which the patient is kept before he/ she can be shifted to the ward. There is dedicated doctors, Nurses and GDA in the recovery room, so that the patient receives better care than he would in the ward. The following equipment is kept ready in the recovery room:

   (a) Suction machine

   (b) Oxygen

   (c) Monitoring device (Pulseoxymeter, BP, ECG)

   (d) Equipment for intravenous infusion

   (e) Blood transfusion equipment

   (f) Ventilators

   (g) Oxygen delivery devices

   (h) Cardiopulmonary resuscitation equipment and crash cart

3. Before bringing the patient from the recovery room the following observations are made:
   (a) Patency of airway
   (b) Respiration: normal or abnormal
   (c) Temperature
   (d) Pulse
   (e) Blood pressure
   (f) Cyanosis
   (g) Recovery from anesthesia
   (h) Nature of the operative area.
   (i) Drainage sites and tubes
   (j) Patency of the intravenous line
   (k) Presence of catheters and tubes
      (i) Urinary catheter
      (ii) Nasogastric tube
   (l) Completeness of indoor papers and postoperative orders.
   (m) Special instruction, if any
4. When the patient is brought to the ward, he is placed on the bed. The tubes and catheters are connected appropriately. The intravenous infusion bag or bottle is hanged from the saline stand.
5. Some patient are kept in recovery position which maintains his airway by preventing the following
   (a) Tongue falling back.
   (b) Aspiration of secretions
   (c) Aspiration or regurgitated stomach contents.
6. Moist oxygen is given by face mask or nasal catheter if the patient has undergone major.
7. The patient's temperature, pulse, and respiratory rate are noted as soon as the patient is brought to the ward, because these parameters can change while the patient is being shifted out of the ward. If there is any change, it should reach the normal level in a short period. If it does not, something could be seriously wrong with the patient. These parameters are examined every half hour to see if pulse change. In case the patient bleeds internally or externally, the pulse becomes rapid, and after severe bleeding, the respiration becomes rapid due to hypoxia.
8. The patient should be kept warm. However overheating is to be avoided. Since it can lead to perspiration, dehydration, and electrolyte imbalance.

9. Fluids like normal saline and Ringer's lactate are given intravenously to make up for the fluid loss during surgery and restore the fluid and electrolyte balance. 5% dextrose is given to supply calories. Over infusion of fluids should be avoided because that can lead to pulmonary edema & fluid retention.
10. If intravenous fluids are to be infused over prolonged periods. Serum electrolyte levels are checked periodically.
11. The patient is allowed to sleep in a comfortable position when he is fully conscious. He is permitted to move in bed and from the second day allowed to get out of the bed, unless he has a serious problem. Early mobilization reduces the risk of the following complications.
    (a) Deep vein thrombosis.
    (b) Pulmonary embolism
    (c) Hypostatic pneumonia.
12. Some patients vomit during and after recovery from anesthesia. Then to medicine is used.
13. Flatulence is seen often after abdominal surgery. This may cause uncasiness the patient it gradually reduces with early ambulation.
14. Pain is experienced during the first few days after the surgery. It does not permit the patient to sleep well at night.
15. Diet
    (a) After the patient has fully recovered from anesthesia and is feeding nauseated he/she is initially given sips of water to drink. When he/she is found to tolerate that well, he is given liquids orally e.g. tea, coffee, coconut water, fruit juices, etc. gradually. But the condition depends on type of surgery & patients consiousness.
    (b) The next day he/she is given soft diet, in non gastric intestinal surgery.
    (c) The following day he is given balanced diet.
16. Subsequently the patient is given adequate diet orally and will pass stools. If he does not, he is given.
17. There is a risk of retention of urine postoperatively. It may be due to any of the following reasons, as shown in the following table.

Cause	**Measure for correction**
Pain	Analgesic drugs
Lying down position	Make the patient sit up with support for passing urine.
Lack of privacy	Put screens around the patient's bed.
Spasm of bladder neck	Application of hot water bag to the lower abdomen.
	Sound of running water.

18. If all measures fail at relieving the retention of urine, the bladder is catheterized. Repeated episodes of retention of urine are managed by the use of a self retaining urinary catheter.
19. Deep breathing exercises are advised to patients who have undergone abdominal surgery.
20. If the patient is unable to breathe on his own, he may require endotracheal intubation or tracheostomy and ventilation using a mechanical ventilator.
21. The dressing on the wound is not changed unnecessarily so as to reduce the risk of wound infection. It is changed if it gets soaked by blood or discharge. In case of wound infection, the dressing is changed as frequently as required.
22. The sutures are removed after 7 days or more depending on site of surgery. If the wound has healed well. The sutures line is left open.

Exercise

1. Visit a nearby hospital and observe the post surgery care given to patient. Fill the table given below accordingly:

Name of Surgery	Preoperative Care given

2. Short Answer Questions:

a) What is the importance of the fowler's position in post operative care?

b) Explain the briefly the Pre-operative preparation for patient?

c) Enumerate the cause of urine retention & measure to over come them in post operative period.

3. Differentiate between the following:

a) Observation to be done prior to recovery room and in the recovery room.

b) Post operative care and pre operative care.

c) Recovery room and general room in hospital.

4. Discuss in class the following:

The role of GDA in providing post operative care.

Sector:
HEALTHCARE

ROLE OF GENERAL DUTY ASSISTANT IN DISASTER MANAGEMENT AND EMERGENCY RESPONSE

Student Workbook

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SESSION 1:
Disaster Management and Emergency Response

In this session, you will learn about goals, cycle and phases of disaster management. As a healthcare worker, you should develop the ability to identify the critical events in disaster and take necessary steps to notify the concerned authority or prevent the spread. You should also be able to understand the response to be made to personal, environmental and public safety as per the regulations and norms.

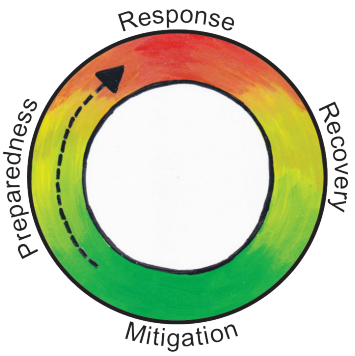
Relevant Knowledge

A disaster results from the combination of hazard, vulnerability and insufficient capacity or measures to reduce the potential chances of risk.

A disaster happens when a hazard impacts on a vulnerable population and causes damage, casualties and disruption. Any natural hazard such as flood, earthquake or cyclone which is a triggering event along with greater vulnerability would lead to disaster causing greater loss to life and property. Vulnerability includes inadequate access to resources, sick and old people, lack of awareness, lack of training, etc.

Vulnerability and risk to disaster will depend on certain conditions, for example, an earthquake in an uninhabited desert cannot be considered a disaster, no matter how strong it is. The hilly regions, on the other hand, are vulnerable to various kinds of disasters such as avalanches, landslides, hailstorms or cloudbursts.

Disaster Management covers a broad range of interventions before, during and after a disaster to prevent, minimize the loss of life and property and to accelerate recovery. The manner in which human beings deal with disasters improved as technology developed and our approach to risk assessment and mitigation measures became more and more scientific. Earlier, disaster management was reactionary and we could not prevent or mitigate the damage. But now we have developed pre-disaster mitigation measures to avoid or reduce the impact of disasters. Pre-disaster measures to prevent or mitigate disasters are called Risk Management.



Phases in Disaster Management

Goals of Disaster Management

The goals of disaster management are to:

1. Reduce, or avoid, losses from hazards;
2. Assure prompt assistance to victims; and
3. Achieve rapid and effective recovery.

The disaster management cycle illustrates the ongoing process by which governments, businesses, and civil society plan for and reduce the impact of disasters, react during and immediately following a disaster, and take steps to recover after a disaster has occurred. Appropriate actions at all points in the cycle lead to greater preparedness, better warnings, reduced vulnerability or the prevention of disasters during the next iteration.

The complete disaster management cycle includes the shaping of public policies and plans that either modify the causes of disasters or mitigate their effects on people, property and infrastructure. The mitigation and preparedness phases occur as disaster management improvements are made in anticipation of a disaster event. As disaster occurs, key personnel in disaster management, especially humanitarian organisations, become involved in the immediate response and long-term recovery phases.

Phases in Disaster Management

The four disaster management phases are as follows:

1. Mitigation – It includes steps taken to minimise the effects of a disaster. Examples include building codes, vulnerability analysis, zoning and land use management, preventive healthcare and public education.

2. **Preparedness:** It involves planning to respond to a disaster. It includes preparedness plans, emergency exercises or training, and warning systems.

   The goal of emergency preparedness programmes is to achieve a satisfactory level of readiness to respond to any emergency situation through programmes that strengthen the technical and managerial capacity of governments, organizations, and communities. These measures can be described as logistical readiness to deal with disasters and can be enhanced by having response mechanisms and procedures, rehearsals, developing long-term and short-term strategies, public education and building early warning systems.

   Preparedness can also take the form of ensuring that strategic reserves of food, equipment, water, medicines and other essentials are maintained in cases of national or local catastrophes. During the preparedness phase, governments, organizations, and individuals develop plans to save lives, minimize disaster damage, and enhance disaster response operations.

   Preparedness measures include,

   (i) preparedness plans;

   (ii) emergency exercises/ training;

(iii) warning systems;

(iv) emergency communication systems;

(v) evacuation plans and training;

(vi) resource inventories;

(vii) emergency personnel/ contact lists;

(viii) mutual aid agreements; and

(ix) public information and education.

As with mitigation efforts, preparedness actions depend on the incorporation of appropriate measures in national and regional development plans. In addition, their effectiveness depends on the availability of information on hazards, emergency risks and the counter measures to be taken, and on the degree to which government agencies, non-governmental organizations and the general public are able to use the information.

3. **Response:** Response includes efforts to minimize the hazards created by a disaster. It includes search and rescue, and emergency relief. The aim of emergency response is to provide immediate assistance to maintain life, improve health and support the morale of the affected population. Such assistance may range from providing specific but limited aid, such as assisting refugees with transport, temporary shelter, and food to establishing semi- permanent settlement in camps and other locations. It may also involve initial repairs to damaged infrastructure. The focus in the response phase is on meeting the basic needs of the people until more permanent sustainable solutions can be found.

4. **Recovery:** Recovery includes measures taken to generate resource for returning the community to normal. These measures may include temporary housing, grants, and medical care. As the situation after a disaster is brought under control, steps are undertaken to enable the affected population of undertaking a number of activities aimed at restoring the infrastructure and other resources. There is no distinct point at which immediate relief translates into recovery and then into long-term sustainable development. It depends on the pace of recovery and recurrence of the disaster. There will be many opportunities during the recovery period to enhance the prevention and increase preparedness, thus reducing vulnerability.

   Recovery measures, both short and long-term include returning vital life-support systems to minimum operating standards, temporary housing, public information, health and safety education, reconstruction, counseling programmes, and economic impact studies. Information resources and services include data collection related to rebuilding, and documentation of lessons learned. Recovery activities continue until all systems return to normal or better.

   One of the major considerations of a disaster management plan is to reduce the vulnerability of a population to a hazard. This leads to plans for sustainable development. Measures of sustainable development include the promotion of sustainable livelihood

and their protection and recovery during disasters and emergencies. Where this goal is achieved, people have a greater capacity to deal with disasters and their recovery is more rapid and long lasting.

National Disaster Management Act, 2005

The Disaster Management Act passed in 2005 provides for a detailed action plan right from the central government to the district and local levels to draw, implement and execute disaster management plans. The Act comprising 79 sections and 11 chapters is capable of effectively managing the disaster and matters related to it. According to the Act, "Disaster Management" is defined as a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary or expedient to prevent danger or threat of any disaster, mitigation or reduce the risk or severity or consequences of any disaster, capacity-building and preparedness to deal with any disaster, prompt response to any threatening disaster situation or disaster, assessing the severity or magnitude of effects of any disaster, evacuation, rescue and relief, rehabilitation and reconstruction. The Act empowers the Central Government to appoint the National Disaster Management Authority with the Prime Minister of India as the Chairperson and such number of other members, not exceeding nine. The other provisions in the Act include the establishment of National, State and District level disaster management Authorities, Institutes and Committees.

Exercise

1. Visit the local Fire Station and Disaster Management Institute/ Agency and discuss with the concerned officers about the mitigation and preparedness measures. Record your observations and submit them as part of your portfolio.

2. Using the key words such as disaster, disaster management cycle and disaster management browse through the websites and note the meaning of these terms and the website address.

3. Short Answer Questions:

a) Define disaster.

b) List the phases of disaster management.

c) Write short note (about 200 words) on the following:

(i) On NDMA.

(ii) State disaster management agency.

4. Fill in the blanks

a) The two types of disasters are manmade and .....

b) Disaster results from a combination of ..... conditions of ..... and insufficient capacity or measures to reduce potential negative consequences of risk.

c) .....include measures taken to generate resource for returning the community to normal.

d) .....includes efforts to minimize the hazards created by a disaster.

e) Emergency exercise or training for disaster management is part of the ....

5. Differentiate between the following:

a) Hazard and disaster.

b) Manmade and natural disasters.

c) Mitigation and preparedness.

d) Response and recovery.

SESSION 2:

Role and Responsibilities of Emergency Response Team

In this session, you will learn about the structure, roles and responsibilities of Emergency Response Team (ERT). It will help you to understand the equipment and procedures that are applied for rescue and search operations and the benefits of drills. It will also expose you to the understanding of the various safety threats and appropriate actions. Such understanding will keep you to function effectively in a team in case of mass casualty incidents.

Relevant Knowledge

Emergency Response Team (ERT) or Emergency Response Unit (ERU) is established to provide relief from suffering and distress to persons affected by hazards, emergencies and disasters. It is a team of trained technical specialists ready to be deployed at short notice. They use pre-packed sets of standardized equipment and materials to deal with the emergency.

Structure, Roles and Responsibilities of an ERT

The structure of an ERT is a functional team. In the United States of America (USA), the standard is a ten-person team comprising of the following:

1. **ERT Team Leader:** Generally, the first ERT team member arriving on the scene becomes team leader, and is the designated Incident Commander (IC) until the arrival of someone more competent. He/she makes the initial assessment of the scene and determines the appropriate course of action for team members; assumes role of Safety Officer until assigned to another team member; assigns team member roles if not already assigned; designates triage area, treatment area, morgue, and vehicle traffic routes; coordinates and directs team operations; determines logistical needs (water, food, medical supplies, transportation, equipment, and so on) and determines ways to meet those needs through team members or citizen volunteers on the scene; collects and writes reports on the operation and victims; and communicate and coordinates with the incident commander, local authorities, and other ERT team leaders.
2. **Safety Officer:** The Safety Officer checks team members prior to deployment to ensure that they are safe and equipped for the operation. He/she determines whether the working environment is safe or unsafe and ensures team accountability. He/she supervises operations (when possible) where team members and victims are at direct physical risk, and alerts team members when unsafe conditions arise.
3. **Fire Suppression Team (2 people):** The team suppress small fires in designated work areas and assist the search and rescue team or triage team.

4. **Search and Rescue Team (2 people):** The team searches and provides for rescue of victims, as is prudent under the conditions and assist the Fire Suppression Team.
5. **Medical Triage Team (2 people):** They provide Simple Triage and Rapid Treatment (START) triage for victims found at the scene; marking victims with category of injury as per the standard operating procedures and assist the Fire Suppression Team or Rescue Team, if needed. The START system was developed to allow first responders to triage multiple victims in 30 seconds or less based on three primary observations: Respiration, Perfusion and Mental Status.
6. **Medical Treatment Team (2 people):** The team provides medical treatment to victims within the scope of their training. This task is normally accomplished in the Treatment Area; however, it may take place in the affected area as well. They may also assist the Fire Suppression Team and the Medical Triage Team as needed.

   The team members have to work under the supervision of the ERT team leader and communicate with him/her. Because every ERT member in a community receives the same core instructions, all team members have the training necessary to assume any of these roles. Hasty teams may be formed by whichever members are responding at the time. Members may need to adjust team roles due to stress, fatigue, injury, or other circumstances.

Equipment used by ERT

The equipment used by an ERT could be sophisticated or simple, depending on nature of the emergency and its magnitude. The list of some of the equipment used by the ERT is as follows:

- Personal Protective Equipment (PPE includes hard hats, protective apparel, masks, eye protection glasses, gloves, etc.).
- HAZMAT (Hazardous Material).
- Response Trucks.
- Specialized vehicles.
- Mobile incident command center with Satellite Communication Equipment.
- Fire Extinguishers
- Medical Equipment
- Flotation Devices
- Safety Ropes

Search and Rescue Operations

Search and Rescue Operations (SAR) are a set of technical activities rendered by an individual or a group of specially trained personnel who rescue and attend to the casualties under adverse conditions, where life is at threat. It is important for the rescuers to collect

information on the extent of damage, approach to the damage and understand if any further damage is likely to occur.

Search and Rescue Operations comprise the search for, and provision of aid to persons or structures which are feared to be in distress or imminent danger. It uses available personnel and facilities. It provides for their initial medical or other needs, and delivers them to a place of safety. Rescue is a team effort that needs planning and coordination amongst the members for optimum response. The four types of search and rescue operations are as follows:

(i) Combat search and rescue is search and rescue operations that are carried out during war, that are within or near combat zones. The armed forces of the country plays a vital role during disaster emergencies, providing prompt relief to the victims even in the most inaccessible and remote areas of the country. With their skills in technical and human resource management, they organize effective relief measures for emergency situations.

(ii) Air-sea rescue refers to the combined use of aircraft (such as flying boats, floatplanes, amphibious helicopters and non-amphibious helicopters equipped with hoists) and surface vessels to search for and recover survivors of aircraft drowned at sea as well as sailors and passengers of sea vessels in distress. The rescue team should follow the following three key principles while performing rescue operations:

   (a) Look physically for survivors and casualties trapped under the debris.

   (b) Listen to the source of information using acoustic devices.

   (c) Feel the gravity of danger and then respond to the situation.

Rescue and Evacuation Drills

A rescue and evacuation drill is a method or procedure of practicing the rescue or evacuation for an emergency. During any disaster, it is generally the security personnel or the police that first reaches the spot until the arrival of other emergency service personnel. The police extend all possible help and cooperation to the local authority in the rescue and evacuation operations. The security personnel should, therefore, be trained in rescue and search operations. In India, the Central Industrial Security Force (CISF) has been designated as one of the agencies to respond in the case of a disaster striking any part of the country. The Government of India has also declared the National Industrial Security Academy (NISA) as a National level institution for imparting training to the rapid response units.

In an evacuation generally the emergency system, usually an alarm is activated and the building is evacuated as though a real emergency has occurred. Usually the time it takes to evacuate is measured to ensure that it occurs within a reasonable length of time, and problems with the emergency system or evacuation procedures are identified to be remedied.

At the village level, Disaster Management Committee (DMC) and Disaster Management Teams (DMTs) are set up. The DMC consists of elected representatives, local authorities, officials from Government departments, doctors, paramedics, representatives from primary

health centres, school teachers, etc. The DMT consists of the members of voluntary organizations/NGOs and trained volunteers from the village. The members of the team are imparted training in basic functions of rescue, evacuation, first aid, etc.

Drills are usually conducted in schools, offices, factories and other such facilities. The kinds of drills usually depend on the possible emergencies that could occur in those areas. The common types of drill that are usually conducted are:

1. Fire drills.
2. Drills on use of rescue equipment like ropes and knots, stretchers, fire extinguishers, and first aid kits.
3. Drills on use of flotation devices.
4. Drills on use of Personal Protection Equipment.

Benefits of Drills

- Drills help develop teamwork.
- Drills help develop self confidence.
- Drills help to prepare crew for responding rapidly and effectively in an emergency situation.
- Drills can help prepare the crew to make decisions under pressure.
- Drills can help to identify how procedures might be improved.
- Drills help the crew to become familiar with the equipment and procedures and whether they are working properly.

Exercise

1. Visit the local fire-station and note down the list of equipment and procedures that they use for conducting fire drill.

2. Write down the equipments need for the following rescue operation

Rescue Operation	Equipment needed
Combat search and rescue	
Air-Sea rescue	

3. Short Answer Questions:

a) What is an ERT?

b) Who are the members of an ERT?

c) Enlist the equipments used by an ERT.

d) Explain method of rescue and evacuation drill?

e) What are the benefits of drills?

4. Write short note on the following:

a) Role of Panchayat or local authority in disaster management?

b) Role of Non-government organizations in disaster Management?

c) Role of educational institutions in disaster management?

5. Fill in the blanks

a) ERT stands for ..... Response.

b) An ERT is established to provide relief from suffering and distress to persons affected by hazards and .....

c) ..... rescue refers to search and rescue activities that occur in a mountainous environment.

d) ..... search and rescue operations are carried out during war.

e) The rescue team should ..... for survivors, listen to the source of information and ..... the gravity of danger, before responding to the situation.

6. Discuss in class the following:

a) Roles and responsibilities of people involved in emergency response team or emergency response units.

b) Different types of search and rescue operations.

SESSION 3:
Response Team Fighting Fire

In this session, you will learn about the classification and causes of fire. You will also study the procedure of dealing with fire emergencies, methods and techniques of extinguishing fire, fire fighting equipment and installation, fire prevention and protection and role of people in fire detection and control. The knowledge and skills acquired through this module will help you to assist in fire emergencies in hospital or other medical care units.

Relevant Knowledge

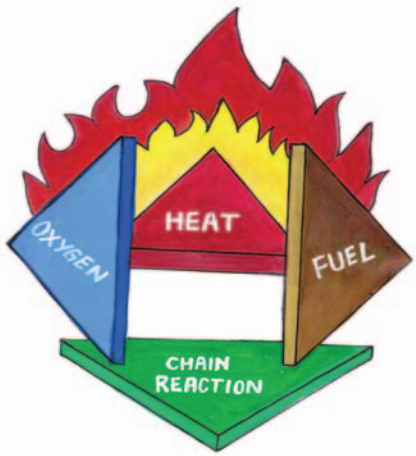
Everything in nature is made up of five basic elements: (i) earth, (ii) water, (iii) fire, (iv) air, and (v) space. Each of the five elements has a certain relationship with the other elements. These relationships form the laws of nature. An element could support or act as an enemy to the other element. For example, air (contains oxygen) supports fire, but water can block the spread of fire. Therefore, in order to co-exist fire and water need to be separated. In this session, we will try to understand how to respond to fire emergencies. But before we do that, let us first understand what we mean by fire.

Fire is the rapid oxidation of a material in the chemical process of combustion, releasing heat, light and various reaction products. The flame is the visible portion of the fire and consists of glowing hot gases. Fire has the potential to cause physical damage through burning.

For a fire, three things are necessary – heat, oxygen and fuel. Fuel (in a non-gaseous state) does not burn directly. When you apply heat to fuel, it produces a gas. When the oxygen in the air combines with this gas, it burns. Remove one of those things (e.g., add water to eliminate heat or cover with dirt or sand to eliminate oxygen) and the fire will go out. Therefore the three elements that are necessary for a fire to ignite are:

- Heat
- Oxygen
- Fuel
- Fires start when a flammable and/or a combustible material, in combination with a sufficient quantity of oxygen gas is exposed to a source of heat that reaches above the flash point for the fuel and is able to sustain a rate of rapid oxidation that produces a chain reaction.

  This is commonly called the “fire tetrahedron”.



Fire Tetrahedron

Classification of Fires

Most fires that occur will fall into one or more of the following classes:

Class A: It comprises of fires involving ordinary combustible materials, such as paper, wood, and textile fibers. Cooling, blanketing, or wetting extinguishing agents are used for extinguishing such fires.

Class B: It comprises of fires involving flammable liquids such as gasoline, thinners, oil-based paints and greases. Extinguishers for this type of fire include carbon dioxide, dry chemical and halogenated agent types.

Class C: It comprises of fires involving energized electrical equipment. The most common type of extinguisher for this class is carbon dioxide extinguisher.

Class D: It comprises of fires involving combustible metals such as magnesium, sodium, potassium, titanium, and aluminum. Special dry powder extinguishing agents are required for this class of fire, and must be tailored to the specific hazardous material.

Class K: It comprises of fires involving commercial cooking appliances with vegetable oils, animal oils, or fats at high temperatures belong to the category of class K. Wet potassium acetate, which is a low pH- based extinguishing agent, is used for extinguishing this class of fire.

Common Causes of Fire

Common causes of fire can be related to the following:

(i) Open Flames

- Negligence while conducting welding, cutting or grinding.
- Improper use of candles.
- Improper handling of flammable or combustible liquids or flammable gases in or near-to- potential ignition sources.
- Matches and cigarettes that are improperly disposed off or left unattended near combustibles.

(ii) Electrical

- Damaged electrical conductors, plug wires or extension cords.
- Use of faulty, modified or unapproved electrical equipment.
- Insufficient space or clearance between electrical heating equipment and combustibles.
- Short or overloaded circuits.
- Loose electrical connections.
- Lightning.

(iii) Cooking

- Deep frying in pots or pans on stove tops.
- Unattended cooking appliances.
- Combustibles located dangerously close to cooking equipment.

(iv) Spontaneous Ignition

- Improper disposal of materials susceptible to spontaneous combustion, such as oily rags from wood finishing or polishing.
- Accumulation of organic materials, such as green hay, grain or woodchips.
- Accumulation of waste combustible materials near potential sources of ignition.

Dealing with Fire Emergencies

In order to deal with fire emergencies remember the short form "RACE" i.e., Rescue, Alarm, Confine and Evacuate. Let us now learn about each of these aspects in detail.

R – Rescue/Remove: Search and rescue is a team effort that needs planning, trained people and coordination amongst the members. When you discover a small fire you can rescue people in immediate danger, but this you should do without endangering your life. In case of big fires, evacuation should be done and people should calmly exit via safe Fire Exit.

A – Alarm/Alert: Sound the alarm by pulling a fire box and call from a safe distance. Dial the fire emergency number 101.

C – Confine/Contain: Close all doors, windows and other openings.

E – Evacuate/Extinguish: Evacuate the building. In case it is necessary to enter the building, for example, to save people, take necessary precautions while entering the building.

Methods and Techniques of Extinguishing Fire

Small fires can be extinguished only if you are trained to use a fire extinguisher under the supervision of a trained fire fighting personnel. To stop a fire, one of the sides of the fire tetrahedron ought to be cut off.

The various methods adopted for extinguishing a fire include the following:

- **COOLING:**
  Lowering the temperature of the combustible material so that it falls below the ignition temperature.
- **SMOTHERING:**
  Cutting off supply of air/oxygen to the combustible material.
- **STARVING:**
  Removing of combustible material or removing air for achieving conditions below the "Limit of flammability".

Class of Fire	Description	Method of Extinguishing	Extinguishing Medium	Extinguisher to be Used
A	Fire involving ordinary combustible material such as textiles, wood, paper, jute, etc.	Cooling	Water	Soda-Acid Type, Water, CO_2.
B	Fire involving flammable liquids such as petrol, oils, lubricants, solvents, paints, varnishes etc	Smothering or Blanketing effect	Foam CO_2 Dry Chemical Powder (DCP)	Foam CO_2, Dry Chemical Powder or Halon type.
C	Fire involving electrical installations due to overheating or short circuiting. This may finally lead to class A, B or C fire	Switch off electrical supply	Vapourising liquids, dry powders and CO_2	CO_2, DCP or Halon, to be dry sand.
D	Fire involving metals such as radioactive metals Aluminum, Magnesium, Potassium, Sodium and Zinc	Smothering	Suitable dry powder	Special DCP extinguisher, dry earth, dry sand, powdered graphite, talc and asbestos, soda
K	Fire involving cooking oils and fats	Smothering	Powder B/E	Foam, wet chemical extinguisher, Powder B/E

Note:

- Do not use water jet for class B, D and K Fires.
- Do not use foam extinguishers for class A, C, D and K Fires.
- For class “K” Fire, extinguishing medium must be non-conductor of electricity and also non-damaging to equipment.

Fire Fighting Equipment and Installations

1. Personal protective equipment (PPE) designed to withstand water and high temperatures and hand tools used by fire fighters are as follows:

(a) Bunker gear, including turnout jacket and pants

(b) Self-contained breathing apparatus.

(c) Helmet, facemask and/or visor.

(d) Safety boots, gloves

(e) Alert safety system device.

(f) Handheld radio or other communication devices.

(g) Thermal Imaging Camera.

(h) Gas Meter.

(i) Flat and pick-head axe.

(j) Halogen bar

(k) Chain saws.

2. **Fire Water Tanks:** For dealing with large fires, the entire building is installed with a system of a network of pipeline, hydrant valves, sprinkler heads, etc. The system is always kept under desired pressure with the help of respective Jockey pumps operating automatically within a range of water pressure in the pipe line. In case some hydrant is opened or sprinkler system gets activated, the respective main hydrant pump or sprinkler pump will start automatically at a pre-set pressure for supplying water in large quantity.

3. **Types of Hydrants - Pumps, Fire Hydrants:**

   Fire Hydrants: Fire hydrants are provided inside the building covering all the areas as per fire safety rules and regulations. Each hydrant box is equipped with a hose reel, two outlet valves for standard size hoses and a branch pipe.

4. **Automatic Sprinkler System:** A sprinkler system is an automatic fire detecting, alarm and extinguishing system that is constantly on guard to deal quickly and effectively with any outbreak of fire that may occur in relevant spaces. Water is fed to the sprinkler heads through a multi-stage composite pump applying water to low, medium and high pressure system of piping usually suspended from the ceiling with sprinklers facing upwards.

   Sprinklers system also helps for gaining an easy access to seat of fire and improvement of visibility by lowering the smoke level in areas on fire. In case of fire when temperature rises 68° C, the quartzoid bulb in the sprinkler head bursts and water under pressure starts spraying out from the sprinkler for extinguishing the fire by cooling effect.

   Most of the area in the shopping mall building is well protected against risk of fire by means of automatic sprinkler system. Various areas connected to low, medium and high pressure sprinkler system are further divided zone-wise and a visual and audible alarm indication will be activated on alarm panel situated in the mall control room.

5. **Fire Detection Panel and Warning System:** This panel is installed in the electric control room. In case of a fire in a particular zone, we get an indication and audible alarm signal for dealing with the emergency situation.

A stand by 24V battery backup is provided in case of failure of supply from the mains. Highly sensitive smoke and heat detectors are installed in various zones in public area, retail shops, service and machinery area on floors and corridors.

6. **Detectors:**

Heat detectors: These detectors have thin strips of metal that react to the presence of heat and activate an alarm when a specific temperature is reached. The thin strips of metal warms easily when heat from the air comes into contact with them. When the metal warms to a sufficient degree, contact is made with an electrical circuit activating the alarm.

Smoke detectors: When oxygen and the fuel source combine, the chemical reaction between the two products often produce other byproducts, including smoke and other toxic gases. A smoke detector works by monitoring the air for particles of smoke i.e., the minute particles produced by combustion. Smoke detectors do not detect flame, heat, or gases. There are two types of smoke detectors commonly in use: (i) Ionization Smoke Detectors, and (ii) Photoelectric Smoke Detectors

Flame detector: These systems monitor the production of certain spectrums of light produced by fire. one of these systems monitor infrared light while others monitor ultraviolet light produced by the fire.

In case of fire, respective area fire detectors will activate an audible alarm signal along with visual indication showing the affected zone on a floor. A Light Emission Diode (LED) lamp glowing at the base of detector indicates that the detector has activated. The smoke detector is reset after the fire or after source of smoke is eliminated. Any fault indication also gets displayed on the panel.

Manual call boxes, installed at specific points in the corridors, service, machinery and public area, covering the entire mall building are use to activate fire alarm. Fire alarm can be activated in the main fire control panel by breaking the glass of pill box with a small hammer fixed on it. For resetting the system, pill box glass has to be refixed.

7. **Public Address System:** The Public Address (PA) system panel is a part of main control panel. All areas are divided in zones for making necessary announcements or for giving FIRE ALERT alarm to various guest, service, machinery and public area. This system is supervised round the clock by an Assistant Security Officer (ASO).

8. **Automatic Sprinkler Alarm Panel:** This panel is installed adjoining main fire detection and warning panel. Zonal alarm signal and visual indication will get displayed on this panel in the event of water flow through the sprinklers, accidentally or due to outbreak of a fire.

9. **Emergency Exits:** Emergency exits on the road side outside the building are provided on every floor. Similarly, adequate arrangement is made for emergency exits from various public areas, basements, service areas and machinery areas.

10. **Signages:** Evacuation and safety instructions are displayed conspicuously at different prominent places. The following signages are generally displayed:

    i. Photo luminescent signages reading “IN CASE OF FIRE, USE STAIRS DO NOT USE LIFT” in red and white background in the entire building showing EXIT route.

    ii. Photo luminescent signages are fixed in “EXIT” staircase indicating floor number.

    iii. Each stairway and each elevator is given numbers as per evacuation plan e.g. S1, S2, etc. for stairways and L1, L2, etc. for elevators.

    iv. “No Smoking‟ signages are provided in service areas.

    v. Kitchen safety signages are fixed in all kitchens.

    vi. High Voltage/Danger signages are fixed on all electrical panels.

11. **Emergency Power Supply:** In case of power failure from the city source, generator sets each with a power output of 1500 KVA (or commensurate with requirements) come on load automatically within 5 to 10 seconds for meeting the normal supply load demand.

Prevention and Procedures

The defense against fire is viewed in two parts i.e., Fire Prevention and Fire Protection.

(i) Fire Prevention: This is a major precaution, which embodies the control of the source of heat and elimination or isolation of obviously dangerous fuels. It is considered much more important than success in the fire fighting operations. Adhering to precaution saves not only consequential losses but also helps in maintaining continuity in operations. Some of the preventive measures which are to be followed strictly have been mentioned below:

- Do not compromise on implementing norms and standards.
- Develop No Smoking discipline.
- Do not leave liquid fuel unattended.
- Prevent unauthorized electrical connections and usage of unauthorized electrical apparatus.
- Store all fuels / flammable stores in safe place.
- Establish a fire preparedness plan which takes care of prevention, response, recovery and keep it updated periodically.
- Designate an emergency coordinator and a team and assign responsibilities to employees to initiate the plan.
- Keep your housekeeping up-to-date, preventing accumulation of garbage or waste materials.

- Upgrade the facility to meet the required fire codes mentioned in National Building Code (NBC) of India.
- Ensure a preventive maintenance programme for operational equipment and make sure that the equipment meets the specifications and standards.
- Develop a mutual programme with neighbouring establishments for such emergencies.

(ii) Fire Protection

- The First Aid firefighting equipment should be provided on all floors, including basements.
- Fire fighting extinguishers should be distributed all over the building not only as per norms but also depending upon the vulnerability of the place.
- The complete building and the lawn is equipped with manual as well as automatic fire alarm system. The call boxes while being visible from the exit ways do not obstruct fire exits. The call boxes are “Break Glass” Type.
- Fire exits and elevators are fitted with fire doors and shutters to provide fire protection to these areas.
- Fire extinguishers in the entire building, particularly in places identified as hazardous.
- Periodically test fire detection and suppression system as per national fire code.
- Ensure adequate water supply for hydrants and sprinklers.
- Provide an alert warning system for people in premises.
- Predetermine fire evacuation routes, mark them clearly and carry out periodical drills for all employees as well as guests.
- Inspect all evacuation routes regularly.
- Maintain a checklist of maintenance.
- Smoke detectors and sensors have been fitted as per laid down norms.
- Adequate water storage facility.
- Gas pipe lines in kitchen areas of the food court have been checked for safety and fittings conform to Indian Standard Institution (ISI) norms.
- All exit ways are conspicuously marked by illuminated signs which remain visible even in the event of a power failure.
- To avoid the possibility of spread if toxic gases, smoke or fire due to central air conditioning, air ducts made of non-combustible and fire resistance material have been provided at appropriate places.

- Automatic dampeners have been provisioned at suitable locations inside the ducts.
- Ensure Emergency lights have been installed in the building properly.

Role of People in Fire Detection and Control

(i) Person Discovering Fire

The person who discovers the fire should:

- Contact telephone operator or fire station immediately.
- Give his/her name, exact location, size and type of fire.
- If the phone is not working, then break the glass of nearby manual call box to activate fire alarm.
- Remove all possible combustible material from the vicinity of the fire.
- With the assistance of fellow colleagues try to control the fire in the manner he/ she has been taught in the fire training or wait until the fire fighting team arrives on the scene.

(ii) Telephone Operator

In case of a report of fire or an emergency the operator shall notify the following immediately:-

1. Chief Security Officer (CSO).
2. Deputy Chief Security Officer (Dy. CSO).
3. Security Officer (SO).
4. Fire Officers.
5. Manager Operations.
6. Electrical Room.
7. General Manager (GM), Corporate Security.
8. Chief Engineer.
9. Electrician.

(iii) Duties of Leader of the Fire Fighting Team

- Acts as over all incharge.
- Assesses the intensity and magnitude of fire.
- Depute the fire fighting team to fire.
- Arrange to remove trapped persons from the scene of fire.

- Decide evacuation of guests after consulting
- General Manager, Corporate Security.
- Ensure sufficient water, power, fire extinguishers and necessary equipment to fight the fire are available.

(iv) Duties of Help Desk Staff

- Help in evacuation of persons.
- Pass suitable instructions to control room for emergency announcements on Public address (PA) system.
- Restrict movement of persons not concerned with emergency to proceed towards the scene of fire.
- Guide persons in atriums to assembly points.

(v) Duties of Housekeeping Staff

- Ensure fire exits are not obstructed.
- Help customers to come out of the building and guide them to exit routes.
- Try and convince the guests to maintain composure while evacuation to avoid stampedes.
- Help security guards in cordoning off the fire affected area.
- Help in salvaging property from getting burnt.
- Help in evacuation of casualties.

In India municipalities are required by law to have a fire brigade and participate in a regional fire service. Each city has its own fire brigades. The main functions of firefighting services in India are provision of fire protection and of services during emergencies such as building collapses, drowning cases, gas leakage, oil spillage, road and rail accidents, bird and animal rescues, fallen trees, appropriate action during natural calamities, and so on. Industrial corporations also have their own firefighting service. Each airport and seaport has its own firefighting units.

Firefighters are trained to use communications equipment to receive alarms, give and receive commands, request assistance, and report on conditions.

Exercise

1. Visit the local fire station and enquire about the following:

a) What is the frequency of fire incidents in the jurisdiction area?

b) What are the locations that usually report a fire?

c) What are the usual causes of fires that were reported last year?

d) Is the fire station providing training to institutions? If yes, then collect the names of the institutions.

2. Acquaint yourselves with the names and uses of the fire-fighting equipment housed in the fire- station. Take pictures, if possible, and make a report of your visit.

3. Visit a hotel/multiplex/shopping mall to observe and record your observations on the following:

(i) Emergency exits.

(ii) Location of fire alarms.

(iii) Assembly points.

(iv) Nearest alternative telephone.

(v) Internal shelter areas.

(vi) First Aid equipment.

4. Short Answer Questions:

Describe the following terms with respect to dealing with fire emergencies:

(a) Rescue: .....

.....

(b) Alarm: .....

.....

(c) Extinguish: .....

.....

(d) Evacuate: .....

.....

5. Differentiate between the following:

a) Fire prevention and fire protection.

b) Different classes of fire.

c) Different methods of extinguishing fire.

6. Success the following in class:

a) Classification and causes of fire.

b) Procedures of dealing with fire emergencies.

c) Installing the fire fighting equipments.

d) Implications of incorrect use of fire extinguishers on classes of fire.

Sector:
HEALTHCARE

SELF MANAGEMENT AND CAREER SCOPE

Student Workbook

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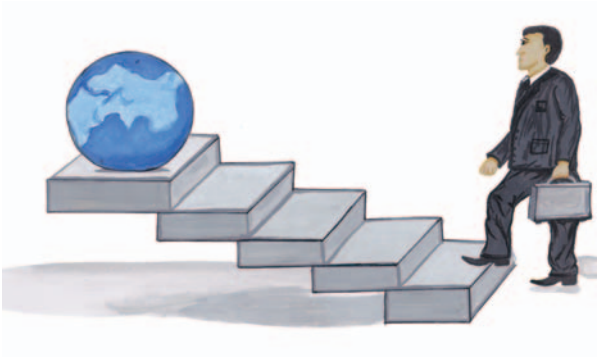
SESSION 1:
Goal Setting Strategies

Relevant Knowledge

In this session, you will learn about the steps of setting a goal and various learning approaches in higher education.

2. Write down your goal(s)
3. Determine why the goal is important
4. Set a Target date to achieve the goal
5. Take small steps to achieve the goal

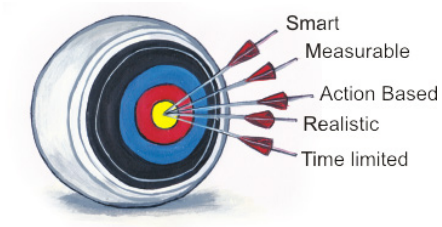


People with goalssucceed because they know wheretyey're going.

–Earl Nightingable

Working smarter as well as harder is the key to academic success. Goals can be long-term or short-term: generally goals are short-term. Being able to set goals is an important part of planning where and what to study. Effective goals are SMART goals. SMART stands for:

- Simple
- Measurable
- Action-Based
- Realistic
- Time limited



Setting "SMART goals" is the key to becoming a smart student. A smart student makes the best use of the time spent studying. Use the following steps to set a goal:

1. **Simple:** A goal should be concrete and specific. Example: "I will do x number of math's problems this week", "I will read pages 1-4".
2. **Measurable:** Monitor and evaluate so that you know whether you are achieving your goal or not. If it is not going well, maybe you need to alter your goal or your action plan. When you achieve the goal, reward yourself by doing something you enjoy and congratulate yourself on a job well done.

3. **Action-based:** Use action verbs in your goal statement. “By Friday (date), I will complete the assignment”.
4. **Realistic:** A goal should be realistic, which means manageable and achievable. Your motivation may drop if your goal is unrealistic and you set yourself up for failure.
5. **Time Limited:** A goal can be broken into smaller and more manageable steps. Then it becomes possible to give a timeframe for achieving the goal. If it is a larger goal, list the benefits if you accomplish your goal and list any obstacles to overcome. Come up with a specific action plan and timetable for each step in accomplishing your goal and for overcoming obstacles.

People perform better when they are committed to achieving certain goals. Goal Setting is a process of thinking about your ideal future and for motivating yourself to achieve your goals. By setting well-defined goals you can measure your achievements and take necessary steps to develop additional knowledge, skill and attitude to achieve what you want to achieve in life. Your goals could be related to your career, family, financial, education, attitude, physical abilities, pleasure, public service, social service, etc. Always state your goal as a positive statement and try your best to achieve it.

Exercise

1. Identify five priority needs of your life and prepare the short term and long term goal to achieve them.

2. Write your SMART (Specific, Measurable, Attainable, Relevant and Time Bound) goals for the following:

(i) Career

(ii) Physical ability

(iii) Family

3. Short Answer Questions:

a) Write the full form of “SMART”

S = ...

M = ...

A = ...

R = ...

T = ...

b) Enlist the steps of goal setting.

4. Differentiate between the following:

a) Short-term and long-term.

b) Realistic and non-realistic goals.

5. Discuss the following in class:

a) Importance of setting goal in life.

b) Setting SMART goals.

SESSION 2:
Self Management

Relevant Knowledge

In this session, you will learn about self management. Self management begins with personal development, which include activities that improve awareness and identify, develop talents and skills, but above that contribute to realization of goals and aspirations.

Self-management is a key skill that will help you throughout your life. It involves setting goals and managing your time. Developing your motivation and concentration skills will help you to overcome the problems. Effective self-management will help you to avoid stress and provide you with more opportunities to get involved in activities. A key skill in self-management is self regulation. Self- regulation refers to individuals monitoring, controlling and directing aspects of their learning for themselves.

These are all real challenges that get in the way of your success at work. You can get your hands on necessary resources or work around a resource gap.

First, make sure the first person you manage every day is yourself. Take good care of yourself outside of work so that you bring your very best to work. And while you are at work, you should be all about the work your work, that is.

Personal Development

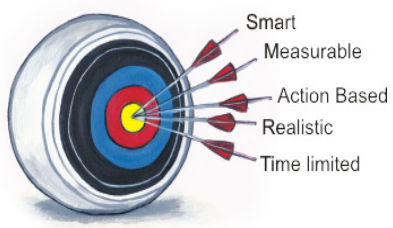
Personal development may include the following activities:

- improving self-awareness
- defining and executing personal development plans
- improving self-knowledge
- improving skills or learning new ones
- developing strengths or talents
- improving wealth
- spiritual development
- enhancing lifestyle or the quality of life
- improving health
- fulfilling aspirations
- improving social abilities

Self-management as an Employee

As an employee you need to improve your satisfaction, motivation and loyalty through work-life balance, time management, stress management, health and wellness activities and

counseling. Predictably, most are factors that are totally beyond the control of the individual, such as:



- Company policies, rules, regulations, culture and standard operating procedures.
- The way things have always been done in the organization.
- Too much work and not enough time.
- Too many low-priority activities taking away from more important tasks and responsibilities.
- Conflict between and among employees that creates a stressful, negative mood.
- Limited resources.
- No clear chain of command.
- Answering to too many people.
- Different standards of performance and conduct
- Understanding of the rules and policies

Focus on playing the role assigned to you before you ever try reaching beyond that role. And before you even attempt to manage, you first need to do the following:

1. Figure out where you fit in your organization or department.
2. Bring your best self to work every day.
3. Get lots of work done very well and very fast everyday.
4. Be a problem solver, not a complainer.
5. Anticipate and avoid problems.
6. Regularly assess your productivity, the quality of your work and your behaviour.
7. Stop making excuses – instead think in terms of challenges
8. Focus on effort not results
9. Exert Control over what you can, accept what you cannot change
10. Eat, sleep and exercise properly
11. Dont ignore emotions or thoughts
12. Manage your stress

Exercise

1. Role Play

You are working on a job that is due by tomorrow at 4:00 pm. It is 10:00 am and you are sort of behind, but you decide to take a break and catch up with your friends on social website. The next thing you know it is 7:00 pm and you have not worked on the job, still due tomorrow. You think to yourself – this social networking is addictive and when I start, I cannot stop – I need to change this behavior... What is solution?

2. Short Answer Questions:

a) Describe any three factors which are not in control of human being at workplace?

b) List any five factors that influence self-management?

3. Differentiate between the following:

a) Self management and attitude.

b) Self management and self regulation.

4. Discuss in class the following:

a) Self management strategies.

b) Role of personal development in self-management.

SESSION 3:
Time Management

Relevant Knowledge

In this session, you will learn about the strategies and some tips of managing time effectively.

Time-management is a vital skill. The following are some time management strategies that you may want to incorporate into your daily routine. Test them out to see what works and what does not work for you. It might be a good idea to start by monitoring and reflecting on how you currently use your time.

Changing Attitudes

Our attitudes to time are constantly changing. Many of these changes are due to the advent of new technology, which affects our work, travel, and communication. The internet browsing, e-mail and social messaging made the exchange of information almost instantaneous. Travel, especially over long distances, has become faster and more affordable. The increase in options available has made it possible for us to do more in a day, but has also increased the pressure on our time. This makes it all more important to use time in the most efficient and productive way.

Using Time Wisely

Everybody is increasingly aware of the cost of time. Individuals and departments are held accountable for their use of time. Goals are clearly defined and financial penalties are incurred for missed deadlines. School culture can have an important influence on how student use their time. In too many schools, working long hours is equated with working hard. If you leave on time, you may often decrease efficiency and productivity. The rewards will be the ability to control your workload, and more time to focus on the most important aspects of your activities.

Basic Strategies

- **Priorities:** You probably have a lot of things to do, so assess how important and how urgent the tasks are; then make sure high priority tasks get done first and are not put off on a regular basis.
- **Be specific:** Make the task as specific as possible.
- **Subtasking:** It is easy to do small tasks. Try breaking tasks down into smaller sub-tasks.
- **Use all available time:** This is a especially good strategy if you are pressed for time.
- **Structure the environment:** Find a place, preferably one you can use regularly and with limited distractions.

- **Establish a routine:** We are creatures of habit. Use time management and scheduling tools to establish a routine.

Scheduling Tools and Tips

Divide your tasks into ABC, as follows:

A = Tasks that are perceived as being urgent and important

B = Tasks that are important but not urgent

C = Tasks that are unimportant (whether urgent or not)

- Create a master schedule that indicates on a term or year basis when holidays, exams, reports, essays etc. are due.
- Create a weekly schedule.
- Mark out commitments such as classes, laboratories, work, sport, meals, etc. Make a list of your study tasks - be specific and prioritize.
- Consider the purpose of the study task.
- Schedule tasks that may require maximum concentration during your “peak” or periods of maximum alertness.
- Allot time for relaxation, exercise, etc.
- Monitor and Evaluate: review what has been accomplished at the end of a day and decide if the schedule needs to be changed the next day.

To Do List

- Plan your day taking into account your master schedule and the goals for the week.
- When you have finished a study task, cross it off your timetable or list.
- Avoid too much detail - a schedule has to remain flexible.

Exercise

1. Prepare a time log book or a to do list and maintain it. Evaluate your log book at the end of week and fill the table below.

Time	Work schedule	Status of work

A. Short Answer Questions:

a) How do you set priority of work for managing the time?

b) What particulars should be included in “TO DO” list?

3. Differentiate between the following:

a) Behaviour and attitude.

b) Correct and incorrect behaviours.

c) Positive and negative attitude.

4. Discuss in class the following:

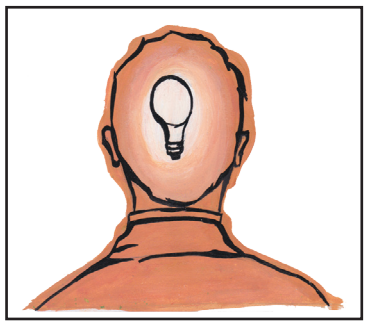
a) Time management strategies.

b) How to prepare a “TO DO” list?

c) Scheduling tools and tips of time management.

SESSION 4:
Critical Thinking

Relevant Knowledge



Critical Thinking

In this session, you will learn about the concept of critical thinking and it can help you in analyzing tasks and enhancing your analytical ability.

Critical thinking is the ability to think clearly and rationally about what to do or what to believe. It includes the ability to do independent thinking. Critical thinking can be defined as the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing and/or evaluating information gathered from, or generalized by, observation, experience, reflection, reasoning or communication, as a guide to belief or action or argument.

Being critical involves making judgments and evaluations. Making judgments can involve distinguishing between the fact and opinion or evaluating the validity of information sources or the validity of particular theories and/ or their application to the particular situations. These judgments need to be well grounded in research, wide reading, and consideration of all possible viewpoints. Critical thinking in this sense is based on a synthesis of a number of factors, and is not just uninformed personal opinion.

Critical thinking means different things in different disciplines. If you are studying in an education discipline like GDA, for example, you will be thinking critically when you apply theory to a practical situation and then reflect on what happened as a result of the application of your knowledge in that situation.

In a discipline which has a less obviously practical application, for example some humanities areas of study, you will be thinking critically when you compare and contrast theories with each other, or when you try to work out gaps or flaws in those theories.

Critical Thinking involves the following:

- Interpretation: Having the ability to understand the information you are being presented with and being able to communicate the meaning of that information to others.
- Analysis: Having the ability to connect pieces of information together in order to determine what the intended meaning of the information was meant to represent.
- Inference: Having the ability to understand and recognize what elements you will need in order to determine an accurate conclusion or hypothesis from the information you have at your disposal.
- Evaluation: Being able to evaluate the credibility of statements or descriptions of a person's experience, judgment or opinion in order to measure the validity of the information being presented.

- Explanation: Having the ability to not only restate information, but add clarity and perspective to the information, so it can be fully understood by anyone you are sharing it with.
- Self-Regulation: Having the awareness of your own thinking abilities and the elements that you are using to find results.
- Analyzing tasks
- Identifying assumptions
- Analyzing and classifying
- Making comparisons
- Problem solving
- Questioning and challenging ideas
- Observing facts and comparing them to hypotheses and assumptions
- Judging the validity of the source and the worth of evidence
- Forming opinions / arguments
- Making connections between ideas, texts, theories, frameworks, disciplines
- Evaluating and weighing up
- Drawing inferences
- Making generalizations

Exercise

1. Recollect the problem you faced in your life in the past. Write the action that you took to solve the problem(s).

Problem	Solution

2. Short Answer Questions:

a) Write about any two situations in a hospital that require critical thinking.

b) Write about any one situation in a hospital that requires evaluation or judgement of opinion.

3. Differentiate between the following:

a) Generalizations and comparisons.

b) Normal thinking and critical thinking.

c) Judgment and evaluation.

4. Discuss the following in class:

a) Importance of critical thinking.

b) Elements of critical thinking.

SESSION 5:
Stress Management

Relevant Knowledge

Stress is a reaction to some change that upsets our balance. Stress is a reaction to physical or mental changes in our life. In this session, you will learn about stress and its effect on physical and mental abilities and performance.

Stress is natural part of everyday life. The life of a General Duty Assistant is a busy one, with little time left to take care of one self. Use the stress management skills that you will learn in this class to perform effectively and efficiently.

Stressors

Some physical things that cause a stress reaction are:

- a cut, scrape or burn on your finger
- any illness or disease

Things that upset our mental balance and cause the stress reaction are:

- driving in traffic when you are in a hurry to get to work
- having to finish care of patient in time
- a conflict with a family member or co-worker

Some stress is good for us and some stress is harmful to us. Good stress helps us in adjusting to changes within and outside of our body. The stress of rising carbon dioxide in our body makes us breathe. Breathing is automatic because of stress. This is self regulatory mechanism of the body due to physical stress. Without good stress, human beings would not be able to cope with increasing amount of work.

Stress is a natural way for us to adjust to changes so we can keep in balance. It also helps us to avoid danger.

Stress helps us to escape when we are faced with such dangers. It maker our:

- eyes more foccused to see the lions and tigers
- muscles tense and strong so we could run from the lions and tigers
- heart pump more oxygen so we could be stronger and able to run
- mind much more alert so we could plan a way to get back into our cave and not be killed by the lion or tiger

Our body does the same thing in every situation when it is stressed. There are no longer lions and tigers running in our streets, but when we get stressed while we are stuck in traffic we react the same way. We react as if tigers and lions were running after us, even when they

are not. This reaction is not good. Our minds and bodies will suffer if we are under a lot of stress for a long period of time.

We must manage stress. Stress will never go away but we can change how we RESPOND to it. We must learn how to manage it before it manages us and makes us sick and unhappy.

The key to coping with stress is to identify the causes of stress in your life and then learn healthy ways to deal with them. It's important to remember that stress comes from our responses to stressful events.

Stress is a Killer

Many people believe that stress causes more than half of all diseases. Stress leads to physical damage and illness. It also hurts our quality of life. It causes mental and social problems.

Excessive Stress is a Killer

Illness due to Stress

Stress may cause the following health problems:

- high blood pressure
- heart attacks
- ulcers
- headaches, neck pain and back aches
- colds
- allergies
- asthma
- weight gains or losses
- fatigue

- loss of sleep or sleeping too much
- anger
- low self esteem
- no energy
- sadness
- lack of an ability to focus, or concentrate on things

Social problems due to Stress

If we do not manage stress, then we may

- get into conflict with others
- over-react to normal everyday things
- show lack of interest in one's usual activities
- suffer loss of relationship with family and friends
- lose a job due to bad performance

Management of Stress

We can manage stress by identifying the reasons or sources and then bringing necessary changes in our life style, work style and behavior or attitude to deal with them.

1. Identify the source of the stress. You need to answer the question "Where is the stress coming from?"
2. Decide if you can get rid of the source of stress.
3. Get rid of all the stress you can.
4. Do NOT take on more stress by saying yes. Learn how to say no. Do NOT take on more than you can handle. Say no whenever you can.
5. Change how you think about something that stresses you.
6. Be good to yourself. Use stress management skills every day to deal with the stress that you cannot get rid of. Use stress management skills when your mind is not able to reduce the stress.

Stress Management Skills

1. Express your feelings. Talk to someone or yourself about how you feel. Do not hold feelings inside. Talk to a family member, friend, counselor or coworker.
2. Focus on one thing at a time. Take a big project and break it up into small pieces or steps. Do NOT let yourself get overwhelmed.
3. Use time management skills. Set goals and deadlines that you can meet. Do not set unrealistic goals. Decide on what the priorities are. Focus on the priorities and budget your time.

4. Relax. Do the 2 Minute Relaxations during your lunch break, at home in your bed or in a quiet park? Close your eyes. Think only about yourself and your breathing. Take a few deep breaths and exhale slowly. Loosen up tense and tight areas of your body. Let go of all your tension. Rotate your head in a smooth, circular motion. Let all of your muscles completely relax. Relax and think pleasant happy thoughts while you are taking deep breaths.
5. Do guided imagery and meditation. Close your eyes. Relax. Think about a peaceful image like the beach with softly breaking waves on the seashore.
6. Eat a healthy diet.
7. Physical exercise is a great stress buster. Walk, swim, ride a bicycle, run or do Yoga. Exercise every day.
8. Keep a positive attitude. Believe in yourself. Accept the things you cannot change.
9. Talk to yourself. Tell yourself that you are great. Tell yourself, “I am relaxed at work”; “I am doing a good job”; “Peace fills my life”; “My life is so full of so many good things”; “I am successful”.
10. Get enough rest and sleep.
11. Treat yourself to comfort food. Cook a meal that your mother used to make for you. Enjoy it.
12. Use humour. Keep a sense of humor even when things are very stressful. Humor is great medicine for the mind.

Exercise

1. Recollect the problem you faced in your life in the past. Write the action that you took to solve the problem(s).

Source of Stress	How you overcome it?

2. Role Play

You are in a hospital, working as a General Duty Assistant and taking care of patients. Suddenly you find that many relatives and friends have come to see the patients and a chaotic situation has been created by them. Conduct a role play with your classmates and demonstrate how you will manage the situation.

3. Short Answer Questions:

a) What is stress?

b) List any three stress management skills?

c) List any three health problems that one can face due to stress?

4. Differentiate between the following:

Good and bad stress.

5. Discuss in class the following:

a) What is stress management techniques?

b) What is stress management skills?

NOTES

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