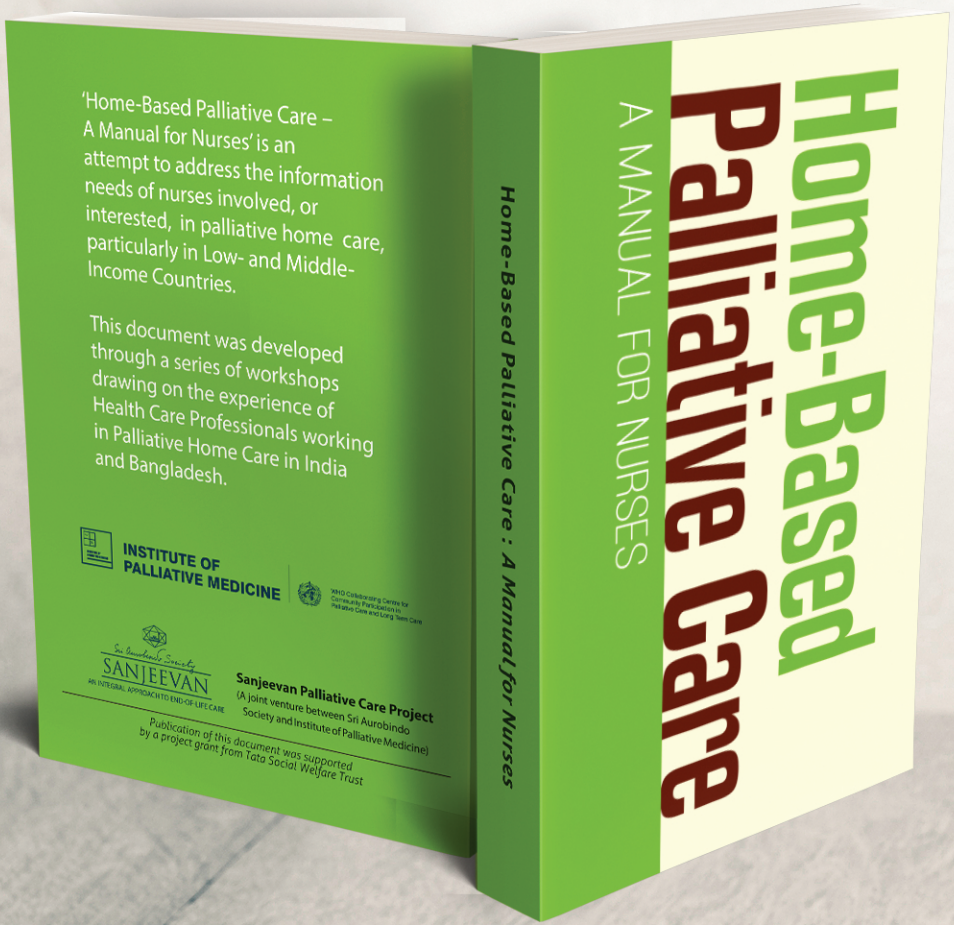

Home-Based Palliative Care

A MANUAL FOR NURSES

Home-Based Palliative Care

A Manual for Nurses

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INSTITUTE OF
PALLIATIVE MEDICINE

WHO Collaborating Centre for
Community Participation in
Palliative Care and Long Term Care

Sri Aurobindo Society
SANJEEVAN
AN INTEGRAL APPROACH TO END-OF-LIFE CARE

Sanjeevan Palliative Care Project

(A joint venture between Sri Aurobindo Society
and Institute of Palliative Medicine)

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Home-Based Palliative Care: A Manual for Nurses

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Disclaimer

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CONTENTS

Why this Manual?

It is estimated that 40 million incurably ill and dying people need palliative care every year. 86% of them do not have access to the care that they desperately need. This situation can be improved only if palliative care becomes part of a package of basic care at the Primary Health Care level.

Most people prefer to be at home in the last phase of their life. The implication is that care need to available and accessible as close to the patient's home as possible. Home Care programs play a major role in fulfilling this need. Nurses have been the key health care professionals in this area. Not many publications addressing practical nursing issues in palliative home care are available.

In 2014, the World Health Assembly resolved to make 'mainstreaming' of palliative care into primary health care a priority for health care systems. Guidelines and tools for various stakeholders in this area are being generated by World Health Organization (WHO).

WHO Collaborating Centre for Community Participation in Palliative Care and Long-Term Care has been given the mandate by World Health Organization to support the WHO with development of training programs and manuals in palliative care and long-term care. This Manual for nurses is an attempt to address information needs of nurses in palliative home care, particularly in Low- and Middle-Income Countries.

'Home-based Palliative Care – A Manual for Nurses' has been developed through a series of workshops drawing on the experience of Nurses working in Palliative Home Care. This document is expected to serve as a useful standalone resource for nurses involved or interested in Palliative Home Care.

Basic Framework of Home-Based Palliative Care

Palliative Care

WHO defines palliative care as "an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual" (1)

Why home-based Palliative care?

Home based palliative care is considered the backbone of palliative care services. The following are the reasons for providing home-based palliative care.

1. Patients are cared for in their own milieu and home environment and are much more comfortable than in a hospital, which is alien to them and is usually associated with fear and anxiety.

2. The expenses incurred by the patient and his/her family are very less when home-based palliative care is provided to them than when they receive care from a hospital-based care setting.

3. The difficulties experienced by the patient and his/her family during transportation to hospitals is completely avoided when care is provided at patients' own home.

4. Visit by a care provider to the patient's home provides an opportunity to assess a complete picture of the patient and the family, which is crucial to plan the care.

5. There is only minimal disturbance/disruption to family dynamics when the patient is cared for at home than in the hospital.

6. There is a possible financial gain to the family as expenditure in terms of transportation charges, In-patient charges are avoided when the patient is cared for at home.

7. The involvement of the family in patient care is better when the care is provided at home.

8. Networking of neighbours and their involvement in patient care can be effectively achieved through home-based palliative care.

9. The quality of death and dying experience is very often better when a patient receives home-based palliative care. (2)

10. Home-based palliative care is less expensive and less demanding on health-care infrastructure than hospital-based care setting.

11. Several individuals do not prefer to go to a hospital and receive treatment. For such individuals, home-based care is an ideal model to access care.

Possible limitations of homecare

1. The selection of patients for care under home-care services is very important as all patients and conditions may not be suited for home-care.
2. Running a homecare service of good quality requires the support of Outpatient and In-patient services in the nearby vicinity.
3. There may be an additional burden to the primary caregiver when the patient is cared for at home and may lead to burn-out.
4. Access to homecare at odd hours is a limitation if there no emergency homecare system
5. Some medical procedures that involve significant risk and continuous monitoring cannot be done at home.

To whom is home-based palliative care provided?

Home-based palliative care can be provided to patients suffering from,

1. Long-term illnesses in both adults and children
2. Terminal illnesses
3. Old age-related illnesses and debilities(3)
4. Economically challenged patients who cannot access conventional medical care

5. Patients who are terminally ill and bedridden who cannot be brought to the hospital

Mental disorders if trained personnel are available

6. Children with developmental disorders if the team can get help from a trained personnel.

The following are examples of diseases that require home-based palliative care. Alzheimer's and other dementias, cancer, cardiovascular diseases (excluding sudden deaths), cirrhosis of the liver, chronic obstructive pulmonary diseases, diabetes, HIV/AIDS, chronic kidney diseases, multiple sclerosis, Parkinson's disease, rheumatoid arthritis, drug-resistant tuberculosis (TB), advanced age, spinal cord injuries, mental retardation, congenital anomalies(1) and patients whose mobility is limited due to various reasons.(4)

Who are the members of the Homecare team?

The members of the homecare team can vary from place to place based on the availability and need for the professional caregivers and community caregivers. The homecare team can be a combination of any of the following members. Doctors, Staff Nurses, Community/Auxiliary Nurses, Palliative care assistants, Physiotherapist, Psychologist, Social worker, Community volunteer, Chaplain/Spiritual healer and Trainees. Home-based palliative care is mostly provided by the nurses (NHC-Nurses Home care), but as per the availability and requirement, other care professionals and non-professionals are also involved in providing home-based palliative care.

E.g.

1. **Doctor-led home care (DHC)**
2. **Physiotherapist-led home care (PHC)**
3. **Volunteer-led home care (VHC)**

4. **Nurse-led home care (NHC)**
5. **Multipurpose Health Worker (MPHW)- led home care**
6. **Community health worker-led home care**

Who can give homecare requests?

Home care request from the following persons can be accepted

1. The patient
2. Family caregivers
3. Neighbour/Friend
4. Community caregivers
5. Field staff
6. Hospitals
7. Health care professionals
8. Other palliative care centers
9. Governmental/non-governmental organization

When home care request is accepted from a non-family member, the home care team should call the patient/family and confirm the registration.

Community Volunteers in homecare

In addition to the professional palliative care team, there are many individuals who are genuinely interested in the welfare of the patients and their community. These individuals with adequate guidance and training can involve with the homecare team as volunteers, operating at different capacities. The involvement of these community volunteers should be encouraged as these individuals in the local community have a closer link with the patient and family. Their involvement with the homecare team can vary from providing simple social support (food kit and transportation) to direct patient care (basic symptom assessment, emotional support and basic nursing care). In a community-based model of palliative care, the community volunteers perform their own needs assessment, plan their services and implement them, mobilize the resources they need, manage the day to day services and finally evaluate their program.

Why do we need community volunteers in homecare?

1. Patients with advanced diseases require continuous care and attention for the rest of their lives. In most situations, medical professionals are not able to provide this continuous care and attention these patients need.
2. The problems faced by these patients are not only physical, there are psychosocial and spiritual dimensions to their sufferings. They require a holistic care that is not complete when only medical and nursing care is provided.
3. Care to these patients should be readily accessible and available as close to home as possible

4. Most often, problems faced by these patients suffering from conditions requiring palliative care are non-medical, therefore community volunteers can play a crucial role in addressing these problems including rehabilitation.

Training requirement and tasks for community volunteers suggested by WHO:(5)

Adapted from "Planning and implementing palliative care services: a guide for programme manager" by WHO

Type of community volunteer	Tasks	Suggested minimum training
Untrained sensitized volunteer	Provide support to the palliative care service (e.g. Transport, Fund-raising, Food for the patients	Sensitization course (2 hours) Topics covered: Basics of palliative care, homecare, communication
Trained Volunteer	Participate in patient homecare, offering: • Emotional support • Basic Nursing care • Help with mobility • Reporting of uncontrolled distress to the professional level	Basic palliative care course for volunteers (16 hours + 4 home visit days) Topics covered: Communication skill, Emotional support, Patient assessment, Basic Nursing care, Homecare, Basics of symptom care, reporting to professional level

Core competencies of a community volunteer involving in direct patient care as a part of the palliative care team:

Should know how to,

1. Identify patients requiring palliative care
2. Assess and document the social, psychological and emotional needs of the patient and family

3. Mobilise social support for the patient and family
4. Support the patient and family emotionally
5. Address,
    a. sadness
    b. anger
    c. anxiety
6. Refer an emotionally disturbed patient to a professional psychologist
7. Explore spiritual issues with the patient
8. Address basic psychosocial and spiritual issues in a dying patient
9. Offer bereavement support following the death of the patient

Role of community volunteers in day to day homecare visits:

- Organization & administration of palliative care services
- As a member of the homecare team involve in creating a priority list of patients to be visited by the homecare team.
- Coordinate with the professional team members and the patients' family to ensure that the services are provided without any difficulties
- Communicate with the patient and the family and provide them emotional and spiritual support
- To assist the homecare nurse in performing procedures
- Perform basic nursing care such as oral care, back care, bed bath, mobility, bedsore prevention and wound care.

- Provide volunteer-led homecare and perform patient assessment, above mentioned basic nursing care, emotional support, spiritual support and report distressing/unresolved problems to the professional team.
- Administer oral medicines prescribed by the physician at patients' home
- Provide/create social support to the patient
- Raise awareness and spread the idea of palliative care in the society
- Fight social stigmas related to cancer, AIDS, etc.
- Advocacy

What community volunteer should not do?

Community volunteers should not

1. Administer parenteral medications.
2. Perform any invasive procedures such as indwelling catheterization, nasogastric tube insertion, etc.
3. Suggest/insist/deny any treatment options that are contrary to the one planned by the clinical team
4. Prescribe/modify any medical or nursing procedures/ prescriptions
5. Break confidentiality
6. Enforce their political and religious believes on the patient and the family

How to prepare for home care visits?

The homecare visit made by the home care team is of three types. Preparation for the home care visit is different for each type.

1. The first visit of a newly registered patient
2. Follow-up visit of an already registered patient
    a. Including Bereavement care visit
3. Emergency visit of an already registered patient

General guidelines to be followed during a homecare visit:

- Always seek patients'/family's consent before making a homecare visit
- Introduce all the members of the homecare team to the patient and the family caregivers
- Members of the homecare team should dress appropriately, in line with local cultural values
- Seek consent of the patient/family before performing any interventions during homecare visit. This includes explaining the benefits of the procedure and risks associated with the procedure and giving time for the patient and the family to make an informed decision.
- Taking photographs/videos should be done only after taking permission from the patient/family.
- Conversation between the team members that excludes the patient and the family should be avoided.
- Ensure that the home care vehicle is locked and the medications are secure during the home visits.

- When homecare visits for the days is complete, the medications and other equipment should be returned to the area allotted in the PC office. They should not be kept in the homecare vehicle.

The first visit of a newly registered patient

- Confirm the registration over the phone.
- Contact the patient or the family and verify the following
    - Patient's identity
    - Availability of the patient at home
    - Address of the house
- Make sure that the home care kit has all the necessary drugs and materials (Refer Annexure 1)
- Discuss with the team and plan the route
- At the time of the visit
    1. Self-introduction by the team
    2. Initial assessment of the patient (Refer Assessment proforma)
    3. Discuss the findings with the physician available with the team or over the phone if not available with the team
    4. Prepare a management plan along with assigning roles and responsibilities.
    5. Discuss with the patient and the family about the management.

6. Execute management plan, evaluate interventions within the plan, discuss with interprofessional team and propose alternatives if necessary or appropriate.

7. Issue the required medicines and explain to the patient and the family how each medicine is to be given, when it should be given, why it is given and possible side effects.

8. Write clearly on the medicine envelope, date, number of tablets or capsules issued, the timing of each drug and its action

9. Document the patients' findings, procedures done, future plans and follow-up visits.

10. On arrival back to the PC office, discuss with the team about the patients' condition and get the relevant note countersigned by the concerned professional if necessary.

Follow-up visit of an already registered patient

- Contact the patient or the family and ensure the availability of the patient
- Discuss with the team about the patient who is going to be visited
- Make sure that the home care kit has all the necessary drugs and materials (Refer Annexure 1)
- Discuss with the team and plan the route
- At the time of the visit
    1. Self-introduction by the team
    2. Follow-up assessment of the patient (Refer Assessment proforma)

3. Discuss the findings with the physician available with the team or over the phone if not available with the team

4. Prepare a management plan along with assigning roles and responsibilities.

5. Discuss with the patient and the family about the management

6. Execute management plan, evaluate interventions within the plan, discuss with interprofessional team and propose alternatives if necessary or appropriate.

7. Issue the required medicines and explain to the patient and the family how each medicine is to be given, when it should be given, why it is given and possible side effects.

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10. On arrival back to the PC office, discuss with the team about the patients' condition and get the relevant note countersigned by the concerned professional if necessary.

Bereavement care visit

Palliative care does not end with the death of the patient. It extends to care for the family of the patient even after the death of the patient. This is known as bereavement care.

What is bereavement care visit?

It is undertaken by the home care team after the death of the patient who was under their care in order to offer support to the grieving family.

Who can provide a bereavement visit?

In a typical home-based model of palliative care in low- and middle-income countries bereavement care visit is provided by the regular home care team. All the members of the regular homecare team such as doctors, nurses, psychologist and community volunteers can be a part of the bereavement visit. If resources are available, an exclusive bereavement support team can be formed.

When to make bereavement care visits?

The timing of the bereavement care visit should be decided by the bereaved family. Research findings indicate that they prefer meeting sooner than later(6).

Grief following death:

Grief following the death of the loved one is universal and it is a normal emotional reaction. It is crucial not to medicalize grief following death and treat it as a psychiatric disorder. About 85 %(6) of the individuals recover from their grief, reorganize their life and move on. In a small proportion of individuals (about 10 to 15%) grief may be prolonged and may be associated with mental problems such as anxiety, depression and suicidal ideations or physical problems such as insomnia, cardiac problems, hypertension, substance abuse and worsening of an underlying medical condition.(6) Prolonged or complicated grief can also impair the person's ability to work, socially interact and result in social isolation. Bereavement visits will play a crucial role in screening and identifying such vulnerable individuals and providing focused care and support.

Risk factors for complicated grief:(6)

Background factors:

- A close relationship with the person who passed away (such as a child or spouse)
- Females (especially mothers)
- High pre-loss marital dependence
- Religion and spiritual belief and practices

Treatment-related factors:

- Aggressive interventions
- Ambiguity regarding treatment
- Family conflict regarding treatment
- Economic hardships created by the treatment expenses
- Caregiver burden

Death related factors:

- Multiple losses over a quick succession
- Low acceptance of impending death
- Violent death (Suicide, homicide or accident)
- Dissatisfaction with the manner in which death was informed to the family

Individuals or families with the above-mentioned risk factors are those who would benefit from focused bereavement care support. Resilient individuals by their own virtue are able to re-organize themselves and move on. Hence, they will not require focused attention and care as other vulnerable individuals.

Signs and symptoms of complicated grief:

- Constant preoccupation with the deceased expressed by speech and behaviour
- Expression of hopelessness regarding life
- Constant sadness
- Inability to resume activities of daily living
- Lack of sleep
- Irritability and anger
- Worsening of underlying physical and psychological problems
- Poor grooming and personal care
- Withdrawn or isolated
- Attachment to objects of the deceased
- Inability to concentrate
- Poor performance in work or school
- Suicidal ideations

What to do during the bereavement visit? – General guidelines and principles

- Listening is an invaluable asset during bereavement care visits. The homecare team should actively listen to the primary caregiver and the family as in most situations the bereaved family likes to talk about their loved one who passed away.
- There may be long periods of silence during the visit. The homecare team need not feel pressured to speak during this time or be embarrassed about it.

- Give time and space for the family to express their emotions as they grieve. Venting emotions should not be hindered.
- Explore issues like insomnia, exacerbation of underlying physical and psychological condition and return to work. Exploring these issues may enable the team to identify individuals experiencing complicated grief.
- When there is unremitting distress during grief seek professional help
- Plan for follow-up visits when required

Helpful questions during bereavement visit:

- How are you doing?
- As a family how is everyone doing?
- Do you or your family talk about the loved one who passed away? If you don't mind would you like to share?
- Have you been able to resume your regular work?
- How is your sleep? or Is anyone in the family having trouble sleeping?
- I understand that this is difficult. Would you like to talk about it?

Emergency visit of an already registered patient

Patients suffering from conditions that require palliative care can develop problems that need to be addressed on an emergency basis. These problems range from worsening of physical symptom, sudden psychological distress to problems related to end of life phase. They can occur at any time of the day. When an unplanned visit is made to address these problems the same is called emergency homecare visits.

- Emergency homecare visit is carried out **only** for patients who has already been registered. **Emergency homecare visit is not carried out for an unregistered patient.** This is because the homecare team has no knowledge of the background of the patients/family's conditions, his/her/their needs and expectations. In such a situation there is a potential for confusions, misunderstandings and medicolegal issues.
- On receiving the emergency calls, the nurse should clarify the nature of the emergency and the condition of the patient.
- Emergency visits are made on the basis of priority (The nature of the emergency and geographic accessibility).
- At the time of the visit
    1. Self-introduction by the team
    2. Assessment of the patient
    3. Discuss the findings with the physician available with the team or over the phone if not available with the team
    4. Prepare a management plan along with assigning roles and responsibilities.
    5. Discuss with the patient and the family about the management
    6. Carry out management plan
    7. If the patient requires to be shifted to an In-patient facility, document the findings and interventions in patients record and arrange to shift the patient

8. If the patient does not require shifting, issue the required medicines/carry-out interventions and explain to the patient and the family how each medicine is to be given, when it should be given and why it is given.

9. Write clearly on the medicine envelope, the number of tablets or capsules issued, the timing of each drug and its action

10. Document the patients' findings, procedures done, future plans and follow-up visits.

11. On arrival back to the PC clinic, discuss with the team about the patients' condition and get the relevant note countersigned by the concerned professional if necessary.

- Inform the regular homecare team of the respective area about the emergency and plan for follow-up

Identifying patients in need of palliative care in the community (Screening Tool)

There is an unvalidated screening tool available to identify patients requiring palliative care in a community setting. The tool was developed based on the status of various patients enrolled for palliative care in Kerala. It is a non-disease specific tool and can be used by doctors, nurses and community volunteers. This tool can be directly applied on the patient as well as on a proxy who knows about the patients' condition over the last three months. The score ranges from 0 to 24. The tool contains 8 components. The total score is the sum of the scores of all 8 components. Any patient with a score above 10 should be clinically evaluated for palliative care. This tool is now being used by palliative care teams in Bangladesh and Kerala.

Components included

1. Mobility Level
2. Activity Level
3. Ability to self-care
4. Eating and Drinking
5. Consciousness
6. Pain
7. Other symptoms
8. Anxious/ Depressed/ Worried

Mobility

Question 1

How would you describe his/her mobility level during the last three months of life?

Response:

0. Full, like a person of his age
1. Reduced
2. Was usually mainly sitting or laying
3. Was mainly in bed
4. Was totally bed-bound

Level of activity

Question 2

How would you describe his/her activity level during the last three months of life?

0. Normal, like a person of his age
1. Normal with effort
2. Able only to do light work or simple chores around the home
3. Unable to do any work at all

Caring for oneself

Question 3

What would you say about his/her ability to care for him/herself during the last three months of life?

0. Could take full care of him/herself, like a person of his age
1. Needed occasional assistance

2. Needed assistance most of the time
3. Needed total care

Eating and drinking

Question 4

How was he/she eating and drinking during the last three months of life?

0. Normally, like a person of his/her age
1. Had reduced intake or very little food
2. Had only a few sips of liquids or less by mouth or had a nasogastric tube

Level of consciousness

Question 5

How was his/her level of consciousness during the last three months of life?

0. Full, like a person of his/her age
1. Delirious
2. Drowsy
3. Comatose

Pain

Question 6

Was he/she affected by pain during the last three months of life?

0. Not at all
1. Slightly
2. Moderately
3. Severely

Other symptoms

Question 7

Was he/she affected by other symptoms besides pain during the last three months of life?

0. Not at all
1. Slightly
2. Moderately
3. Severely

Emotional status

Question 8

Was he/she feeling anxious, depressed or worried during the last three months of life?

0. Not at all
1. Occasionally
2. Most of the time
3. He/she was completely absorbed by worries and anxiety

Who are the patients who should receive higher priority for regular homecare visits?

- Accessibility: Homecare priority is given to patients with limited accessibility. The limited accessibility could be due to physical constraints, financial constraints and geographic constraints.
- Unsettled problems: Patients with poor symptom control and End of life symptoms will require frequent homecare visits.
- Patients who require procedures (like catheter change)

When to shift a patient to In-Patient care from homecare?

Shifting the patient to the in-patient facility should be done in consultation with the treating team. The following are some general conditions where the patients are shifted to an in-patient facility from a home care setting.

- Poorly controlled physical symptoms (Pain, breathlessness, etc)
- Unsettled emotional issues
- Patients requiring regular parenteral medications
- Patient/family training
    - ✓ Wound management and patient/family training
    - ✓ Colostomy management and patient/family training
    - ✓ Lymphedema management and patient/family training

- Appropriate procedures when needed
- Terminal care (If preferred by the patient or the family)
- For Respite care
- Abandonment/Poor care (As per the local and institutional policy)

(Respite care is a process of providing an organized and temporary break for the caregivers who care for patients with long-term illnesses or disabilities. Out of home respite care services can be provided at an in-patient palliative care setting or a hospice setting. These services offer relief to caregivers who care for patients with long term illnesses and also benefits the patient. When the patient suffering from long term illness is shifted to the care facility, the primary caregiver is relieved from regular family chores. The family caregiver is free to rest, pursue their interests and hobbies during this period. This period offers them rest and recreation and enables them to better care for the patients)

Nursing Assessment at Homecare

Assessment proforma for homecare used in Institute of Palliative Medicine

(Assessment at first visit)

Date of visit :

Team members :

Palliative Clinic Number of the patient :

Name of the patient :

Age :

Gender :

Diagnosis :

What is the condition of the patient at the time of the visit?

Conscious/Semi-conscious/Unconscious
Oriented/Disoriented/Calm/Agitated/Restless

How does the patient perform his activities of daily living?

Independently/With support/Completely bedridden
How much support does he need?
For, Ambulation, Bath, Toileting, Grooming and eating.

Is there any problem in the following basic physiological functions? Be specific about the problem.

Food intake	
Sleep	
Bowel function	
Bladder function	

Note down the issues of the patient

Physical

Psychological

Social

Spiritual

Family issues

Insight of patient about his/her condition

Insight of family about the patients' condition

Expectations of the patient

Expectations of the family

Vital signs: Pulse, BP, Respiration and Temperature

Pain scale

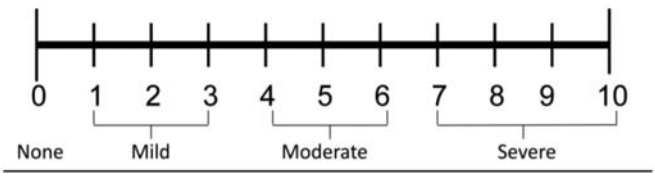


Figure 1: Numerical rating scale

Pain History

Onset	**When did the pain start?**	
Provocative/ Palliative factors	• What makes the pain worse? • What makes the pain better?	
Quality	What exactly is it like? • Dull aching pain • Sharp pain • Burning pain • Lancinating pain, etc	
Radiation	Does it spread anywhere?	
Severity	How severe it is? • Mild • Moderate • Severe OR apply numerical rating scale (NRS)	
Temporal factors	Does it come and go? Is it worse at any particular time of the day or the night?	

Pain body chart

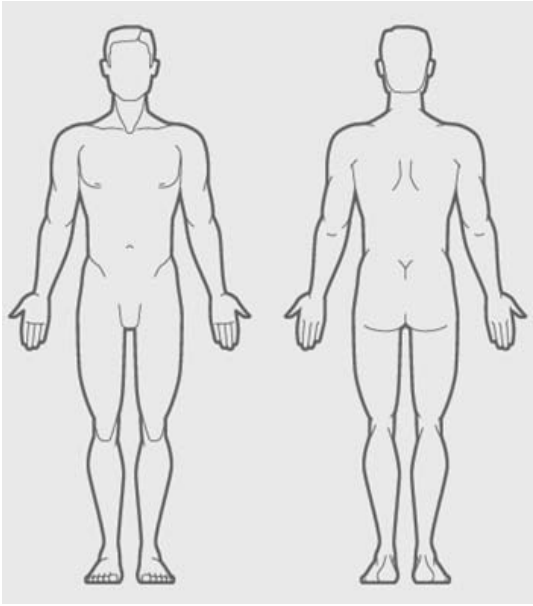


Figure 2: Body chart (Image credits: bronchiectasis.com.au)

Document the following aspects of patients' care

Environmental hygiene	
Oral hygiene	
Skin hygiene	
Nail	
Hair	
Perineal hygiene	

Describe the following issues of patient care

Feeding Tubes	
Weakness/Paralysis/Physiotherapy	
Ostomies	
Lymphedema	
Urinary Catheter	
Ulcers	
Bedsore (Kindly fill the bedsore body chart)	
Other symptoms	
Other symptoms	

Bedsore body chart: Mark areas with skin changes possibly due to pressure sore

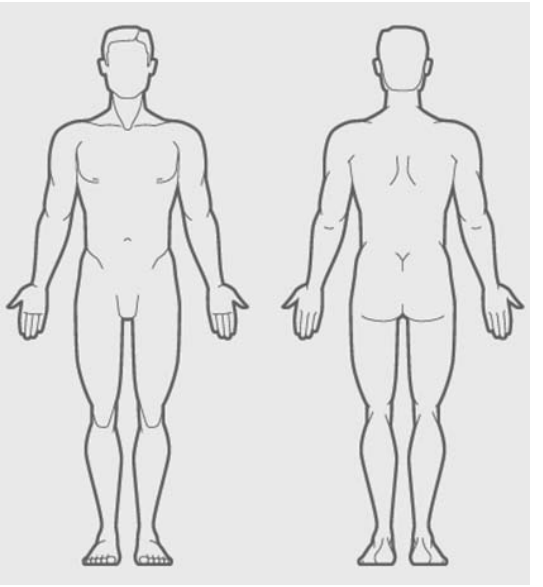


Figure 3: Body chart (Image credits: bronchiectasis.com.au)

Did the patient receive any treatment after the last IP/OP/HC visit? If yes write down the details of the issues and the treatment given.

Details of services, procedures and instructions given during the visit.

Future plans and suggestions.

Note down the rehabilitation, social and other support received by the patient.

Investigation Chart

S No	Name of the investigation performed	Date on which the investigation was performed	Result

Assessment proforma for homecare used in Institute of Palliative Medicine

(Assessment at follow-up visits)

Date of visit :

Team members :

Palliative Clinic Number of the patient :

Name of the patient :

Age :

Gender :

Diagnosis :

What is the condition of the patient at the time of the visit?

Conscious/Semi-conscious/Unconscious
Oriented/Disoriented/Calm/Agitated/Restless

How does the patient perform his activities of daily living?

Independently/With support/Completely bedridden
How much support does he need?
For, Ambulation, Bath, Toileting, Grooming and eating.

Is there any problem in the following basic physiological functions? Be specific about the problem.

Food intake	
Sleep	
Bowel function	
Bladder function	

Note down the issues of the patient

Physical

Psychological

Spiritual

Family/Social issues

Document the following aspects of patients' care

Environmental hygiene	
Oral hygiene	
Skin hygiene	
Nail	
Hair	
Perineal hygiene	

Describe the following issues of patient care

Feeding Tubes	
Weakness/Paralysis/Physiotherapy	
Ostomies	
Lymphedema	
Urinary Catheter	
Ulcers	
Bedsore	
Other symptoms	
Other symptoms	

Did the patient receive any treatment after the last IP/OP/HC visit? If yes write down the details of the issues and the treatment given.

Details of services, procedures and instructions given during the visit.

Future plans and suggestions.

Note down the rehabilitation, social and other support received by the patient.

Head to Toe Assessment

The head to toe assessment by the home care nurse is ideally performed at the first home visit to get a comprehensive understanding of the patient and his needs. The head to toe assessment is then performed periodically as and when required to monitor the progress and update the records.

General guidelines before the assessment

- Washing hands before and after the assessment is very important
- Introduce yourself to the patient
- Ensure privacy and dignity
- Explain to the patient what you are about to perform
- Constantly communicate with the patient during the assessment
- Observe for verbal and non-verbal cues during the assessment
- Keep all the required equipment near you
- Perform focused assessment whenever required

Articles required:

1. Digital Thermometer
2. Sphygmomanometer
3. Stethoscope
4. Cotton swabs (Alcohol and Plain)
5. Torchlight
6. Kidney tray

7. Weighing machine
8. Measurement tape
9. Disposable gloves
10. Reflex hammer
11. Hand sanitizer/Soap

General condition of the patient	
Built	Thin, Cachectic, Obese and Normal
Grooming	Poorly groomed, Well-groomed
Hygiene	Poor, Fair and Good
Mood	Sad, Anxious, Angry, Happy, Calm
Height (if possible)	
Weight	
Head	
Hair and scalp	Lice/nits, Dandruff, Alopecia, Discoloration, dryness and Scalp ulcers
Face	Symmetry and pallor
Eyes	Discharge, Redness, Drooping of eyelids, Pupillary reaction size and symmetry
Nose	Deviated nasal septum and Discharge
Ears	Hearing (Use of aids), Discharge
Mouth	Dryness, Ulcers, Leucoplakia, and halitosis
Teeth and gums	Plaque, Caries, dentures and gum bleeds
Tongue	Pallor, redness, ulcers, candidiasis, altered taste, decreased taste and absence of taste
Lips	Dryness, Cracks, Cyanosis and ulcers
Neck	
Movement	Free, Restricted, Stiffness, Weakness and Pain
Lymph nodes enlargement	Anterior and posterior cervical nodes, Submandibular nodes and supraclavicular nodes

Thyroid	Swelling, lumps, nodes and pain
Swallowing	Difficulty in swallowing, Painful swallowing
Jugular vein	Distention at 45° angle elevation
Trachea	Shift or deviation
Chest	
Inspection	Symmetrical expansion, retraction, mediastinal shift and use of accessory muscles
Percussion	Resonance, Hyperresonance and Dullness
Auscultation	Equal air entry is normal Abnormal breath sounds Decreased breath sounds, Wheeze, Crepitation, rhonchi and Heart sounds S_1, S_2 and Murmur
Abdomen	
Inspection	Type of abdomen: Round, Flat, Scaphoid and Distention Symmetry and Visible peristalsis
Palpation	Tenderness, Rebound tenderness and palpable mass
Percussion	Dullness is normal over the right hypochondrium (Liver) Tympanic (Drum like) indicates an air-filled cavity Dullness and Shifting dullness (Ascites)
Auscultation	Normal, Hypoactive/Hyperactive bowel sounds
Genitalia	
Inspection	Perineal hygiene, Inguinal swelling, rashes and perianal excoriations Males: Ulcers, Skin excoriation and Scrotal Swelling Females: Discharge, Bleeding, labial swelling and prolapse of uterus, bladder

Palpation	Inguinal swelling, mass and tenderness
Malodor	Foul-smelling discharge
Back	Inspection of pressure points Area of pain and tenderness Curvature of spine
Skin	
Inspection	Pressure points from head to toe Rashes, bruises, lesions and edema
Palpation	Temperature, moisture and skin turgor
Nails	Color consistency and capillary refill
Extremities	
Inspection	Deformity, Bruises, Rashes, Edema and contractures Range of motion
Palpation	Peripheral pulses and Capillary refill
Strength	Grip strength and power
Reflex	Patellar, biceps, triceps, and plantar reflexes
Mobility	Weight-bearing (Full/partial), Balance and Gait
Stomas, Tubes and IV catheters	Gastrostomy, Jejunostomy, Ileostomy, Colostomy, Urostomy Tracheostomy, Nasogastric tube, Urinary catheter and IV catheter Appearance of Stoma and peristomal skin, Signs of inflammation Colour, Consistency and volume of stoma output Functioning of catheter, colour and volume of output Patency and signs of inflammation at IV site

ASSESSMENT OF VITAL SIGNS

Temperature, Pulse, Respiration, Blood pressure

Purpose:

1. To assess the general condition of the patient
2. To establish the baseline values to help future comparison
3. To detect changes early

Measuring Temperature using a digital thermometer

Definition:

Process of measuring body temperature using a clinical thermometer.

Purpose:

1. To determine body temperature
2. To evaluate patient's recovery from fever

Articles required:

1. Clinical thermometer
2. Alcohol swab
3. Kidney tray

Procedure

Action	Rationale
1. Wash your hands.	• Breaks the chain of cross-infection
2. Have the Thermometer ready	• Organization aids skilled performance
3. Explain the purpose and the procedure to the patient.	• Reduces anxiety • Establishes trust • Promotes co-operation

4. Clean the thermometer by wiping it with a cotton swab from the bulb towards the stem.	• Moves the contaminants if any away from the bulb that comes in contact with the patient
5. Assist the patient to assume a supine or sitting position.	• To promote patients' comfort. • To have easy access to the axilla
6. Move the clothing away from shoulder and arm	• To visualize the site
7. Ensure that the axilla is dry. If the axilla is wet with sweat, pat and dry the area with a towel and wait for 5 minutes before taking the reading.	• Moisture in the area will produce false readings.
8. Turn the thermometer ON (Which is indicated by a beep sound). Place the bulb of thermometer in the hollow of axilla perpendicular to the chest.	• To ensure that the bulb is close to the blood vessels in the axilla
9. Keep the arm flexed across the chest	• To ensure that the thermometer is held in place • To ensure that the bulb is tightly wrapped to register the temperature
10. Keep the thermometer in place till you hear continuous beeps (Which means the thermometer has finished recording the temperature)	• To ensure an accurate reading

11. Remove the thermometer and read the value displayed at the eye level	• To ensure an accurate reading
12. Wipe the thermometer from the stem to bulb with an alcohol swab(7,8).	• To prevent the spread of infection and to move the contaminant away from the hand.
13. Explain the results to the patient	• To keep the patient informed • To reduce anxiety
14. Dispose the cotton swabs in a kidney tray or wastebasket	• To prevent the spread of infection
15. Replace the thermometer in its proper place.	• To prepare for the next procedure
16. Document the procedure	• To ensure continuity of care
17. Report an abnormal reading to the physician. Normal body temperature ranges between 36.1°C to 37.2 °C (97°F to 99°F). Temperature above 100 °F is considered as fever.	• To ensure the patient receives the right treatment

Measuring Temperature using Non-Contact Infrared Thermometer (NCIT

Non-contact infrared thermometers can measure the temperature of a person without any contact with a person. For this reason, they are very useful where there is a risk of transmission of infection from one person to another through contact.

Advantages of NCITs:

- Reduces the risk of transmission of infection
- Easy to use and easy to disinfect
- Temperature measurement and remeasurement can be performed rapidly

Limitation of NCITs:

- The reading can be influenced by factors such as position, sunlight, proximity of forehead to the instrument, environment and clothing. But these limitations can be minimized by adhering to standard techniques of measurement.

Preparing the device to measure temperature:

- The NCIT should be placed in the testing room for about 10 to 30 minutes prior to its use.
- It should be placed away from direct sunlight and radiating heat source
- The temperature of the environment should be 16 to 40^{o} C

Preparing the patient:

- The forehead should be dry and clean.
- The forehead should not be blocked by clothing

- Ensure that the temperature in the area is not altered by excessive clothing (head covering, headband) and use of wet wipes

Using NCIT to measure a patient's temperature:

- The NCIT should be held perpendicular to the forehead of the patient.
- The forehead should not be exposed to direct sunlight.
- Ensure that the sensor is clean and dry
- Avoid touching the sensor
- The distance between the forehead and the sensor should be according to the manufacturer's guidelines.
- If the distance to spot ratio according to the manufacturer's guidelines is 12:1 then the NCIT measures the temperature of a spot that is 1-inch in diameter on the surface when it is held at 12-inch distance from the surface.
- The person measuring the temperature should keep the elbow straight the maintain distance from the patient.
- After measuring the temperature, document the finding.
- The cleaning and disinfection of NCTI should be done according to the manufacturer's guidelines.

Measuring a Radial Pulse

Definition:

Process of assessing the presence, rate and rhythm of the radial pulse.

Purpose:

1. To establish the baseline heart rate of the patient
2. To identify the deviation from the normal rate and rhythm

Procedure:

Action	Rationale
1. Wash your hands.	• Breaks the chain of cross-infection
2. Explain the procedure to the patient	• Reduces anxiety • Establishes trust • Promotes co-operation
3. Assist the patient in assuming a supine or sitting position. a. If the patient is in a supine position, place the hand extended straight on the side of the body or flex the elbow and place the forearm on the abdomen. b. If sitting, blend the elbow and place the forearm on the abdomen or on the arm of a chair.	• To promote patients' comfort. • To have easy access to the wrist

4. Examining the pulse a. Place the tips of your index finger and second finger on the radial artery and apply gentle pressure with the thumb on the opposite side. (Figure 4) b. Start counting the pulse and and count for one full minute using a stopwatch or wristwatch c. Assess rate, rhythm and pulse volume	• The fingertips are more sensitive to touch • Gentle pressure ensures that the pulse can be felt at the tip of the fingers without occluding the artery • By counting for one whole minute the rhythm of the pulse can be assessed
5. If pulse cannot be felt in one hand repeat the technique on the other hand.	
6. Document the pulse rate, rhythm and volume	• To ensure continuity of care
7. Wash your hands.	• Breaks the chain of cross-infection
8. Report an abnormal reading to the physician. Normal pulse rate ranges between 60 to 100 beats per minute.	• To ensure the patient receives the right treatment

Figure 4: Process of palpating the radial pulse

Counting Respiration

Definition:

Process of counting patients' breaths while assessing the depth, rhythm and pattern

Purposes:

1. To count the number of respirations per minute.
2. To assess depths, rhythm and use of accessory muscles.

Procedure:

Action	Rationale
1. Wash your hands.	• Breaks the chain of cross-infection
2. Explain the procedure to the patient 3. Respiration is counted after counting the pulse rate or independently	• Reduces anxiety • Establishes trust • Promotes co-operation
4. Assist the patient in assuming a supine or sitting position. a. If the patient is in a supine position, flex the elbow and place the forearm on the abdomen. b. If sitting, blend the elbow and place the forearm on the abdomen or chest.	• To promote patients' comfort. • To visualize or feel the movement of the hand along with each respiratory movement

5. Counting respiration: a. Observe the expansion and relaxation of the patients' abdomen (one expansion and relaxation cycle is counted as one respiration). By placing the nurses' hand on patients' hand, one can also feel the movement of the abdomen. b. Count respirations for one whole minute. c. While counting respiratory rate assess the depth and rhythm of respiration, retractions and use of accessory muscles.	• Counting for one whole minute helps to study the rhythm of respiration
6. Document the respiratory rate, depth and rhythm	• To ensure continuity of care
7. Wash your hands	• Breaks the chain of cross-infection
8. Report any abnormal findings to the physician. The normal respiratory rate ranges from 12 to 16 breaths per minute.	• To ensure the patient receives the right treatment

Measuring Blood Pressure

Definition: Process of measuring blood pressure using a sphygmomanometer

Purpose:

1. To assess blood pressure as a vital sign
2. To diagnose hypertension and hypotension

Procedure:

Action	Rationale
1. Wash your hands.	• Breaks the chain of cross-infection
2. Explain the procedure to the patient	• Reduces anxiety • Establishes trust • Promotes co-operation
3. Clean the diaphragm and the earpiece of the stethoscope with a spirit swab.	• Breaks the chain of cross-infection
4. The patient should have rested for at least 5 minutes before the procedure	• Activity increases blood pressure. (Even activities like walking) • Coffee and smoking can elevate the BP
Preparation: 5. Assist the patient in assuming a comfortable position 6. Ensure that the room is calm and quiet 7. Remove or loosen clothes that are constricting 8. Place the arm at the side of the patient	• Facilitates relaxation • Removing constricting clothing enables in better palpation of the brachial pulse

Checking BP 9. Palpate brachial artery. 10. Place the cuff 2.5cm above the elbow crease (The cuff should not be too tight and too loose i.e. one fingerbreadth) 11. Open the mercury lock 12. Place the stethoscope on the site where the brachial pulse was palpated 13. Inflate the cuff till the brachial pulse completely disappears while hearing through the stethoscope. (The corresponding level of mercury at the sphygmomanometer is systolic BP) 14. Slowly deflate the cuff at the rate of 2 mmHg per heartbeat and wait till the pulse heard through the stethoscope is initially muffled and then disappear. (The corresponding level of mercury at the sphygmomanometer is diastolic BP) 15. Close the mercury lock	• A cuff that is too tight or too loose causes difficulty in reading BP • Deflating the cuff at a slower rate ensures accuracy. • The mercury lock should only be opened while measuring BP to prevent accidental spillage.
16. If the BP should be measured again wait for 5 minutes before reassessment.	• To facilitate relaxation
17. If BP could not be measured on one hand it can be tried on the other hand	
18. Clean the diaphragm and the earpiece of the stethoscope with a spirit swab.	• Breaks the chain of cross-infection
19. Explain the results to the patient	• Helps to decrease the anxiety
20. Document the procedure	• Ensures continuity of care

21. Report any abnormal findings to the physician. Systolic blood pressure between 90 to 120mmHg and diastolic blood pressure between 60 to 80mmHg is considered normal	• To ensure the patient receives the right treatment
22. Replace the equipment in its right place	• Organization aids skilled performance

Figure 5: Process of measuring blood pressure using sphygmomanometer

COMPREHENSIVE SYMPTOM ASSESSMENT

How to assess a patient with pain?

Definition:

- "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage". (IASP, 2011)
- A simpler one: "Pain is what the patient says hurts" (9)

Pain assessment: (9,10)

Site	Where does it pain?
Frequency	Continuous or Intermittent If intermittent then, • How often in a day? • How long does it last?
Impact on activity	Does it affect your work/activities of daily living? Does it affect your sleep?
Medication history	What drugs did you take for the pain? What is the route? How often do you take? Does it give you relief? How long does the relief last? Are there any side effects?
Pain History (OPQRST)	
Onset	When did the pain start?
Provocative/**P**alliative factors	• What makes the pain worse? • What makes the pain better?
Quality	What exactly is it like? • Dull aching pain • Sharp pain • Burning pain • Lancinating pain, etc
Radiation	Does it spread anywhere?

Severity	How severe it is? • Mild • Moderate • Severe
Temporal factors	Does it come and go? Is it worse at any particular time of the day or the night?

To assess the intensity of pain following pain scales can be used.

- Numerical rating scale (For adults)
- Wong-Baker FACES pain rating scale (For paediatric age group)
- Categorical scale

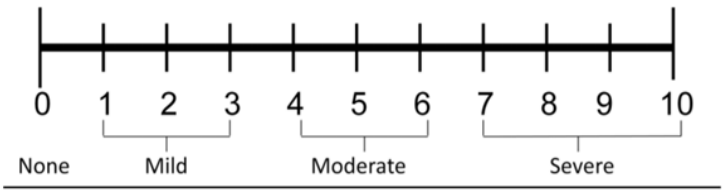


Figure 6: Numerical rating scale

Using numerical rating scale:

1. It can be used on those who are older than 9 years of age and can communicate verbally or non-verbally.
2. Explain to the person that 0 represents no pain and 10 represents the worst possible pain and ask the person to grade his/her pain intensity between 0 to 10 according to the intensity of pain that he/she is experiencing.
3. Document the score with time and date

Wong-Bakers FACES Pain rating scale(11): The Wong-Bakers FACES Pain rating scale can be used in children older than 3 years of age and adults.

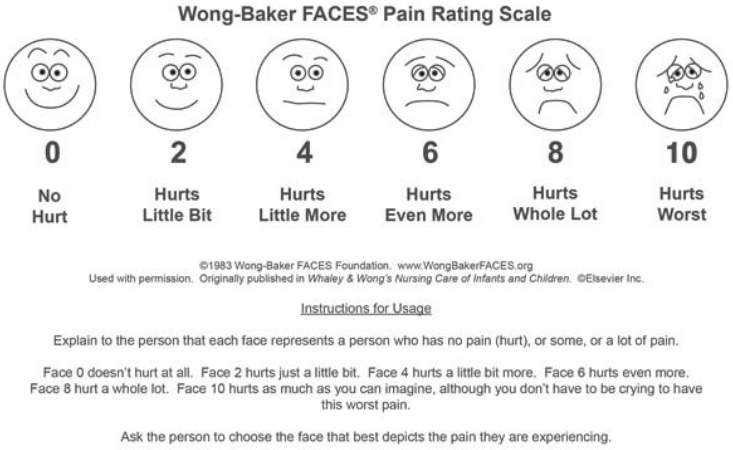


Figure 7: Wong-Baker FACES Pain Rating Scale

Categorical scale: It is a simple self-reporting scale where the person categorises his/her pain intensity as no pain, mild pain, moderate pain and severe pain according to the intensity he/she is experiencing.

Assessing pain in those who cannot communicate:

The above mentioned self-reported assessment tools cannot be used in children less than 3 years, unconscious patients and in those suffering from cognitive impairment. In such cases, other tools such as NVPS and FLACC scale are used to objectively assess the pain.

Assessing pain in adults who cannot communicate:

Adults who cannot communicate their pain can express their pain through certain behaviours. These behaviours include

clenching of teeth, grimacing, tearing, rigid/tense extremities, guarding the area of pain and restlessness.(12) The nurse assessing pain in patients who cannot communicate should look for these pointers. It is also very important to discuss with family caregivers as they are often able to distinguish these behavioural changes in patients.

How to assess a patient with gastrointestinal symptoms?

How to assess a patient with nausea and vomiting?

Nausea: It is an unpleasant feeling of the need to vomit, at times accompanied by autonomic symptoms (sweating, tachycardia) (9,10)

Vomiting: Vomiting is the forceful expulsion of gastric contents through the mouth(9,10)

Assessment: (9,10,13,14)

Onset	When did the vomiting start? Is it related to food intake? What is the time interval between food intake and vomiting?
Amount	Number of episodes of vomiting What is the quantity of the vomitus? (Overall/ Each episode)
Colour	What is the colour of the vomitus? Is there any bloodstain in the vomitus?
Smell	Is there a foul smell to the vomitus?
Frequency	How many times in a day do you vomit?
Precipitating factors	Smell, food and other activities

Associated symptoms	Headache Abdominal pain Fever Heartburns Abdominal distention Hiccups Constipation Loose stools Signs of dehydration
Sensorium	Conscious/Semi-conscious/Unconscious Oriented/Disoriented/Calm/Agitated/Restless
Vestibular disturbances	Do you feel dizzy?
Drugs	What medications are you currently on? Recent chemotherapy or radiotherapy.
If on NG tube	Amount feed Frequency of feeding Type of feed
Examination	a) Per-Rectal digital examination if constipated b) Blood pressure and Heart rate recording

It is very important to establish the cause of vomiting before prescribing anti-emetics (14). **Without establishing the cause of vomiting, prescribing a standard anti-emetic is irrational and can cause distress to patients.** For example, a patient with vomiting due to complete intestinal obstruction should not be given prokinetic agents like metoclopramide which will aggravate the patient's symptoms.

How to assess a patient with constipation?

Constipation: It is characterized by difficult, painful and infrequent defecation of hard stools.(10) It can also be a deviation from daily/regular routine.

Assessment: (9,10,15)

Bowel pattern	How regular are your bowel patterns? (Before the onset of illness and now)
Dietary pattern	Amount of water consumed per day in glasses Inclusion of food rich in fibers like green leafy vegetables
Consistency	Hard stools or Soft stools
Duration	How long have you been having difficulty passing stool? When was the last time you passed stool to your satisfaction?
Associated symptoms	Vomiting Abdominal pain Abdominal distention Abdominal fullness Hiccups Loose stools Visible peristalsis Increased bowel sounds
Drugs	What medications are you currently on? How frequently are you taking laxatives?
Perineal problems	Perianal ulcers/Excoriations/Tumours Haemorrhoids
Examination	Per-Rectal digital examination

Constipation in a palliative care setting is very common. Many patients with constipation present with spurious diarrhoea. **Spurious diarrhoea** occurs when the faeces becomes so hard that the patient is no longer able to expel. The faecal fluid flows around the impacted faeces and begins to leak through the rectum. This leaking fluid has the colour of faeces and it is often difficult to hold, resulting in faecal incontinence. So, it is always prudent to perform per-rectal examination if patients present with following complaints to rule out constipation

- Loose stools
- Hiccups
- Catheter block
- Catheter leak
- If constipated for 3 days or more
- Patient is passing stools multiple times a day in small quantities

If the finding of Per Rectal Examination is loaded rectum, manual evacuation followed by enema is ideal to relieve the distress of the patient immediately. **At this point prescribing oral laxatives that will take time to act will only prolong the distress of the patient,** and the patient will also find the defecation painful and difficult if only oral laxatives are prescribed without an enema.

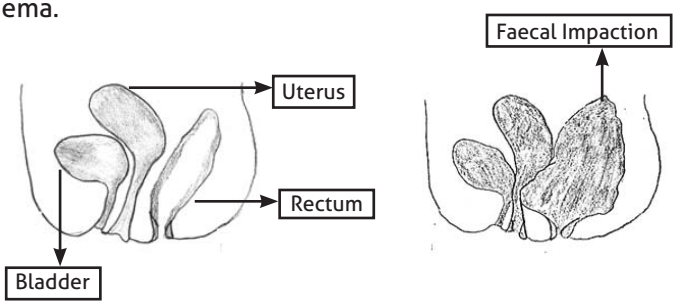


Figure 8: Faecal Impaction causing obstruction of the urinary flow

How to assess a patient with diarrhoea?

Diarrhoea: It is characterized by passing loose or watery stools, three or more times a day (16).

Assessment:

Bowel pattern	How regular are your bowel pattern?
History of constipation	Have you been having difficulty passing stool before this? When was the last time you passed stool to your satisfaction?
Dietary pattern	Any recent change in food consumed?
Consistency	Hard stools or Soft stools or watery stool or mucoid stools
Duration	When did the diarrhoea start? How long have you been having diarrhoea?
Frequency	Number of episodes per day
Associated symptom	Vomiting Abdominal pain or cramps Abdominal distention Fever Signs of dehydration
Drugs	What medications are you currently on? How frequently are you taking laxatives?
Examination	Per-Rectal digital examination Blood pressure and Heart rate Perianal skin condition

One of the commonest reasons for loose stools in patients with palliative care needs is imbalanced laxative therapy. **It is important to keep in mind that constipation can present as 'spurious diarrhoea'.**(17) Prescribing anti-diarrhoeal such as loperamide without ruling out the cause of diarrhoea can add to the distress of the patient. Patients treated with loperamide for loose stools tend to develop constipation, hence anti-diarrhoeal drugs are to be used sensibly after a thorough assessment. In addition to exploring the cause of diarrhoea, assessing dehydration is an integral part of the nursing management of diarrhoea.

How to assess a patient with breathlessness?

Breathlessness is a subjective experience of breathing discomfort.(5)

Air hunger	Do you feel like you are not getting enough air to breathe?
Activity	Do you feel breathless when you are at rest? Do you feel breathless when you perform some activity? What activity makes you breathless?
Position	Do you get relief when you assume a particular position?
Diurnal variation	Is the breathlessness worse at some particular time of the day?
Anxiety	Is your breathlessness precipitated by fear and anxiety? Do you feel anxious when you are breathless?
Associated symptoms	Cough Pain Fever Edema Rattling Cyanosis Pallor Anxiety Abdominal distention

Examination	Respiratory rate and vital signs Use of accessory muscles of respiration Auscultation: • Wheeze • Crepitation • Stridor Unequal air entry Percussion: • Resonance • Hyperresonance • Dullness
Drugs	• What medications are you currently on?

For the purpose of management, the severity of breathlessness is categorized as

1. Breathlessness on exertion
2. Breathlessness at rest
3. Terminal breathlessness (9)

Neurological assessment

Level of consciousness	Alert Awake Lethargic Stupor Comatose Confused			
Orientation	Orientation to Time Orientation to Place Orientation to Person			
Eyes				
Eyesight	Unaided	Glasses/Contact lenses	Prosthesis	Blind
	Double vision		Blurring of vision	
Pupils	Bilaterally Equal		Round/ Abnormal	
	Reacting to light	Brisk	Sluggish	No reaction
Ears	Unaided	Hard of hearing	Hearing aids / Implants	Deaf
Extremities				
Muscle Tone (All four limbs)	Flaccid		Spastic	
Muscle strength (All four limbs)	Full strength		Score 5	
	Movement possible against some resistance		Score 4	
	Able to lift the limb above the bed but not against resistance		Score 3	
	Horizontal movement possible along the bed but not able to lift up		Score 2	
	Only a flicker		Score 1	
	No movement		Score 0	
Tremor	Present		Absent	
Sensation	Normal sensation	To pain		No sensation

Paralysis: Paralysis is defined as loss of function of a muscle or a group of muscles or a part of the body. Paralysis occurs when there is pathology in the nerves/spinal cord/brain, that control the function of the muscles. Paralysis can be classified based on the severity, duration, nature and location.

Based on severity:

Partial paralysis: It is also referred as paresis. It is characterized by weakness of muscle(s) rather than complete loss of function.

Complete paralysis: It is characterized by complete loss of function where the patient cannot move the muscle at all.

Based on the duration:

Temporary paralysis: When the paralysis lasts only for a particular duration of time and the patient regains some or complete functional ability it is called temporary paralysis.

Permanent paralysis: When the loss of the functional ability of the muscle(s) is permanently lost it is called permanent paralysis.

Based on nature:

Spastic paralysis: When the paralysis is characterized by stiff and tense muscles with occasional spasms, it is called spastic paralysis.

Flaccid paralysis: When the paralysis is characterized by soft and flabby muscles it is called flaccid paralysis.

Based on the location:

Monoplegia: When the paralysis affects only one hand or one leg it is referred as monoplegia.

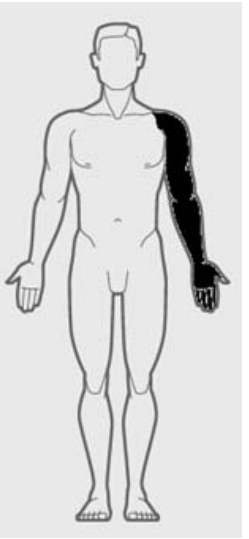
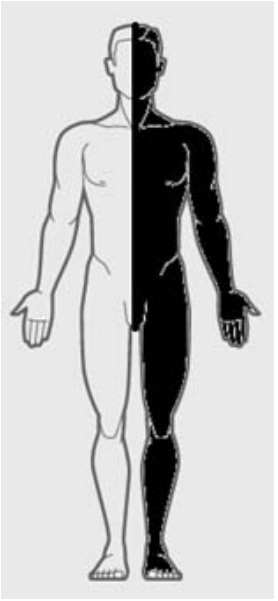
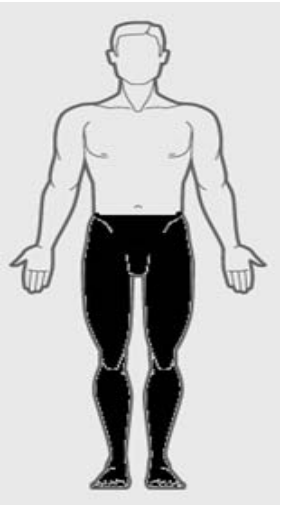


Figure 9: Monoplegia-Paralysis of one hand



Hemiplegia: It is characterized by paralysis of one side of the body. It is usually seen in patients with cerebrovascular accidents.

Figure 10: Hemiplegia- Paralysis of one side of the body



Paraplegia: It is characterized by paralysis of both the lower limbs. It occurs due to injury or compression at the thoracic segment of the spinal cord.

Figure 11: Paraplegia – Paralysis of both the lower limbs

Quadriplegia: It is characterized by paralysis of all four limbs. It is observed when there is spinal cord injury at the cervical segment

Figure 12: Quadriplegia – Paralysis of both upper limbs and both the lower limbs

Assessment of Delirium

Delirium is defined as an acute mental disturbance, that is characterized by confused thinking, disturbed attention usually accompanied by disordered speech and hallucinations.

Nursing Delirium Screening Scale(18):

The Nursing Delirium screening scale is a relatively simple scale that can be used to screen delirium. The scale assesses the 5 main components of delirium, that is, disorientation, inappropriate behavior, inappropriate communication, hallucinations, and psychomotor retardation

The time taken to administer this scale ranges from 1 to 2 minutes and the scale has more than 80% sensitivity and specificity(19) making it simple and effective to administer in a home care setup. In each component, the score ranges from 0 to 2 based on the severity of the symptom. A total score of 2 or more is the cut-off for screening delirium.

Using the Nursing Delirium Screening Scale:

Used with permission from Gaudreau JD & Gagnon P (2005)

Domain	Feature	Score
DISORIENTATION	No signs of disorientation Patient is orientated to time place and person.	**0**
	Mild to moderate Disorientation is observed. Patient still can provide some orientation information to time, place and/or person.	**1**
	Moderate to severe Patient is not orientated to time or place. Severe impairment in which the patient is not able to tell the date, month, day, year, city, state, and country.	**2**

INAPPROPRIATE BEHAVIOUR	No signs of inappropriate behaviour	**0**
	Mild to moderate Hyperactivity is barely noticeable or appears as simple restlessness, to patient moving frequently.	**1**
	Moderate to severe Hyperactivity is severe; patient is constantly moving, overreacts to stimuli, requires surveillance and/or restraint.	**2**
INAPPROPRIATE COMMUNICATION	No sign of inappropriate communication Patient's speech is coherent and goal-directed	**0**
	Mild to moderate Patient's speech is slightly difficult to follow; responses to questions are slightly off-target, too disorganized speech being clearly present.	**1**
	Moderate to severe Conversation is impossible due to severely disorganized thinking or speech. Such as rambling, irrelevant, or incoherent speech, or by tangential, circumstantial, or faulty reasoning	**2**

ILLUSIONS/HALLUCINATIONS Illusions are misperception in the presence of external stimuli. E.g. A rope being perceived as a snake. Hallucinations are perception in the absence of external stimuli. It can be visual hallucination (seeing people/ objects that are not present), auditory hallucination (hearing voices), tactile hallucination (feeling of insects crawling)	No sign of hallucinations	**0**
	Mild to moderate Misperceptions or illusions related to sleep and fleeting hallucinations	**1**
	Moderate to severe Frequent or intense illusions or hallucinations that disrupts care, function, or is associated with inappropriate behaviour.	**2**
PSYCHOMOTOR RETARDATION	No sign of psychomotor retardation	**0**
	Mild to moderate Hypoactivity is barely noticeable, expressed as slightly slowing of movement, to moderate slowing of movements.	**1**
	Moderate to severe Hypoactivity is severe; patient does not move or speak without prodding or is catatonic	**2**

Assessment of urological symptoms

Urinary incontinence

Urinary incontinence is defined as the involuntary urination or loss of urine from the bladder.

Types

1. Stress incontinence
2. Urge incontinence
3. Overflow incontinence
4. Functional incontinence

Stress incontinence

Stress incontinence is the involuntary loss of urine when the intra-abdominal pressure increases. Actions such as coughing, sneezing and laughing can cause urine leakage in patients with stress urinary incontinence.

Assessment question:

1. Do you leak urine when you laugh, sneeze, cough or lift something heavy?
2. Do you leak urine when you exercise?

Urge incontinence:

Urge incontinence is a sudden, strong urge to urinate resulting in involuntary urination before reaching the toilet. It usually occurs in the over-reactive bladder, where the sudden strong urge to urinate occurs even with the bladder being half full.

Assessment questions

1. Do you often feel a sudden urge to urinate and then rush to the toilet?
2. Do you plan to stay near a toilet when you work or perform other activities?

3. Do you often feel nervous because you think that you will lose your bladder control?

Overflow incontinence:

Overflow incontinence occurs when the bladder emptying is incomplete resulting in leakage of urine with or without feeling the urge to void. It usually occurs in case of obstruction of the urethra. E.g. Prostate Enlargement.

Assessment question:

1. Do you often feel that you have not completely emptied your bladder?
2. Do you find yourself soiling the underwear often?

Functional incontinence:

Functional incontinence occurs when there is no problem with the urinary tract but the person is incontinent due to other ailments such as cerebral palsy, dementia, arthritis, etc.

Assessing functional incontinence

1. Ruling out other types of incontinence
2. Identify underlying disease leading to incontinence

Hesitancy:

Hesitancy is defined as the difficulty in initiating the urinary stream or delay in the urinary stream. It is usually seen in benign prostatic enlargement.

Frequency:

Urinary frequency is defined as the frequent micturition more than the normal occurrence in day or night or both day and night. Typically, it is more than 8 times per day with the volume being less than 200mL per voiding. Frequency may be accompanied with an urge to urinate.

Polyuria:

Polyuria is defined as frequent micturition more than the normal occurrence with a normal amount of urine at each voiding. Thus, the overall urine output exceeds 2 to 3 liters over 24hours.

Poor stream:

A weak or slow stream of urine while voiding

Intermittent stream:

Difficulty in maintaining a steady stream of urine while voiding or intermittent stream of urine while voiding.

Dysuria:

Dysuria is defined as painful or burning micturition.

Oliguria:

Oliguria is defined as urine output less than 400mL/day

Anuria:

Anuria is defined as urine output less than 50mL/day

Nocturia:

Nocturia is defined as the need to wake up one or more times to urinate.

Renal colic:

Renal colic is characterized by sudden onset flank pain that radiates to the abdomen laterally and/or to the groins. The pain is also characterized as constant pain with colicky episodes of pain with increased intensity.

Pyuria:

Presence of pus/ white blood cells in the urine.

Hematuria:

Presence of blood in the urine

Urinary retention:

Is defined as the inability to voluntarily void urine.

Bladder spasm:

It is defined as the sudden, involuntary contraction of the bladder usually associated with pain and urge to urinate.

Intake output chart that can be used at home:

Name of the patient: **Date:**				
Input			**Output**	
Time	**Type of fluid given**	**Volume (mL)**	**Time**	**Output (mL)**

Assessment of fatigue

A subjective feeling of tiredness, weakness or lack of energy(20).

Assessment of fatigue:

Qualitative description of fatigue	Start with open-ended questions "Tell me about your fatigue" "How do you feel?"
Intensity of fatigue	Numerical rating scale (NRS) 0=No fatigue 10=Complete exhaustion
History and Physical examination to identify the cause	Dehydration Infection (Fever) Anemia Electrolyte imbalance Cachexia Neurological weakness Hormonal (Hypothyroidism) Sleep disturbance Drug-induced (Sedation) Hypoglycemia
Dietary intake	Have you been able to eat well in the last few days?
Mental dimension	Cognitive impairment Depression
Aggravating and Alleviating factors	What makes you feel more fatigued? What helps you when you feel fatigued?
Impact on activities of daily living	Do you have trouble starting things because you are too tired? Do you have trouble finishing things because you are tired? Do you need to sleep during the day? Do you need assistance in performing your usual activities?
Emotional impact of fatigue	Do you feel frustrated/irritated being too tired to perform the things you want to do?
Social impact of fatigue	Do you restrict your social activities because you are too tired?

Assessment of appetite

Maintaining a good appetite is essential to sustain normal bodily function. Especially in patients requiring palliative care appetite plays an important role as the nutritional requirement in a patient with a life-limiting illness increases to cope with the advancing disease and treatment. Patients with poor appetite suffer from weight loss leading to frailty, falls, fractures, recurrent infections and bedsores.(21) All these issues reduce the life span of the patients. Identifying poor appetite early and preventing weight loss can help the patient cope better with the illness and the treatment ultimately improving the quality of life.

Assessment of appetite:

The appetite of the patient can be assessed by asking the following questions.

- Do you feel like eating?
- Do you feel hungry?
- Are you able to eat when you feel hungry?
- Does the food taste good when you eat?
- How was your eating routine before the onset of the illness/disability?
- How has your eating routine changed after the illness/disability?
- Do you have any problems while eating? Such as pain, difficulty swallowing, nausea, vomiting and bad taste.

Assessment of Wound

Assessment of a patient with a wound:

Co-morbidities and personal habits that can complicate the wound management	Diabetes, Peripheral vascular disease, Coronary artery disease, Substance abuse, Tobacco use
Impact of the wound on the day to day activities of the patient and the family	Ability to perform Activities of daily living Ability to go for work
Patients' self-care ability	Can the patient perform dressing on his own?
Primary caregivers' ability	Can the primary caregiver follow through the advice given? His/her problems and concerns.
Patients' nutritional status	General built Consumption of a balanced diet including, rice, grams, pulses, meat and green leafy vegetables.
Social support structure	Are there volunteers to help the family? Is anyone available for dressing the wound daily?
Sleep and rest	Is the patient able to sleep well? How many hours of sleep per day? Is there any difficulty in resting?

Assessment of the wound:

Aetiology of the wound	Malignant or Non-malignant ulcer
Nature of the ulcer	Healing, Delayed healing, Non-healing
Dimensions of the wound	Size, shape, depth of the wound and undermining of the wound edges
Exudate	Serous, Sanguineous, Serosanguineous and Purulent.
Malodour	SNIFFF (Smell-Nil, Faint, Foul, Forbidding) (22)
Type of tissue	Granulation tissue, Slough, Eschar or Necrotic tissue
Skin surrounding the ulcer	Pruritis, discoloration and dryness
Pain	Severity of pain Type of pain
Maggots	Are there maggots in the wound? Is the wound kept open?
Bleeding	Have there been episodes of bleeding from the wound in the past? Does the wound bleed while performing dressing?
Risk of contamination	Is there a chance of faecal contamination or soiling with urine?

Assessment of pressure sores

Pressure Points

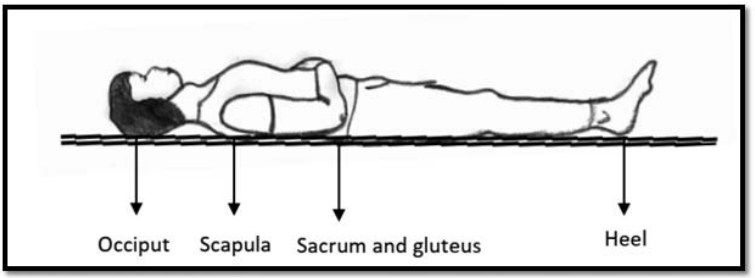


Figure 13: Pressure points in supine position

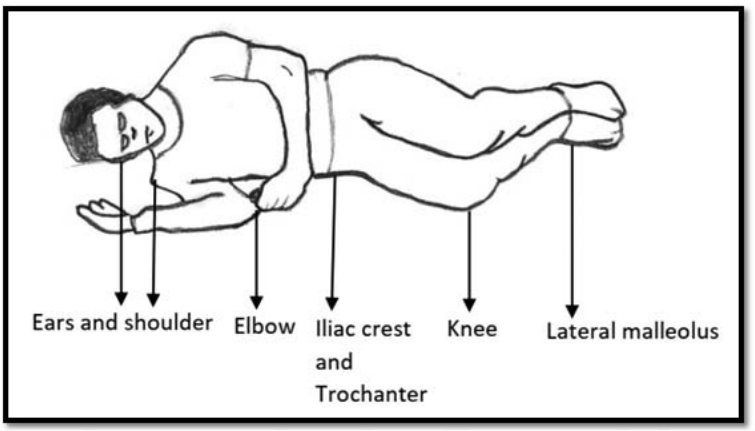


Figure 14: Pressure points in lateral position

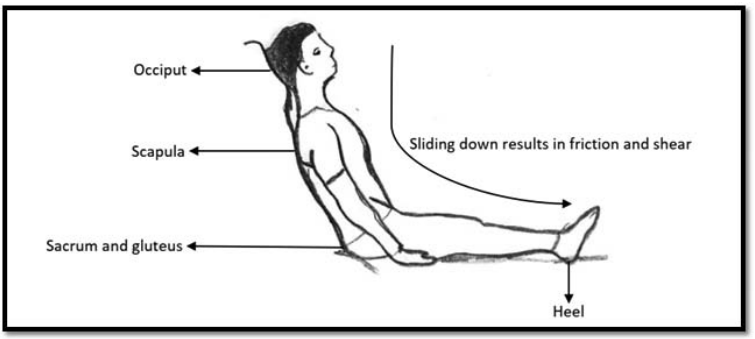


Figure 15: Pressure points in sitting position

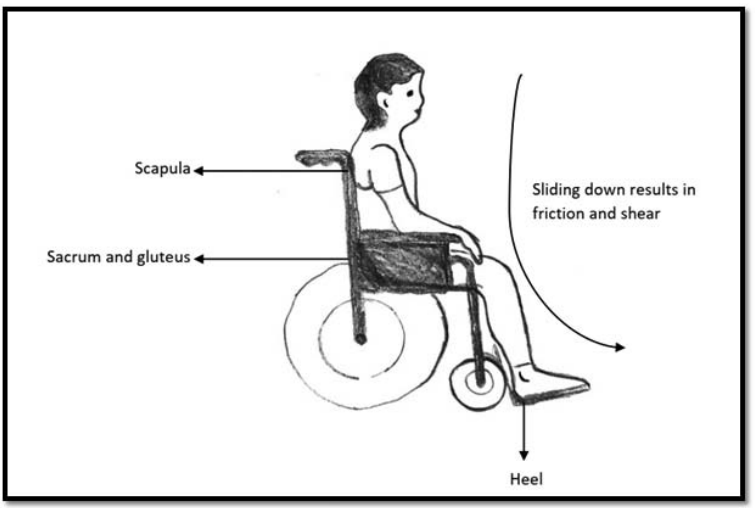


Figure 16: Pressure points in sitting position

In prone position breasts in females and genitalia in males are areas susceptible to pressure ulcers.

Stages of Pressure sore:

The characteristic feature of the Stage 1 pressure sore is Non-blanchable redness. But this feature may not be very obvious in people with darker complexion but the area looks and feels characteristically distinct from the surrounding areas. The area is usually painful, may feel warm or cold compared to the surrounding area.

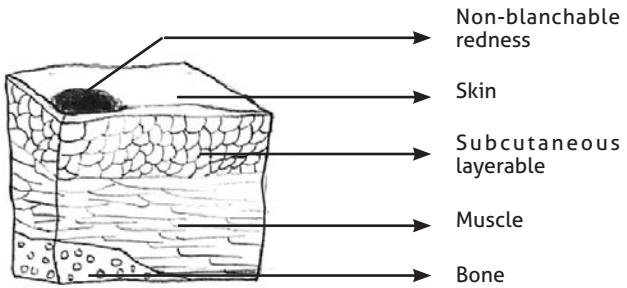


Figure 17: Stage 1 Pressure sore

In stage 2 pressure ulcer there is a partial loss of dermis. There is an open ulcer. The wound bed appears as pink and red with serosanguinous exudates. There may also be blisters filled with serosanguinous fluid that are yet to rupture. The sloughs or eschar are absent in stage 2 pressure ulcers.

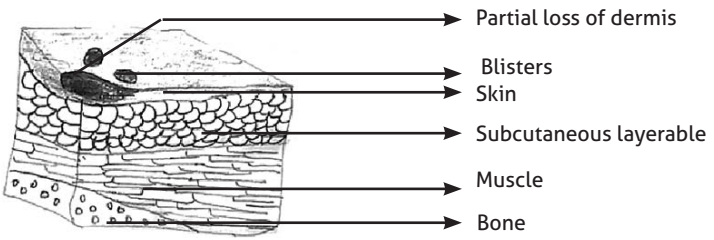


Figure 18: Stage 2 Pressure sore

Stage 3 pressure sore is characterized by full-thickness skin loss. The ulcer exposes the subcutaneous fat or extends into the subcutaneous fat but not the muscles, tendons or bones. There may be undermining or tunneling in stage 3, so one has to carefully examine stage 3 ulcers. The stage 3 pressure sore may quickly progress into stage 4 in those who have very thin built as they have less subcutaneous padding. Similarly, the areas with less subcutaneous fat such as occiput, ear, scapula, sacrum, heel and malleolus the progression from stage 2 to stage 4 will be rapid.

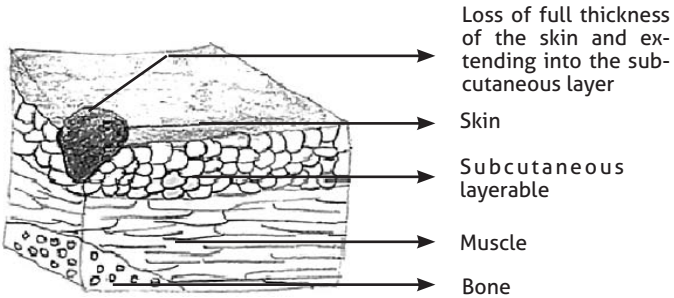


Figure 19: Stage 3 Pressure sore

Stage 4 pressure sore is characterized by loss of full thickness of the skin with the ulcer extending into muscles, tensions and bones like a deep crater. The depth of the ulcer will vary based on the location of the ulcer. Similar to stage 3 there may be undermining or tunnelling. The presence of slough or eschar is common. A stage 4 pressure sore may lead to osteomyelitis that can further complicate the management.

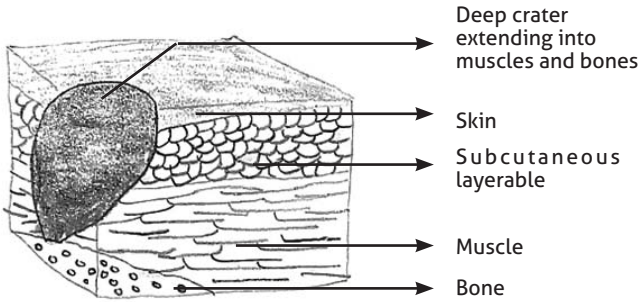


Figure 20: Stage 4 Pressure sore

Unstageable pressure sore:

To stage a pressure sore, one needs to visualize the base of the wound. When the base of the wound is covered by slough or eschar then the pressure sore is called unstageable pressure sore. Once the slough is removed the pressure sore is usually stage 3 or stage 4. In an unstageable pressure sore, there is a loss of full thickness of the skin.

BRADEN SCALE (For Predicting Pressure Sore Risk in Home Care)

Patient's Name: _____

Evaluator's Name_____

Date of Assessment: _____

SENSORY PERCEPTION Ability to respond meaningfully to pressure related discomfort	**1. Completely Limited** Unresponsive (does not moan, flinch, or grasp) to painful stimuli, due to diminished level of consciousness or sedation. OR Limited ability to feel pain over most of the body.	**2. Very Limited** Responds only to painful stimuli. Cannot communicate discomfort except by moaning or restlessness. OR Has a sensory impairment which limits the ability to feel pain or discomfort over 1/2 of the body.	**3. Slightly Limited** Responds to verbal commands, but cannot always communicate discomfort or the need to be turned. OR Has some sensory impairment which limits the ability to feel pain or discomfort in 1 or 2 extremities.	**4. No Impairment** Responds to verbal commands. Has no sensory deficit which would limit the ability to feel or voice pain or discomfort.
MOISTURE Degree to which skin is exposed to moisture	**1. Constantly Moist** Skin is kept moist almost constantly by perspiration, urine, etc. Dampness is detected every time patient is moved or turned.	**2. Often Moist** Skin is often, but not always moist. Linen must be changed as often as 3 times in 24 hours.	**3. Occasionally Moist** Skin is occasionally moist, requiring an extra linen change approximately once a day.	**4. Rarely Moist** Skin is usually dry; Linen only requires changing at routine intervals.
ACTIVITY Degree of physical activity	**1. Bedfast** Confined to bed.	**2. Chairfast** Ability to walk severely limited or non-existent. Cannot bear own weight and/or must be assisted into a chair or wheelchair.	**3. Walks Occasionally** Walks occasionally during the day, but for very short distances, with or without assistance. Spends the majority of the day in bed or chair.	**4. Walks Frequently** Walks outside the bedroom twice a day and inside the room at least once every two hours during waking hours.
MOBILITY ability to change and control body position	**1. Completely Immobile** Does not make even slight changes in body or extremity position without assistance.	**2. Very Limited** Makes occasional slight changes in body or extremity position but unable to make frequent or significant changes independently.	**3. Slightly Limited** Makes frequent though slight changes in body or extremity position independently.	**4. No Limitation** Makes major and frequent changes in position without assistance.
NUTRITION usual food intake pattern	**1. Very Poor** Never eats a complete meal. Rarely eats more than 1/3 of any food offered. Eats 2 servings or less of protein (meat or dairy products) per day. Takes fluids poorly. Does not take a liquid dietary supplement. OR Is NPO and/or maintained on clear liquids or IV's for more than 5 days.	**2. Probably Inadequate** Rarely eats a complete meal and generally eats only about 1/2 of any food offered. Protein intake includes only 3 servings of meat or dairy products per day. Occasionally will take a dietary supplement. OR Receives less than optimum amount of liquid diet or tube feeding.	**3. Adequate** Eats over half of most meals. Eats a total of 4 servings of protein (meat, dairy products per day. Occasionally will refuse a meal, but will usually take a supplement when offered. OR Is on a tube feeding or TPN regimen which probably meets most of the nutritional needs.	**4. Excellent** Eats most of every meal. Never refuses a meal. Usually eats a total of 4 or more servings of meat and dairy products. Occasionally eats between meals. Does not require supplementation.

FRICTION & SHEAR	**1. Problem** Requires moderate to maximum assistance in moving. Complete lifting without sliding against sheets is impossible. Frequently slides down in bed or chair, requiring frequent repositioning with maximum assistance. Spasticity, contractures or agitation leads to almost constant friction.	**2. Potential Problem** Moves feebly or requires minimum assistance. During a move skin probably slides to some extent against sheets, chair, restraints or other devices. Maintains relatively good position in chair or bed most of the time but occasionally slides down.	**3. No Apparent Problem** Moves in bed and in chair independently and has sufficient muscle strength to lift up completely during the move. Maintains good position in bed or chair.	
Total Score				

Scoring of Braden scale:

- Score 19 to 23 – Not at risk of developing a pressure sore
- Score 18 to 15 – Mild risk of developing a pressure sore
- Score 14 to 13 – Moderate risk of developing a pressure sore
- Score 12 to 10 – High risk of developing pressure sore
- Score ≤9 – Severe risk of developing a pressure sore

How frequently should the risk assessment be performed?

- Assessment of the risk of developing pressure sore should be done at the first homecare visit and periodically at every visit.(23)

Measures to prevent pressure sores:

- Preventive measures should be initiated when the patient scores ≤18 in the Braden scale
- Turn the position of the patient every 2 hours
- Encourage ambulation where ever possible
- Encourage a simple, range of motion exercise in patients who are confined to bed
- Encourage to consume 2 to 3Ls of oral fluids unless contraindicated

- Use emollients to keep the skin hydrated
- If there is excessive moisture due to perspiration or urinary incontinence consider using absorbent pads, bedpan and urinary drainage system
- Do not elevate the head more than 30 degrees to reduce friction
- Use pressure redistribution surfaces such as water beds, air beds, water bags, pillows and head rings.
- Advise the family to perform back care daily
- Instruct and demonstrate to the family how to turn and lift the patient to minimize friction.
- Ensure that the patient gets a balanced diet with an adequate amount of calories and proteins

Assessment of oral cavity

1. Assessment of the oral cavity before performing oral care will provide information on the frequency of oral care required and the type of cleansing agent to be used. For patients at the risk of developing oral ulcers assessment should be performed daily.(24)
2. Following areas are to be assessed
    a. Buccal mucosa – Dryness, Redness, Ulcers and Coating
    b. Saliva – Colour, Consistency and Volume
    c. Teeth – Colour, Debris and Plaque
    d. Tongue – Colour, Ulcers, Hydration and Coating
    e. Halitosis – Presence of bad smell

A. Inner side of upper lip

B. Inner side of lower lip

C. Inner side of left and right cheek

D. Soft Palate

E. Dorsal aspect of the tongue

F. Floor of the mouth

G. Lateral aspect of the toungue on both sides

Figure 21: Oral sites to be examined

WHO Oral toxicity scale(25)

Grade 0 – No Changes

Grade 1 – Soreness or Erythema

Grade 2 – Soreness or Erythema with ulceration and can eat solid foods

Grade 3 – Soreness or Erythema with ulceration and can use a liquid diet only

Grade 4 – soreness or Erythema with ulceration and oral alimentation is not possible

ASSESSMENT OF PSYCHOLOGICAL ISSUES

Psychological distress:

The National Comprehensive Cancer Network (NCCN) defines psychological distress as "a multifactorial, unpleasant emotional experience of a psychological (cognitive, behavioural and emotional), social and or spiritual nature that may interfere with the ability to cope with cancer its physical symptoms and its treatment". Though this definition focuses on the psychological distress in cancer patients, the way psychological distress affects the ability to cope with a non-cancer, chronic and long-term condition is not very different.

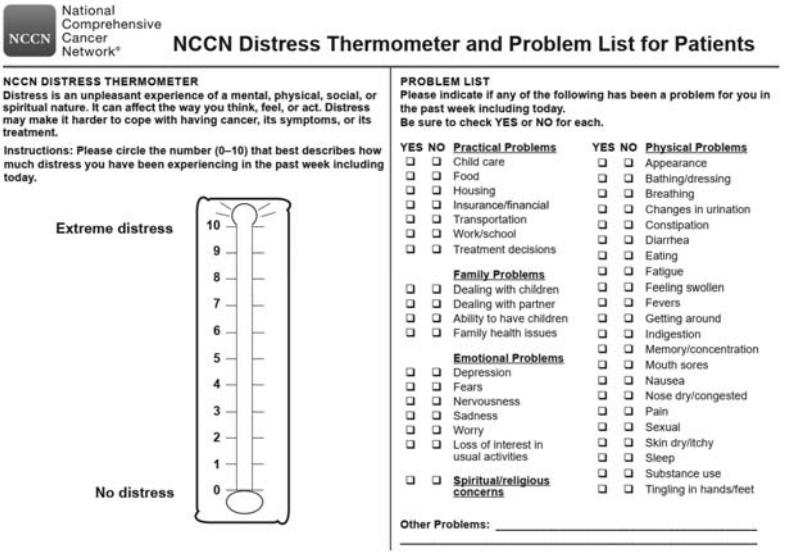
Assessing psychological distress:

Though there are several tools to assess psychological distress, to apply in a homecare visit following three tools are simple, easy to administer and has good validity

- Distress thermometer
- Screening for anxiety and depression (Patient Health Questionnaire - 4 (PHQ-4))
- WHO well-being index

NCCN Distress thermometer

The NCCN distress thermometer has a numerical rating scale measuring the level of distress from 0 to 10. The person is asked to choose a score between 0 to 10, which best indicates the level of distress that he/she experienced in the past week including the day of assessment. In addition to this, there is a comprehensive list of items divided into 5 domains, and the person is asked if that item was a problem for him/her in the last week. In distress thermometer, a score of ≥4(26) will require further exploration into the problem list and reference to the appropriate professional team.



National Comprehensive Cancer Network®

NCCN Distress Thermometer and Problem List for Patients

NCCN DISTRESS THERMOMETER

Distress is an unpleasant experience of a mental, physical, social, or spiritual nature. It can affect the way you think, feel, or act. Distress may make it harder to cope with having cancer, its symptoms, or its treatment.

Instructions: Please circle the number (0–10) that best describes how much distress you have been experiencing in the past week including today.

Extreme distress — 10 9 8 7 6 5 4 3 2 1 0 — No distress

PROBLEM LIST

Please indicate if any of the following has been a problem for you in the past week including today.
Be sure to check YES or NO for each.

YES	NO	Practical Problems
❑	❑	Child care
❑	❑	Food
❑	❑	Housing
❑	❑	Insurance/financial
❑	❑	Transportation
❑	❑	Work/school
❑	❑	Treatment decisions
		Family Problems
❑	❑	Dealing with children
❑	❑	Dealing with partner
❑	❑	Ability to have children
❑	❑	Family health issues
		Emotional Problems
❑	❑	Depression
❑	❑	Fears
❑	❑	Nervousness
❑	❑	Sadness
❑	❑	Worry
❑	❑	Loss of interest in usual activities
❑	❑	**Spiritual/religious concerns**

YES	NO	Physical Problems
❑	❑	Appearance
❑	❑	Bathing/dressing
❑	❑	Breathing
❑	❑	Changes in urination
❑	❑	Constipation
❑	❑	Diarrhea
❑	❑	Eating
❑	❑	Fatigue
❑	❑	Feeling swollen
❑	❑	Fevers
❑	❑	Getting around
❑	❑	Indigestion
❑	❑	Memory/concentration
❑	❑	Mouth sores
❑	❑	Nausea
❑	❑	Nose dry/congested
❑	❑	Pain
❑	❑	Sexual
❑	❑	Skin dry/itchy
❑	❑	Sleep
❑	❑	Substance use
❑	❑	Tingling in hands/feet

Other Problems: _____

Patient Health Questionnaire-4 (PHQ-4): (27)

The PHQ-4 is another simple tool with good validity to screen for anxiety and depression. The PHQ-4 measures psychological distress for the past 2 weeks.

Over the last 2 weeks, how often have you been bothered by the following problems?	Not at all	Several days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Little interest or pleasure in doing things	0	1	2	3
4. Feeling down, depressed, or hopeless	0	1	2	3

Scoring:

PHQ-4 total score ranges from 0 to 12, with categories of psychological distress being:

- None 0-2
- Mild 3-5
- Moderate 6-8
- Severe 9-12

Anxiety subscale = sum of items 1 and 2 (score range, 0 to 6)

Depression subscale = sum of items 3 and 4(score range, 0 to 6)

On each subscale, a score of 3 or greater is considered positive for screening purposes.

In addition to the questionnaire also explore for suicidal ideation and sleeplessness.

WHO well-being index: (28)

The WHO well-being index (WHO-5) is short and simple to use self-reporting tool that measures a person's sense of well-being. The tool has good validity for screening depression. The tool has 5 statements. Each statement is scored between 0 to 5. The maximum score that can be obtained is 25. Higher the score means better the well-being.

Over the last two weeks	All the time	Most of the time	More than half of the time	Less than half of the time	Some of the time	At no time
I feel cheerful and in good spirits	5	4	3	2	1	0
I feel calm and relaxed	5	4	3	2	1	0
I feel active and vigorous	5	4	3	2	1	0
I wake up feeling fresh and rested	5	4	3	2	1	0
My daily life is filled with things that interest me	5	4	3	2	1	0

Scoring:

The raw score is calculated by summing up the score of individual statements. A total raw score of less than 13 indicates poor well-being or if the person scores 0 or 1 in any one of the 5 items, the person should be referred to a professional mental health team.

ASSESSMENT OF SPIRITUALITY

Spirituality is defined as "a dynamic and intrinsic aspect of humanity through which persons seeks ultimate meaning, purpose and transcendence and experience relationship to self, family, others, community, society, nature and the significant or sacred. Spirituality is expressed through beliefs, values, traditions and practices."

Questions to help explore Spiritual Issues :

The questionnaire aims at exploring religious practices, belief in god, supporting systems/ institutions and sources of hope/ coping methods

- Do you follow any religious practices? If yes, has any of it changed due to illness?
- Any religious ritual / spiritual practices / that helps you in coping up with your current situation?
- Do you believe in God? If yes, what do you think is your relationship with God? Has this helped you in coping with the current situation?
- Is there anything related to your belief system that you find difficult in your current situation?
- Where do you usually get help and support in difficult times?
- What all things in your personal life do you find not helpful in difficult situations?
- What are your current hopes for the future?
- What are your fears and worries about the future?
- What do you usually do when you are in difficulty? Where do you find support and strength in such situations?
- What can I do to support you during the current difficult period?

RECOGNIZING THE SIGNS OF DYING

In providing home-based palliative care the members of the homecare team especially the nurse should improve his/her competencies in recognizing the signs of dying. Developing this competency will help the patient, family and the palliative care team to plan the course the treatment. A thorough assessment is a very crucial step in diagnosing dying. By performing an impeccable assessment, the homecare team will be able to assist the patient and the family in choosing the right place of care, plan of care and other decisions and preparations for death and dying.

Decreased intake:

- As a person approaches the End of Life (EOL) phase the nutritional requirement of the body comes down drastically. So, the person may have decreased appetite and decreased thirst.
- It is important to keep in mind that this is a natural process and it is not distressing to the patient. But it may be distressing for the family caregivers to see the patient not eating or drinking fluids.
- Reassuring them and encouraging them to provide sips of water and applying moist swab on lips can promote the comfort of the patient, on the other hand forcing feeds may increase the patient distress with little to no benefit.

Increasing weakness:

- As the person moves closer to death, weakness becomes more and more profound.
- As the weakness increases general activity decreases.

- Towards the late terminal stage, they may find it difficult to continue conversations and even tolerate personal care.
- The goal at this juncture is to avoid routines that make the person uncomfortable and provide care that is aimed at improving comfort.

Increasing drowsiness:

- As a patient moves into the End of Life phase he/she becomes increasingly drowsy and difficult to arouse. The time spent sleeping gradually increases.
- There may be decreased speech and they may appear withdrawn.
- In some patients, there may also be confusion, inability to recognise people and restlessness.
- Terminal delirium and restlessness can be effectively managed by haloperidol or benzodiazepines based on the cause.
- Family caregivers should be advised to talk to the patient when the patient is fully alert and talk calmly and gently.

Changes in respiration:

- As a person approaches the terminal phase the respiration becomes shallow.
- In some patients, the respiratory rate may increase but usually, the respiration becomes shallow and spaced out.
- Jaw breathing can be seen in some patients.
- Carers should be reassured that this is a normal process of dying and it is not distressing to the patient.

- Another distressing symptom for the family carers to watch is 'death rattle'. It occurs due to the accumulation of salivary secretion and mucus at the throat as swallowing and coughing reflex disappear during the end of life phase.
- The gurgling sound produced by the oscillating fluid with each respiration can be distressing to the carers but not to the patient.
- It can be managed effectively by turning the patient to the sides and draining the secretions. Anticholinergics like glycopyrrolate given sublingually or subcutaneously can reduce these secretions.
- The secretions that have collected already should be drained first as these drugs only prevent further accumulation.

Temperature:

- During the terminal stage, the body temperature drops.
- This may be due to reasons like decreasing metabolism and slowing down circulation.
- The feet and hands may appear pale, cold and clammy.
- An extra blanket may be required if the person indicates that he/she is feeling cold.
- At this point, the room should be well ventilated and less crowded.

Changes in excretion:

- Urinary and faecal incontinence is observed in only a few patients during end of life phase.
- The urinary output decreases drastically, the urine may appear dark and brown.

- There may be edema due to fluid retention.
- It is important to keep patients' comfort as a priority at this point.
- Maintaining good perineal hygiene and prevention of pressure sores is crucial to maintain comfort.

Nursing Procedures and Interventions

Non-pharmacological techniques for promoting comfort of patients with breathlessness in a home setting

Alleviate anxiety:

- Openly discussing the cause of breathlessness with the patient and the family is crucial in reducing the anxiety that aggravates breathlessness.
- During an acute exacerbation, the patient fears that death may occur due to suffocation. Hence reassurance that the patient is unlikely to suffocate and die can alleviate the patient's anxiety.
- Anxiolytics can be prescribed if anxiety does not improve with non-drug measures

Lifestyle adjustments:

- Pacing the daily activities: Rest and then eat, then rest and then wash, then rest and then dress.(9)

- Doing tasks while sitting. (Eg: Cutting vegetables)
- Spatial adjustment in terms of having bedrooms on the ground floor and keeping essential things on a table close to the patient.

General measures during the episode of breathlessness:

- Fowlers or semi-fowlers position
- Cross ventilation
- Use of an electric fan
- Wiping the face with a wet cloth
- Do not crowd around the patient
- Loose clothing is preferred

Physiotherapy:

- Pursed lip breathing
- Pacing the breath (Slow, controlled and deep breaths)
- Mild exertion to increase tolerance threshold
- Using incentive spirometry to improve lung capacity

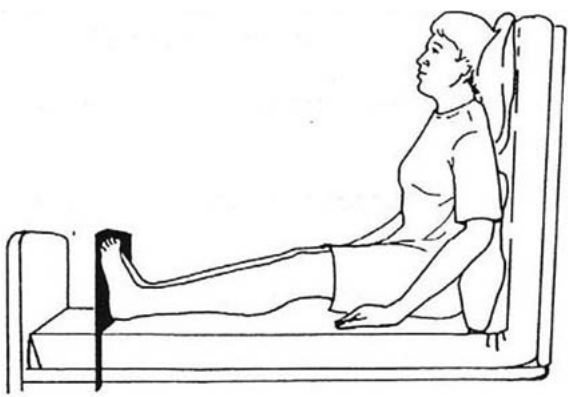


Figure 22: Fowlers Position (Image credits: brooksidepress.org)

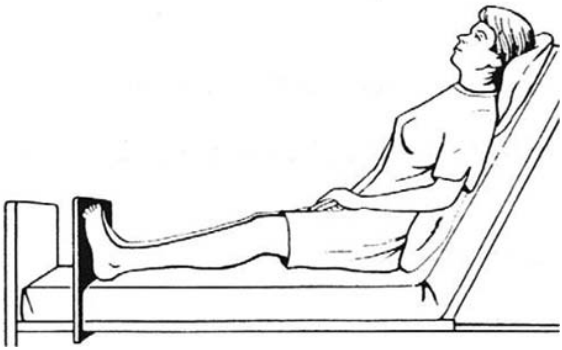


Figure 23: Semi-Fowlers Position (Image credits: brooksidepress.org)

ADMINISTERING MEDICATIONS

Responsibilities of a nurse while administering medications

1. Wash your hands. (Rationale: Breaks the chain of cross-infection)
2. Follow the 10 Rights:
    a. Right patient.
    b. Right drug.
    c. Right dose
    d. Right time
    e. Right route
    f. Right documentation
    g. Right patient education
    h. Right to refuse
    i. Right assessment
    j. Right evaluation
3. Check the expiry date of the medicine
4. Before the administration of a drug, the nurse should know the therapeutic action, side effects, adverse effects of the drug and the precautions to be taken while administering the drug.
5. Ensure that the drug has not been administered by the family member/others before the arrival of the home-care team
6. Explain to the patient and the family why this medication is being given

7. During home visits check the medicine cover/box to ensure that the right drug is in the right cover and to check adherence to prescription

Administering Oral Medications

Definition:

Process of administering medication by mouth to be swallowed

Purposes:

1. To manage symptoms
2. To treat disease

Equipment required:

1. Drinking water in a cup
2. Medicine cup (1)
3. Pill crusher/ tablet cutter if needed

Procedure:

Action	Rationale
1. Wash your hands	• Breaks the chain of cross-infection
2. Explain to the patient and the family why this medication is being given	• Alleviates anxiety • Ensures cooperation
3. Verify the patient's name from the prescription. 4. Also, enquire if any drugs were given before the arrival of home-care team	• To prevent the wrong administration • To prevent overdosing and drug interactions
5. Proceed from top to the bottom of the prescription.	• Following an order ensures that no drugs are missed

6. Collect all the medicines in a cup	• Prevents spillage
7. Administer them one by one with sips of water	• Swallowing one by one is easier
8. Liquid medicines should be measured using a measuring cup (Measurement should be done at the eye level) 9. If the patient cannot swallow some drug it can be crushed in a pill crusher and mixed with water or juice **Nursing alert:** a. Enteric-coated tablets should not be crushed, they should be swallowed whole b. If a tablet is dissolved in water or juice the patient should drink the whole quantity (So it is safe to dissolve the medicine in a small quantity of water/juice)	• Measuring at the eye level ensures accuracy • Some medicines are coated for slow or delayed absorption. Breaking them results in the drug being destroyed by the acid in the stomach or rapid absorption. • Not drinking the entire amount results in inaccurate dose administration.
10. If the patient refuses the medication, document the same	• Serves as legal protection
11. Ensure that the patient is comfortable after the administration of medication.	• To identify adverse reactions if any
12. Document the procedure	• Ensures continuity of care
13. Report to the physician if the patient experiences any discomfort.	• To ensure that the patient receives the right treatment

Administering sublingual or buccal medications

Processes of administering medication through sublingual or buccal route in contrast to swallowing the medication.

Purposes:

1. To facilitate quicker action by bypassing the first-pass metabolism in the liver
2. To administer medications to patients who cannot swallow

Equipment required:

1. Drinking water in a cup (1)
2. Pill crusher/ tablet cutter if needed

Procedure:

Action	Rationale
1. Wash your hands	• Breaks the chain of cross-infection
2. Explain to the patient and the family why this medication is being given	• Alleviates anxiety • Ensures cooperation
3. Verify the patient's name from the prescription. 4. Also, enquire if any drugs were given before the arrival of home-care team	• To prevent the wrong administration • To prevent overdosing and drug interactions.
5. Provide oral care before administering sublingual medications	• To promote hygiene and facilitate absorption
6. Only one tablet can be administered sublingually at a time	• To aid better absorption
7. Crush the tablet into a powdered form and mix the tablet with 1 to 2 drops of water and make it into a paste form	• Making into a paste form facilitates ease of administration

8. Wear gloves preferably double gloves	• To prevent injuries to the fingers as unconscious patients might have biting tendencies
9. Collect the medication paste on the index finger and carefully smear it under the tongue or buccal mucosa. Explain to the patient beforehand that the medication is not for swallowing. 10. Make sure that the oral cavity is not manipulated too much	• Smearing the medication facilitates rapid absorption • Manipulating the oral cavity too much can induce salivary secretion which can induce the swallowing reflex.
11. Ensure that the patient is comfortable after the administration of medication.	• To identify adverse reactions if any
12. Document the procedure	• Ensures continuity of care
13. Report to the physician if the patient experiences any discomfort.	• To ensure that the patient receives the right treatment

PARENTERAL MEDICATIONS

General instructions for administration of parenteral medications

1. Perform hand hygiene before and after administration of parenteral medications.
2. Wear clean gloves while administering parenteral medications
3. Always check the expiry date of vials and ampules before loading the medications
4. Check with the patient, family caregivers and the medical records for possible drug allergies.
5. When a multi-dose syringe is loaded it should be labeled with the name of the patient, name of the drug, dosage per mL and date.
6. One multi-dose syringe should be used only for one patient and any medication remaining beyond 24 hours should be discarded along with the syringe.
7. Injections should not be administered in arm having edema
8. Needles should never be recapped
9. When multiple injections are required consider placing a subcutaneous catheter
10. While administering subcutaneous, intra-muscular injections, only one medication should be injected at a site at a time.
11. Always discard the needles in a puncture-proof container

Administering Intra-Muscular Injection

Definition:

Processes of administering the drug into the muscle using syringe and needle while following aseptic precautions.

Intramuscular injections are often given in the deltoid, vastuslateralis, ventrogluteal and dorso-gluteal muscles.

Intramuscular (IM) injections are generally avoided in patients with palliative care needs as they often do not have enough muscle mass and IM injections are painful. When round the clock parenteral analgesics are required subcutaneous route is preferred over the intramuscular route as the subcutaneous route is less painful and they facilitate repeated injections through subcutaneous catheters.

Purpose:

- To manage symptoms.

Contraindication(29):

IM injections may be contraindicated in patients with

1. Bleeding disorders
2. Generalized edema or local edema
3. Local infection or cellulitis at the injection site (Use alternative site)
4. Shock
5. After thrombolytic therapy (patient who recently had or is having anti-coagulants)
6. Muscular atrophy

Drugs that should not be given intramuscularly(30):

1. Phenytoin
2. Heparin
3. Calcium gluconate
4. Potassium chloride

Equipment required: (31)

1. Sterile syringe (3-5 mL) (1)
2. Sterile needle in appropriate size: commonly used 21 to 23 G with 1.5" (3.8cm) needle (1)
3. Spirit swabs
4. Puncture-proof disposable container (1)
5. Ampoule cutter if available (1)
6. Steel Tray (1)
7. Disposable gloves (1)

To be noted:

1. The needles used for IM injections are longer than subcutaneous needles as the needle is required to reach deep into the muscle.
2. The length of the needle depends also on the site of administration and the depth of subcutaneous fat covering the muscle.
3. The needle gauge for IM injections should be larger to accommodate viscous solutions and suspensions but they are painful.

4. In gluteal injections, not more than 5mL medication should be administered at one site for adults with good muscle mass.(32) If more than 5mL is to be administered the medication should be divided across multiple sites.

5. For children and elderly individuals with inadequate muscle mass limit the quantity to 1 to 2 mL

6. For paediatric age group, vastuslateralis site is preferred.

7. Not more than 2mL should be given via deltoid route (31)

Deltoid site

Find the lower edge of the acromial process and the point on the lateral arm in line with the axilla. Insert the needle 1" to 2" (2.5 cm to 5cm) below the acromial process, usually two or three fingerbreadths, at a 90-degree angle or angled slightly toward the process.

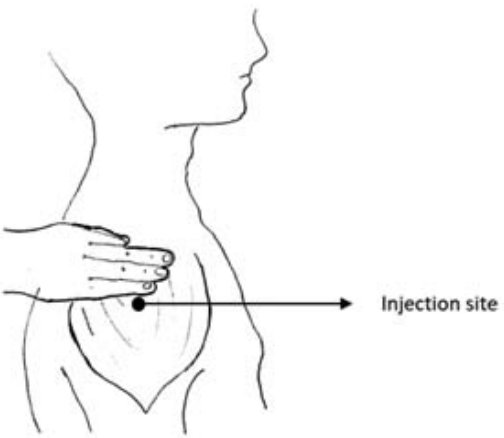


Figure 24: Identifying IM injection site in deltoid muscle

Dorsogluteal site

Inject above and outside a line drawn from the posterior superior iliac spine to the greater trochanter of the femur. Or, divide the buttock into 4 quadrants and inject in the upper outer quadrant, about 2" to 3" (5 to 7.6 cm) below the iliac crest. Insert the needle at a 90- degree angle.

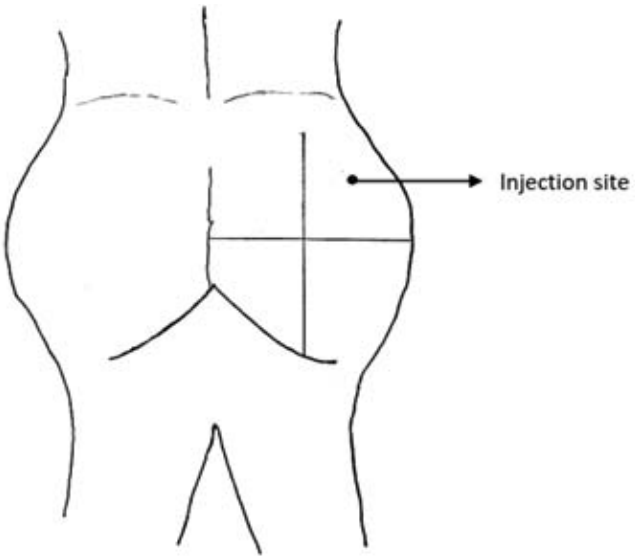


Figure 25: Identifying dorsogluteal site for IM injection

Ventrogluteal site:

It is the safest site for intramuscular injection as this is area is free from major blood vessels and nerves(32). To locate the site, advise the patient to assume a lateral position. If the nurse is right-handed the patients' headend should be on the right-hand side of the nurse and if the nurse is left-handed then the patients' headend should be on the left-hand side of the nurse. Place the base of the thumb on greater trochanter and tip of the index finger on the anterior superior iliac crest. Then make a V shape with your index finger. Give injection at the mid-point between the knuckle of the index and middle finger. The injection is given into Gluteus medius.

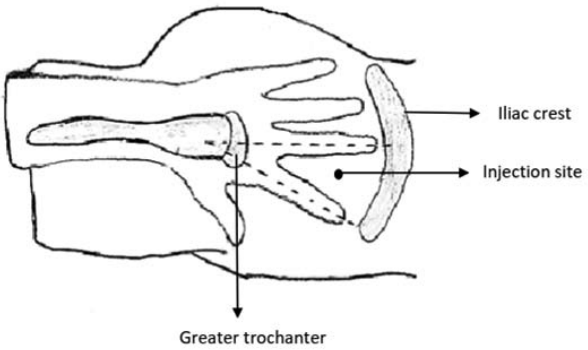


Figure 26: Identifying Ventrogluteal site for IM injection

Procedure:

Action	Rationale
1. Wash your hands	• Breaks the chain of cross-infection
2. Assemble equipment required for the procedure.	• Organization aids skilled performance
3. Check the doctors' prescription and the name of the patient 4. Also, enquire if any drugs were given before the arrival of homecare team	• To prevent the wrong administration • To prevent overdosing and drug interactions.
5. Explain the procedure to the patient	• Alleviates anxiety • Ensures cooperation
<u>Loading the syringe from a vial</u> 6. To facilitate easy withdrawal from a vial, pull back the plunger of the syringe while the needle is capped until the plunger has reached the desired level. This action fills the syringe with the air(33) 7. Inject the air into the vial through the rubber cork. 8. Slowly withdraw the medicine from the vial while holding the vial upside down **<u>Nursing alert</u>** Ensure that the needle is capped while withdrawing air into the syringe Remember to clean the rubber cork of the vial with an alcohol swab.	• Injecting air into the vial alters the pressure gradient and facilitates easy withdrawal of medicine from the vial • To break the chain of cross-infection

<u>Withdrawing medicine from the ampule</u> 9. Breaking the ampule: Check for the bands at the neck of the ampule. If the band is present the ampule is already scored and ready to break. If there are no bands the ampule needs to be scored with a file before breaking.	• If the ampule is not scored, breaking becomes difficult and the ampule may shatter during the process.
10. Ensure that the medicine is collected in the lower compartment of the ampule and not in the neck of the ampule. If the medicine is collected at the neck of the ampule gently tap the neck to facilitate the medicine to flow into the lower compartment.	• This prevents wastage of medicines while breaking the neck of the ampule
11. Cover the neck with a tissue paper or a gauze piece. 12. Hold the ampule straight with both hands with one hand on the neck and other and holding the lower compartment with the thumbs facing each other. 13. Snap the neck of the ampule with gentle and even pressure.	• This prevents injury to the hands while breaking the neck of the ampule.
<u>Nursing alert</u> Do not use the medicine if you shatter the ampule while breaking it	• When the ampule is shattered the medicine is no longer sterile

14. Discard the neck of the ampule in the sharp disposable container. 15. Withdraw the medicine from the ampule while holding the ampule at a 45-degree angle in one hand and the syringe with the needle on the other hand. Remember the hold the ampule and the syringe at the eye level.	• Prevents injury during the waste disposal process. • To ensure accuracy.
16. Close the door and use a screen.	• To provide privacy
17. Assist the patient in assuming a comfortable position. 18. Select the appropriate site for the administration using anatomical landmarks **Nursing alert** Ensure that the area is not tender and is free of lumps or nodules.	• Comfort reduces pain perception • Giving injection at the right anatomical landmark and reduce the risk of nerve injury • The presence of nodules or lumps may be an indication of recurrent injection at the same site where the absorption may not be adequate and can cause severe pain.
Administration of injection: **Nursing alert** Remember to change the needle that was used to withdraw the medicine 19. Clean the injection site with an alcohol swab in a circular motion. Starting from the injection site and moving away in a circular motion for about 5 CMs. 20. Leave the area to dry	• The needle becomes blunt during the process of withdrawal of medicine and can more pain if used again for injecting the patient. • Circular motion away from the injection site removes the pathogens and contaminants away from the injection site • Alcohol provides complete disinfection only after it has completely dried.

21. Hold an alcohol swab in the non-dominant hand between the fingers.	• To apply gentle pressure after administering the injection
22. Using the index finger and the thumb of the non-dominant hand remove the cap straight off the needle	• Pulling the cap straight off the needle reduces the risk of needle stick injury and unscrewing of the needle from the syringe.
23. At the injection site spread the skin using the index finger and the thumb of the non-dominant hand	• Helps in holding the skin taut and reduces the pain while pricking through the skin.
24. Hold the syringe like a pencil on the dominant hand.	• Provides good grip
25. Insert the needle quickly through the taut skin at 90-degree angle	• Quick insertion is less painful and inserting the needle at a 90-degree angle ensures that the needle reaches them muscle.
26. With the index finger and the thumb of the non-dominant hand support the hub of the needle by holding it steady	• Provides additional support while pushing the medication.
27. Withdraw the plunger gently and observe for blood in the syringe. If blood is aspirated into the syringe withdraw the needle quickly discard the syringe, needle and the medication and prepare for new administration at a different site. 28. If no blood appears in the syringe on withdrawal gently administer the medication by pushing the plunger at the rate of 1mL/10 seconds. (31)	• Blood withdrawn into the syringe indicates that the needle is inside a blood vessel. • Blood contaminated medicine should not be used again as it interferes with absorption. • Slow and steady administration minimises pain experienced while pushing the medication into the muscle.
29. Remove the needle quickly at the same angle of insertion and cover the site quickly with the alcohol swab	• Removing quickly at the same angle minimises pain.

30. Gently massage the site unless contraindicated.	• Massaging can aid in absorption but vigorous massaging can cause pain and irritation.
<u>Discarding the syringe and the needle:</u> 31. Do not recap the needle 32. Discard the needle in a puncture-proof disposable container and the syringe in an appropriate container.	• Most needle stick injury occurs during the capping of the needle.
33. Assist the patient to assume a comfortable position and observe for any adverse reaction	• Observing for adverse reaction helps in early identification and prompt management.
34. Remove your gloves and perform hand hygiene	• To break the chain of cross-infection
35. Wash your hands	• To break the chain of cross-infection
<u>Document the following:</u> 1. Name of the medication 2. The dose of the medication 3. Route of administration 4. Date and time of administration	• Documentation ensures continuity of care

Administering an Intra-venous Injection

Definition:

Intravenous (IV) injection administration is a process of injecting the medication directly into the vein. IV injection is rapidly dispersed into the systemic circulation.

Purpose:

- Management of symptoms

Equipment required:

1. Sterile syringe (1)
2. Sterile needle in appropriate size: commonly used 20 G needle (2)
3. Spirit swabs
4. Puncture-proof disposable container (1)
5. Ampoule cutter if available (1)
6. Steel Tray (1)
7. Disposable gloves (1)

Procedure:

Action	Rationale
1. Wash your hands	• Breaks the chain of cross-infection
2. Assemble equipment required for the procedure.	• Organization aids skilled performance
3. Check the doctors' prescription and the name of the patient. 4. Also, enquire if any drugs were given before the arrival of homecare team	• To prevent the wrong administration • To prevent overdosing and drug interactions.
5. Explain the procedure to the patient	• Alleviates anxiety • Ensures cooperation

Loading the syringe from a vial 6. To facilitate easy withdrawal from a vial, pull back the plunger of the syringe while the needle is capped until the plunger has reached the desired level. This action fills the syringe with the air 7. Inject the air into the vial through the rubber cork. 8. Slowly withdraw the medicine from the vial while holding the vial upside down **9. <u>Nursing alert</u>** 10. Remember to clean the rubber cork of the vial with an alcohol swab.	• Injecting air into the vial alters the pressure gradient and facilitates easy withdrawal of medicine from the vial • To break the chain of cross-infection
Withdrawing medicine from the ampule 11. Breaking the ampule: Check for the bands at the neck of the ampule. If the band is present the ampule is already scored and ready to break. If there are no bands the ampule needs to be scored with a file before breaking.	• If the ampule is not scored, breaking becomes difficult and the ampule may shatter during the process. • This prevents wastage of medicines while breaking the neck of the ampule
12. Ensure that the medicine is collected in the lower compartment of the ampule and not in the neck of the ampule. If the medicine is collected at the neck of the ampule gently tap the neck to facilitate the medicine to flow into the lower compartment. 13. Cover the neck with a tissue paper or a gauze piece. 14. Hold the ampule straight with both hands with one hand on the neck and other and holding the lower compartment with the thumbs facing each other. 15. Snap the neck of the ampule with gentle and even pressure.	• This prevents injury to the hands while breaking the neck of the ampule.

Nursing alert 16. Do not use the medicine if you shatter the ampule while breaking it 17. Discard the neck of the ampule in the sharp disposable container. 18. Withdraw the medicine from the ampule while holding the ampule at a 45-degree angle in one hand and the syringe with the needle on the other hand. Remember the hold the ampule and the syringe at the eye level.	• When the ampule is shattered the medicine is no longer sterile • Prevents injury during the waste disposal process. • To ensure accuracy.
19. Change the needle of the syringe after loading the medication	• The needle becomes blunt during the process of withdrawal of medicine and can more pain if used again for injecting the patient.
20. Close the door or use a screen.	• To provide for privacy
21. Collect all the required articles (Syringe loaded with injection and needle, tourniquet, alcohol swab) and wear a disposable glove.	• Organization of equipment aids skilled performance
22. Assist the patient in assuming a comfortable position. The supine position is ideal for IV injection	• The patient can lie down comfortably in a supine position and the veins can also be easily assessed in a supine position
Identifying a suitable vein: 23. Tie the tourniquet above the elbow joint and advice the patient to hold a tight fist. 24. Palpate of veins	• Applying the tourniquet blocks the venous return thereby distending the veins • Holding a tight fist contracts the muscles of forearm which in turn pumps the blood into the veins

If a vein cannot be felt and seen, do the following: 1. Use torch light for better visibility (If the vein is not clearly identified, then) 2. Tap the vein gently (If the vein is not clearly identified, then) 3. Release the tourniquet and have the patient lower the arm below the level of the heart and reapply tourniquet above the intended vein to help distend it. (If the vein is not clearly identified, then) 4. Remove tourniquet and then place a warmed-moist compress over the vein for 10-15minutes.	• All these actions cause the veins to distend making them more prominent.
25. Put on gloves.	• The chances of contact with the body fluid are more while administering IV injection.
26. Clean the area with an alcohol swab in a circular motion from inside to outside 27. Leave it to dry	• Cleaning in a circular motion from inside to outside move the contaminants away from the injection site • Disinfection is complete only after the alcohol has dried out
28. Hold an alcohol swab in the non-dominant hand between the fingers	• To provide compression after administration
29. Pick up the syringe loaded with medicine with the dominant hand, remove the cap straight off the needle with the non-dominant hand	• Pulling the needle straight off the shaft of the needle reduces the risk of needlestick injuries.

30. With the non-dominant hand pull the skin around the vein vertically or horizontally 31. Gently insert the needle at 30° angle(33) through the skin along the long axis of the vein with the bevel of the needle facing upwards. As the needle is advanced into the vein one can feel the lack of resistance. At this point withdraw the plunger and ensure the backflow of the blood. 32. If there is a backflow of blood on withdrawal gently push the medication into the vein. The rate at which the medication should be pushed depends on the type of medication. (If there is no backflow of blood on withdrawal, the remove the needle and locate the same vein properly and repeat the procedure or try another location)	• To make the skin stiff and taut so the vein does not slip away while pricking • When blood is withdrawn into the syringe the needle confirmed to be inside the vein.
33. Quickly withdraw the needle along the direction of insertion and cover the puncture site with the alcohol swab. 34. Compress the site for 10 minutes	• Pulling the needle along the direction of insertion prevents additional pain and injury. • Covering the puncture site with an alcohol swab prevents bleeding.
<u>Discarding the syringe and the needle:</u> 35. Do not recap the needle 36. Discard the needle in a puncture-proof disposable container and the syringe in an appropriate container.	• Most needle stick injury occurs during the recapping of the needle.
37. Assist the patient to assume a comfortable position and observe for any adverse reaction	• Observing for adverse reaction helps in early identification and prompt management.
38. Remove your gloves and perform hand hygiene	• To break the chain of cross-infection
<u>Document the following:</u> 1. Name of the medication 2. The dose of the medication 3. Route of administration 4. Date and time of administration	• Documentation ensures continuity of care

Administering subcutaneous injection

Definition:

Process of injecting the medication into the fatty subcutaneous layer.

Purpose:

- To facilitate slow and sustained absorption thereby resulting in sustained action of the medication

Equipment required: (33)

1. Sterile syringe 2mL or 1mL (1)
2. Sterile needle in appropriate size: for injection 25 G needle (1), 20 or 21 G (1) for withdrawal
3. Spirit swabs
4. Puncture-proof disposable container (1)
5. Ampoule cutter if available (1)
6. Steel Tray (1)
7. Disposable gloves (1)

Sites for giving a subcutaneous injection

1. The outer area of the upper arm.
2. In the abdomen, above the waistline and below the rib margin except on umbilicus and an inch around the umbilicus. The absorption is faster in this site than other sites
3. Midway between the hip and the thigh, slightly towards the lateral side. The absorption is slower than the upper arm

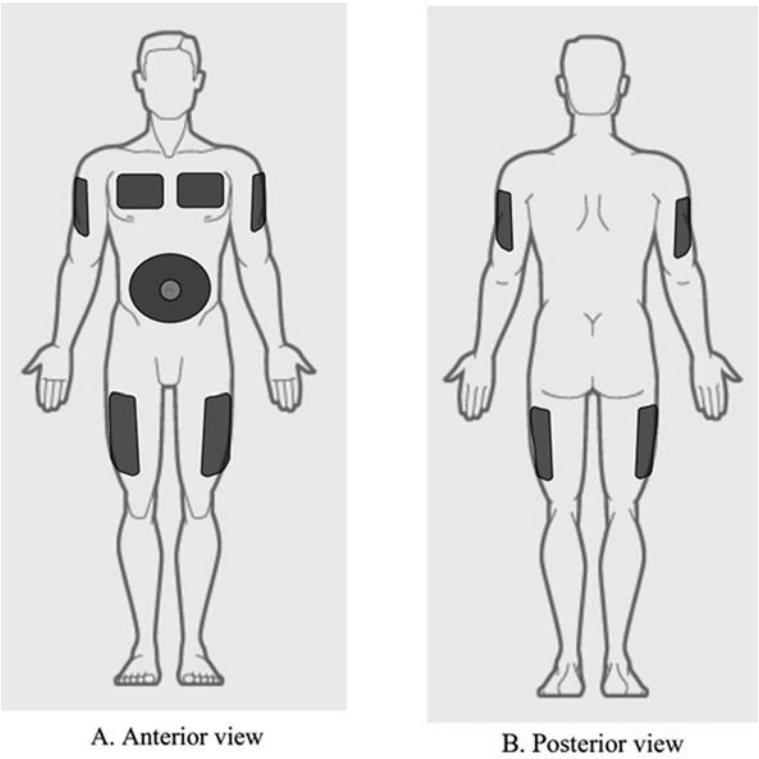


Figure 27: Subcutaneous injection sites

Drugs to be avoided in subcutaneous injections:

1. Promethazine
2. Chlorpromazine
3. Potassium chloride
4. Calcium gluconate
5. Phenytoin

Procedure:

Action	Rationale
1. Wash your hands	• Breaks the chain of cross-infection
2. Assemble equipment required for the procedure.	• Organization aids skilled performance
3. Check the doctors' prescription and the name of the patient 4. Also, enquire if any drugs were given before the arrival of homecare team	• To prevent the wrong administration • To prevent overdosing and drug interactions
5. Explain the procedure to the patient	• Alleviates anxiety • Ensures cooperation
6. <u>Loading the syringe from a vial</u> 7. To facilitate easy withdrawal from a vial, pull back the plunger of the syringe while the needle is capped until the plunger has reached the desired level. This action fills the syringe with the air 8. Inject the air into the vial through the rubber cork. 9. Slowly withdraw the medicine from the vial while holding the vial upside down **<u>Nursing alert</u>** 10. Remember to clean the rubber cork of the vial with an alcohol swab	• Injecting air into the vial alters the pressure gradient and facilitates easy withdrawal of medicine from the vial • To break the chain of cross-infection

11. <u>Withdrawing medicine from the ampule</u>	
12. Breaking the ampule: Check for the bands at the neck of the ampule. If the band is present the ampule is already scored and ready to break. If there are no bands the ampule needs to be scored with a file before breaking.	• If the ampule is not scored, breaking becomes difficult and the ampule may shatter during the process.
13. Ensure that the medicine is collected in the lower compartment of the ampule and not in the neck of the ampule. If the medicine is collected at the neck of the ampule gently tap the neck to facilitate the medicine to flow into the lower compartment.	• This prevents wastage of medicines while breaking the neck of the ampule
14. Cover the neck with a tissue paper or a gauze piece.	• This prevents injury to the hands while breaking the neck of the ampule.
15. Hold the ampule straight with both hands with one hand on the neck and other and holding the lower compartment with the thumbs facing each other.	
16. Snap the neck of the ampule with gentle and even pressure.	
<u>Nursing alert</u>	
17. Do not use the medicine if you shatter the ampule while breaking it	• When the ampule is shattered the medicine is no longer sterile
18. Discard the neck of the ampule in the sharp disposable container.	• Prevents injury during the waste disposal process.
19. Withdraw the medicine from the ampule while holding the ampule at a 45-degree angle in one hand and the syringe with the needle on the other hand. Remember the hold the ampule and the syringe at the eye level.	• To ensure accuracy.

20. Change the needle of the syringe after loading the medication	• The needle becomes blunt during the process of withdrawal of medicine and can more pain if used again for injecting the patient.
21. Close the door or use a screen.	• To provide for privacy
22. Collect all the required articles (Syringe loaded with medication and needle, alcohol swab)	• Organization of equipment aids skilled performance
23. Assist the patient in assuming a comfortable position. A sitting position may be ideal.	• If the patient can assume sitting position all three sites (Upper outer arm, abdomen and thighs) can be accessed
24. Put on gloves.	• The chances of contact with the body fluid are more while administering parenteral injections.
25. Clean the area with an alcohol swab in a circular motion from inside to outside 26. Leave it to dry	• Cleaning in a circular motion from inside to outside move the contaminants away from the injection site • Disinfection is complete only after the alcohol has dried out
27. Hold an alcohol swab in the non-dominant hand between the fingers	• To provide compression after administration
28. Pick up the syringe loaded with medicine with the dominant hand, remove the cap straight off the needle with the non-dominant hand.	• Pulling the needle straight off the shaft of the needle reduces the risk of needlestick injuries.

29. Hold the syringe with the dominant hand like a pencil and with the non-dominant hand pinch and hold the skin at the identified site. 30. Insert the needle at a 20 to 30-degree angle quickly. (33) Pre-loaded insulin needles that are 4 to 6mm in length should be inserted at a 90-degree angle. 31. Withdraw the plunger gently and observe for blood in the syringe. If blood is aspirated into the syringe withdraw the needle quickly discard the syringe, needle and the medication and prepare for new administration at a different site	• Pinching and hold the skin makes the skin taut thereby making the pricking easier. • Quick insertion produces less pain than slow insertion • Blood withdrawn into the syringe indicates that the needle is inside a blood vessel. • Blood contaminated medicine should not be used again as it interferes with absorption.
32. If no blood appears in the syringe on withdrawal gently administer the medication by pushing the plunger at the rate of 30 seconds to 2 minutes. (33)	• Slow and steady administration minimises pain experienced while pushing the medication into the muscle.
33. Remove the needle quickly at the same angle of insertion and cover the site quickly with the alcohol swab	• Removing quickly at the same angle minimises pain.
Nursing Alert 34. Do not massage the site	• Massaging the area will facilitate rapid absorption which is not the intention in the subcutaneous route.
<u>Discarding the syringe and the needle:</u> 35. Do not recap the needle 36. Discard the needle in a puncture-proof disposable container and the syringe in an appropriate container.	• Most needle stick injury occurs during the capping of the needle.
37. Assist the patient to assume a comfortable position and observe for any adverse reaction	• Observing for adverse reaction helps in early identification and prompt management.

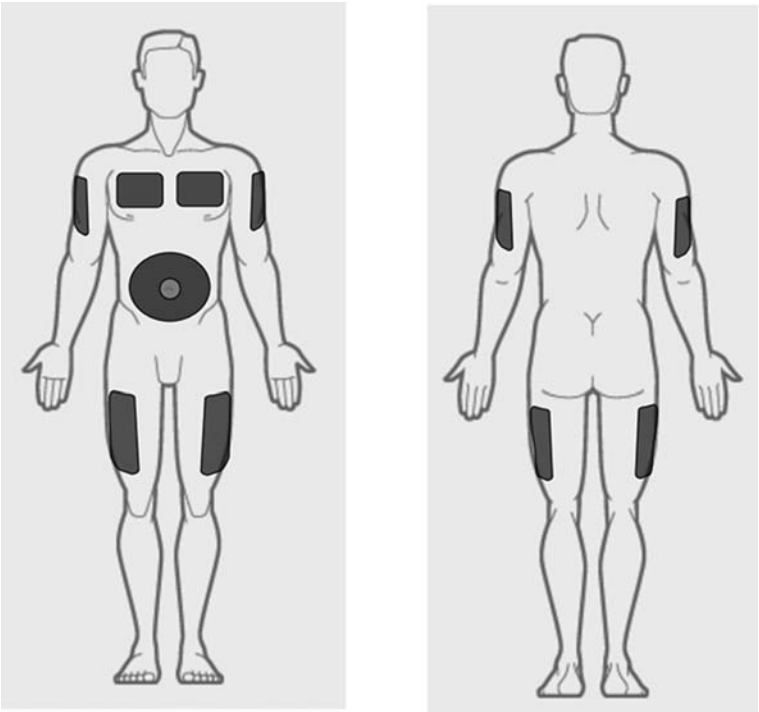
38. Remove your gloves and perform hand hygiene	• To break the chain of cross-infection
<u>Document the following:</u> 1. Name of the medication 2. The dose of the medication 3. Route of administration 4. Date and time of administration	• Documentation ensures continuity of care

Subcutaneous Infusions

Butterfly needle placement for subcutaneous injections and infusions:

Butterfly needles (Scalp vein) are used for intermittent subcutaneous medication administration and continuous subcutaneous infusions (CSCI). They can be placed and managed at homecare setup. Since they are relatively safe and simple to use, the subcutaneous needles can be placed in a homecare set up(34) and the family caregiver can be taught in administering subcutaneous injections.

Site of insertion:



A. Anterior view

B. Posterior view

Figure 28: Sites for subcutaneous infusion

How to select an appropriate site for subcutaneous infusion:(34,35)

- The site should have good depth of subcutaneous fat
- The sites that are easily accessed such as the chest and abdomen are more ideal
- Avoid bony prominence and sites close to the joints
- Rotate the site on a regular basis
- A subcutaneous needle can be in place for a maximum period of 7 days

Contraindicated sites for subcutaneous infusion:

- Sites with lymphedema
- Sites with pitting edema
- Severe bleeding disorder
- Sites with broken skin
- Sites with recent radiation
- Skinfold

Infusion volume and rate(34,35)

- The infusion rate should be 1mL/minute for 24-hour infusion
- Maximum of 1500mL can be administered over 24 hours at one site
- For bolus infusion, 500mL/2 hours three times a day can be given
- If a 24-hour infusion is not possible 1000mL / 8 hours can be given
- If medications are given via subcutaneous catheter,

no more than 2mL should be given at a time followed by 0.5mL of normal saline to flush

- If more than 2mL needs to be administered, use multiple sites.
- If more than one medication is to be given, wait for 20 to 30 minutes before the administration of second medication

To watch out for:

Side effects and adverse events following subcutaneous therapy are rare. Following that the signs to watch out for

- Redness
- Swelling
- Tenderness
- Pain
- Warmth

Equipment required:

1. Scalp vein infusion set (23 Gauge) or 26 G IV cannula
2. Sterile syringe 2mL with saline
3. Alcohol rub
4. Injection tray
5. Kidney tray
6. Disposable gloves
7. Waterproof adhesive tape
8. Subcutaneous medication
9. Subcutaneous infusion solution
10. IV tubing (For infusion)

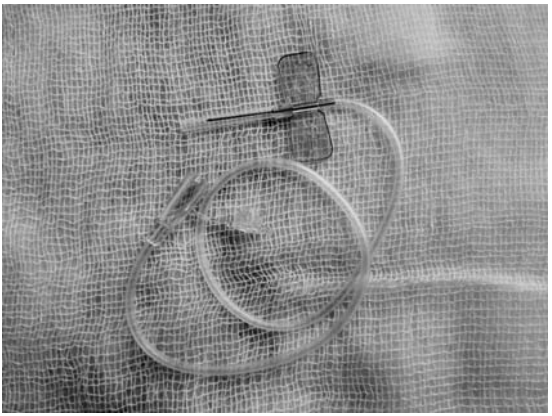


Figure 29: Scalp vein (Butterfly) set used for subcutaneous infusion

Procedure :

Action	Rationale
1. Wash your hands	• Breaks the chain of cross-infection
2. Assemble equipment required for the procedure.	• Organization aids skilled performance
3. Explain the procedure to the patient	• Alleviates anxiety • Ensures cooperation
4. Collect all the required articles (Scalp vein infusion set, Syringe loaded with 0.9% saline, alcohol swab and infusion solution)	• Organization of equipment aids skilled performance
5. Put on gloves.	• The chances of contact with the body fluid are more while administering parenteral injections.
6. Fill the scalp vein infusion set with saline till the point the saline exits through the bevel of the needle. Keep the syringe connected with the scalp vein set.	• To expel air from the set.

7. Assist the patient in assuming a comfortable position. The ideal position depends on the site of catheter placement.	• If the patient can assume sitting position all three sites (Upper outer arm, Chest and Thighs) can be accessed
8. Clean the area with an alcohol swab in a circular motion from inside to outside 9. Leave it to dry	• Cleaning in a circular motion from inside to outside move the contaminants away from the injection site • Disinfection is complete only after the alcohol has dried out
10. Pick up the scalp vein infusion set and hold the needle by the wings with the dominant hand, remove the cap straight off the needle with the non-dominant hand.	• Pulling the needle straight off the shaft of the needle reduces the risk of needlestick injuries.
11. Ensure that the bevel of the needle is facing upwards. 12. Pinch the skin with the non-dominant hand and insert the needle at 20 to 30-degree angle quickly 13. Release the pinch and support the needle against the skin with the non- dominant hand. 14. Withdraw the plunger gently and observe for blood in the tubing. If blood is aspirated into the tubing, withdraw the needle quickly discard the set and prepare for new administration at a different site	• Pinching and hold the skin makes the skin taut thereby making the pricking easier. • Quick insertion produces less pain than slow insertion • Blood withdrawn into the syringe indicates that the needle is inside a blood vessel.
15. If no blood appears in the tubing then secure the needle with waterproof adhesive tape.	• Slow and steady administration minimises pain experienced while pushing the medication into the muscle.
16. Pinch the tubing, remove the syringe and close the cap of the scalp vein infusion set.	• To prevent air entry
17. Secure the tubing close to the skin with an adhesive tape	• To prevent accidental removal

Administering medications	
18. Prepare the medication to be administered.	
19. Only 2mL medication should be administered at a time. If more than one medication needs to be administered choose a different site or wait for 20 to 30 minutes and administer the second medication	• To prevent local skin irritation and inflammation • To decontaminate the area
20. Pinch the tubing and open the cap	• To prevent air entry
21. Clean the cap and the distal end of the subcutaneous catheter with an alcohol rub and let it dry before administering medication through the tubing.	
22. Attach the syringe loaded with medication and gently push the medication for 30 seconds to 2 minutes.	
23. Flush the catheter with 0.5mL saline.	• Flushing ensures that the entire volume of the medication reaches the subcutaneous space for absorption.
24. After the administration of medication pinch the tubing and disconnect the syringe and close the cap	• Prevents air entry
Administering continuous infusion	
25. Ensure that air is expelled from the tubing of the infusion solution	• To prevent air entry • To decontaminate the area
26. Clean the cap and the distal end of the subcutaneous catheter with alcohol rub before administering medication through the tubing.	
27. Pinch the tubing and open the cap and connect the infusion tubing to the subcutaneous line	• To prevent air entry
28. Titrate the infusion to the prescribed rate.	
29. Once the infusion is almost complete, stop the flow and pinch the subcutaneous catheter remove the infusion tubing from the subcutaneous line.	
30. Cap the subcutaneous catheter.	

31. Remove your gloves and perform hand hygiene	• To break the chain of cross-infection
Document the following: 1. Name of the medication/ infusion 2. The dose of the medication or volume of infusion and infusion rate 3. Date and time of administration	• Documentation ensures continuity of care

Instructions for family caregivers following subcutaneous needle placement:

1. Lumping under the skin is normal after the administration of subcutaneous injections. These lumps will disappear within minutes to hours.
2. Swelling after the subcutaneous infusion is normal. This swelling will resolve on its own within a few hours.
3. Drugs that are refrigerated should be warmed to room temperature before administration.
4. Before the administration of subcutaneous injection through the subcutaneous catheter check the area for redness, warmth, swelling and tenderness. If the area is red or warm or swollen or tender do not administer the drug and call the homecare nurse immediately.
5. If the subcutaneous catheter site is covered by a waterproof dressing patient can be given a bath, but care should be taken not to manipulate the catheter too much.
6. If waterproof dressing is not available, protect the area with absorbent pads and waterproof plastic bags while giving bath to the patient. A bed bath is preferred in these situations.

Hypoglycaemia and its management

Definition: Hypoglycaemia is defined as blood sugar lever <70mg/dL (36)

Hypoglycaemia is also defined as, decrease in blood sugar level or its tissue utilization that results in demonstrable signs or symptoms which include an altered mental status and or sympathetic nervous system stimulation.(37) It is very important to keep in mind that the decreased blood sugar level at which the person becomes symptomatic is very variable. But the general understanding is that in non-diabetic individuals the neuro-endocrine mechanism is triggered when the blood sugar levels go below 70mg/dL. But in patients with diabetes this mechanism may be impaired thus they may experience hypoglycaemia even without their awareness. (36)

Classification of hypoglycaemia (36):

Level 1 hypoglycaemia:

It is characterized by blood sugar level below 70mg/dL but above 54mg/dL

Level 2 hypoglycaemia:

It is characterized by a blood sugar level below 54mg/dL. This is clinically significant hypoglycaemia at which neuroglycopenic symptoms begin to occur. Hypoglycaemia should be immediately treated at this stage or the patient may progress into a coma.

Level 3 hypoglycaemia:

It is a severe form of hypoglycaemia and it is characterized by altered mental and/or physical function that required assistance from another person for recovery.

Signs and symptoms of Hypoglycaemia:

The signs and symptoms of hypoglycaemia are broadly classified into autonomic and neuroglycopenic.

Autonomic symptoms:

- Tremors/Trembling
- Anxiety
- Arousal
- Sweating
- Hunger
- Paraesthesia/Tingling
- Palpitations

Neuroglycopenic symptoms:

- Cognitive impairment (difficulty concentrating, confusions)
- Drowsiness
- Weakness
- Visual changes
- Headache
- Dizziness
- Seizure
- Coma

Evaluating hypoglycaemia:

History:

Since the most common cause of hypoglycaemia is iatrogenic(37) history of insulin usage and other oral hypoglycaemic agents should be assessed. In addition to hypoglycaemic agents, the addition of other new drugs should be evaluated.

- Is the patient diabetic? if yes then,
    - Is the patient on insulin or other oral hypoglycaemic agents?
    - When was the last insulin and/or other oral hypoglycaemic agents given?
- When was the last meal? What was the last meal? How much of the last meal was actually consumed?
- Are there any new drugs added to the prescription?
- Renal and hepatic status
- Alcohol Intake
- Are there any infections at present?

Physical examination:

Physical examination is initiated by assessing vital signs. During hypoglycaemia the alterations in vital signs include

- Tachycardia,
- Tachypnoea
- Hypothermia
- Hyper/hypotension

Other features include

- Sweating
- Loss of coordination
- Confusion
- Signs of dehydration with decreased skin turgor
- Fatigue
- Agitation

In severe cases, it can also lead to convulsions and coma.

Laboratory examination:

In a homecare setup, blood glucose testing using a glucose strip in the most ideal test to determine hypoglycaemia. The finding should be correlated with history and physical examination.

Management of hypoglycaemia (36,37):

Management of hypoglycaemia should be started promptly as the brain depends on glucose as the primary source of energy. Delay in correcting hypoglycaemia can result in neurological deficits, seizures, arrhythmias and in rare event death.

Blood sugar 70mg/dL is the cut-off to trigger management response. The plan of management depends on the patient's ability to cooperate.

If the patient is able to eat:

Administer 30gm of oral glucose (2 tablespoons). If glucose is not available, sugar available at home can be given. This should be followed up with a meal or a snack. Some complex carbohydrates that can be given are

- 1 cup fruit juice
- 1 slice bread

- 1 cup milk
- 2 to 3 biscuits

If the patient is unable to eat:

Establish IV access and administer 20mL of 50% dextrose, if not available, then administer 40mL of 25% dextrose. This should be followed up with 5% or 10% dextrose at 100cc/hr until the patient is stable.

Recheck the blood sugar every 30 minutes until the blood sugar is >100mg/dL.

Once the blood sugar has reached 100mg/dL then evaluate for the cause for hypoglycaemia, and modify treatment plan in discussion with the physician.

After both oral and IV glucose management, the patient should be counselled to follow up with a meal or a snack to prevent the recurrence of hypoglycaemia.

CARING FOR PATIENTS' PERSONAL HYGIENE

Mouth care or Oral care

Definition: It is a process of cleansing the oral cavity, tongue teeth and gums

Purpose:

1. To promote hygiene
2. To remove debris
3. To provide refreshment
4. To prevent and infection
5. To prevent and treat dryness and halitosis
6. To promote a sense of well being

Frequency of oral care:

The frequency of oral care depends upon the condition of the patients.

- Healthy individuals require only twice-daily brushing.
- If the patient is bedridden and at low risk of developing oral problems oral care every 4 to 6 hours is sufficient.
- For patients with oral problems, 2 hourly oral care is required.
- Hourly oral care may be required for patients with mouth breathing.

Articles required:

1. Tray containing.
2. Water or saline in a bowl or toothpaste or Chlorhexidine solution/other products
3. Toothbrush or Artery forceps, tongue cleaner
4. Gauze piece if artery forceps is used

5. Kidney tray
6. Disposable container
7. Rubber sheet
8. Chest towel
9. Tongue depressor

Oral cleansing agents:

The choice of an oral care agent is dependent on the aim of care.

Agents	Advantages	Disadvantages
Clean water	Can provide refreshment Readily available Ideal for rinsing the mouth and moistening	Refreshment is short-lasting No bactericidal action
Normal Saline	Can provide refreshment Can be prepared at home setting	Very little bactericidal action Patient may find the taste unpleasant Can cause dryness
Saline with lime	Can provide refreshment Can be prepared at home setting Stimulates salivary secretion	Patient may find the taste unpleasant
Toothpaste	Can provide refreshment that can last longer Effective in removing plaque and debris	Can cause pain if oral ulcers are present Can cause dryness if not rinsed adequately
Sodium Bicarbonate solution	Raises Oral pH inhibiting bacterial growth(38) Loosens debris and Thick mucus	Nil
Chlorhexidine Solution	Effective bactericidal action Most effective in removing the plaque and debris(16)	Can cause a severe burning sensation if oral ulcers are present Costly
Metronidazole solution	Has very good antimicrobial action, especially against anaerobes	The solution is extremely bitter

To be considered before starting oral care:

If the patient has painful oral ulcers, analgesics should be administered before performing oral care

Oral care for Self-dependent patients

Action	Rationale
1. Explain to the patient the importance of oral care	• To ensure adherence to oral care
2. Assemble all the articles near the patient (Toothpaste, Toothbrush, Water in a jar, Small rubber sheet, Kidney tray) Note: If the patient cannot use toothpaste and toothbrush other cleansing agents can be used.	• Proper organization of items aids in skilled performance
3. Assist the patient in sitting upright	• Sitting upright while performing oral care reduces the risk of aspiration
4. Place the rubber sheet below the patients' chin covering the neck and the chest and place a small towel on top of the rubber sheet	• To prevent soiling of patients' cloths
5. Provide water for the patient and advice the patient to rinse the mouth once. Collect the effluent in the kidney tray	• To wash and hydrate the oral cavity before brushing
6. Collect the toothpaste in toothbrush and hand it over to the patient. 7. Teach the patient to brush in a vertical fashion (Up and down) and not side to side	• Brushing in horizontal fashion removes the debris from the interdental spaces.

8. Advice the patient to brush the anterior aspect of the teeth, posterior aspect of the teeth and the superior aspect of the teeth. 9. Collect the effluent in the kidney tray	• Removes debris and plaque from all sides
10. Hand the patient the tongue cleaner and teach him to clean from inside to outside. 11. After cleaning collect the spit in the kidney tray Note: Advise the patient to be gentle while cleaning the tongue.	• Helps removal of debris from the tongue • To prevent injury to the tongue
12. Provide water to the patient and advice the patient to rinse thoroughly.	• Inadequate rinsing after brushing can cause dryness of mouth
13. Wash your hands	• To break the chain of cross-infection
14. Document the assessment findings and the procedure.	• Ensures continuity of care
15. Report abnormal findings to the physician	• To ensure that the patient receives the right treatment
16. Encourage the patient to perform oral care two to four times a day(24)	• To promote adherence to care

Oral care for dependent patients

Action	Rationale
1. Explain to the patient and the family caregivers the importance of oral care and the procedure	• To ensure adherence to oral care • To alleviate anxiety associated with the procedure
2. Assemble all the articles near the patient (Artery forceps, Gauze piece, Water in a cup, Chlorhexidine solution/other product in a cup Small rubber sheet, Kidney tray) 3. Wear gloves	• Proper organization of items aids in skilled performance • To prevent contact with the body fluids
4. Assist the patient in sitting upright or in a lateral position. 5. In unconscious patients perform the procedure in the lateral position **Nursing alert:** **Oral care should not be performed in the supine position**	• Sitting upright or assuming a lateral position while performing oral care reduces the risk of aspiration • Fluids can easily get aspirated in supine position especially in unconscious patients
6. If the patient is in sitting position place the rubber sheet below the patients' chin covering the neck and the chest and place a small towel on top of the rubber sheet 7. If the patient is in a lateral position place the rubber sheet and the towel under the cheek of the patient.	• To prevent soiling of patients' clothes and bedsheets

8. Soak the gauze piece in water and clamp it in artery forceps **Nursing alert: Ensure that the gauze is securely held by the forceps to prevent slippage while performing the procedure** **Nursing alert: Never put fingers into the oral cavity of unconscious patients as unconscious patients may have biting tendencies.** 9. Using the wet gauze and artery forceps gently wipe the oral cavity	• To wash and hydrate the oral cavity
10. Similarly wet the gauze in chlorhexidine solution can clean the teeth in the direction of gum to the crown.	• Cleaning from gum to the crown removes the debris in the gums and interdental spaces.
11. Clean all the sides the anterior aspect of the teeth, posterior aspect of the teeth and the superior aspect of the teeth including the gums. 12. Change the gauze when soiled	• Removes debris and plaque from all sides
13. Using a new gauze soaked in chlorhexidine solution clean the tongue from inside to outside. Note: Use tongue depressor if required and be gentle while cleaning the tongue.	• Helps removal of debris from the tongue • To prevent injury to the tongue
14. After cleaning with chlorhexidine solution clean the oral cavity once again with gauze soaked in water.	• To reduce irritation and burning sensation

15. Soiled gauze should be discarded in a disposable container	• To practice segregation at the site of generation
16. Remove the gloves and wash your hands	• To break the chain of cross-infection
17. Document the assessment findings and the procedure.	• Ensures continuity of care
18. Report abnormal findings to the physician	• To ensure that the patient receives the right treatment
19. Encourage the family caregivers to perform oral care regularly	• To promote adherence to care

Care of dentures (39,40)

- Dentures should not be worn continuously over-night. Wearing dentures continuously overnight can cause denture stomatitis.
- When the dentures are not worn, they should be placed in water so that they retain their shape.
- Like brushing the natural teeth dentures should be cleaned daily by soaking and brushing with non-abrasive denture cleanser.
- After cleaning the denture with denture cleanser, it should be thoroughly rinsed before applying it.
- When dentures are not cleaned daily, it can be colonized by biofilm-producing bacteria and fungi which results in recurrent oral problems.
- Dentures should not be placed in hot water.
- Carefully examine the dentures for cracks or sharp edges while cleaning

- Denture adhesives can improve stability and retention when used appropriately. Consultation with the dentist is required, when adhesives are required in large amounts to retain the denture.
- If the patient is unconscious, dentures should be removed and stored in a labelled container containing water.
- If a patient is using dentures, an annual review with a dentist is recommended.

Bed Bath

Definition: Process of washing the body of a patient who is confined to bed.

Purpose:

1. To clean the skin and promote hygiene
2. To prevent infection
3. To promote circulation
4. To make the patient refreshed and relaxed

Articles required:

1. Basins 2 (One for soap water, one to wash)
2. Lukewarm water
3. Soap
4. Rubber sheet (Large) and Towel (Large)
5. Covering sheet
6. Bath towel 2 (One for the front, one for the back)
7. Washcloth (4)

8. Gloves
9. Apron
10. Moisturizing lotion
11. Comb

Procedure:

Action	Rationale
1. Check the general condition of the patient	• Bed bath is better avoided in patients who are very sick
2. Explain the procedure to the patient and the family caregiver and encourage them to continue them	• To alleviate anxiety associated with the procedure and foster cooperation • To empower the family caregiver and ensure adherence
3. Assemble all the articles required to the patient's bedside (2 basins with warm water, washcloths, soap, towel, covering sheet and rubber sheet)	• Proper organization of items aids in skilled performance
4. Close the door or use screen	• To provide privacy
5. Ensure that the water is lukewarm	• To prevent injury
6. Wash your hands, wear gloves and apron	• To practice barrier nursing
7. Turn the patient to the side and spread one half the rubber sheet with a towel over it. Turn the patient to the other side and spread the other half of the rubber sheet along with the towel.	• To prevent soiling of bed and sheets • The towel is placed over the rubber sheet to absorb the moisture and to reduce the discomfort caused by the rubber sheet
8. Cover the patient with a sheet and remove the cloths of the patient	• To maintain privacy and to provide warmth

Start from the face: 9. Wet the washcloth and clean the patients' eye from the inner canthus to the outer canthus. Use a second cloth for the other eye. 10. Wet the entire face again and apply soap gently. 11. Wet a different washcloth from the second basin and remove the soap. 12. Dry the face with a towel	• When cleaned from outer canthus to inner canthus the dirt gets pushed into the eyes hence the eyes should always be cleaned from inner to the outer canthus.
Washing upper limb 13. Expose the arm up to the axilla. Start with the arm further away from the nurses' side and wet the arm with the washcloth. (Starting from hand then forearm then axilla) 14. Apply soap in a similar fashion (Give special attention to the web spaces) 15. Remove the soap using a wet washcloth from the second basin in a similar direction 16. Dry the arm with the towel 17. Cover this exposed arm and repeat the procedure similarly on the other arm.	• The direction of cleaning is from the more clean area towards the less clean area

Washing Chest and abdomen 18. Expose the chest and abdomen 19. Wet the chest and the abdomen up to symphysis pubis with a washcloth 20. Apply soap and give attention to the umbilicus 21. Remove the soap using a wet washcloth from the second basin 22. Be sure to remove the soap from the umbilicus 23. Dry the chest and the abdomen with the towel 24. Cover the chest and the abdomen with the covering sheet	• Dirt usually gets collected inside the umbilicus and often ignored.
Washing lower extremity 25. Uncover the leg farther from the nurse 26. Wet the leg with the washcloth from thigh, knee and foot. 27. Apply soap (Give special attention to between the toes) and remove the soap with the washcloth from the second basin. 28. Dry the leg and cover it 29. Repeat the same for the other leg	• Dirt usually gets collected between the web spaces

Washing the groin and the perineum Females: 30. Place the legs in a lithotomy position 31. With the covering sheet cover up to the knees 32. Wet the groins then the outer perineum followed by labia and the skin folds 33. The direction of cleaning should be from the pubic bone towards the anus 34. Apply soap in a similar fashion and remove the soap with a wet washcloth 35. Dry with towel	• The lithotomy position is an ideal position to assess the female perineum
Males: 36. Expose only the perineum 37. Wet the groins and the scrotum 38. Apply soap and then wash the groins and the scrotum 39. Dry with towel 40. Place a wash towel on the scrotum and place the shaft of the penis on the surface of the towel 41. Hold the penis upright and retract the foreskin 42. Clean the glans penis from the tip of the urethral orifice towards the shaft of the penis in a circular motion with a wet gauze 43. Use only one gauze for each circular movement and discard each time 44. Unretract the penis 45. Apply soap on the shaft of the penis 46. Remove the soap using a wet washcloth 47. Dry the penis 48. Remove the washcloth placed on the scrotum	• To protect an already washed area from contamination • Following this direction moves the dirt away from the urethral orifice.

49. Change the water Washing the back and buttock: 50. Turn the patient to the lateral side 51. Expose the back and the buttock 52. Wet the back starting from the back of the neck then back to the buttock, creases and finally anus. 53. Apply soap in similar fashion 54. Remember to spread the crease and clean the anus in a circular motion	• By this time the water will be dirty and cold from washing the anterior aspect. • Spreading the crease helps to visualize the anus and circular motion ensures effective removal of dirt
55. Remove the soap using wet washcloth from the neck, back, buttock, crease and finally anus 56. Dry in similar fashion 57. Apply moisturizers on the back 58. Remove the rubber sheet and the towel over it by turning the patient from one side to another 59. Finally, position the patient supine 60. Apply moisturizers on hands and legs 61. Clothe the patient 62. Change the covering sheet	• Moisturizers prevent drying of the skin
63. Remove the gloves and apron. Wash your hands.	• To break the chain of cross-infection
64. Encourage the carers to provide bed bath regularly	• Ensures adherence to care
65. Document the procedure	• Ensures continuity of care

Back Care

Definition:

It is a process of cleaning and massaging the back while giving special attention to areas that are susceptible to pressure sores.

Purpose:

1. To prevent pressure sores
2. To improve circulation
3. To promote comfort
4. To aid in refreshing and relaxing

Equipment required:

1. Two basins with warm water
2. Hand towel (Small) 3 to 4 and Dry towel
3. Rubber sheet
4. Large towel
5. Soap
6. Moisturizer
7. Gloves
8. Apron

Procedure:

Action	Rationale
1. Check the general condition of the patient	• Backcare is better avoided in patients who are very sick
2. Explain the procedure to the patient and the family caregiver and encourage them to continue the practice	• To alleviate anxiety associated with the procedure and foster cooperation • To train the family caregiver and ensure adherence
3. Assemble all the articles required to the patient's bedside (2 basins with warm water, hand towels, soap, dry towel, rubber sheet and large towel)	• Proper organization of items aids in skilled performance
4. Close the door or use screen	• To provide privacy
5. Wash your hand and wear gloves	• To practice barrier nursing
6. Ensure that the water is lukewarm	• To prevent injury
7. Wear gloves	• To practice barrier nursing
8. Turn the patient to the side and spread one half the rubber sheet with a towel over it. Turn the patient to the other side and spread the other half of the rubber sheet along with the towel.	• To prevent soiling of bed and sheets • The towel is placed over the rubber sheet to absorb the moisture and to reduce the discomfort caused by the rubber sheet

9. Expose the back and the buttock 10. Examine the back especially the pressure points. 11. Wet the back starting from the back of the neck then back and then the buttock. 12. Apply soap in similar fashion 13. While applying soap follow circular motion from top to bottom	• To identify pressure sores at an early stage • Circular motion massages the muscles are improvers circulation
14. Remove the soap using wet washcloth from the neck, back and buttock 15. Dry in similar fashion 16. Apply moisturizers on the back. While applying moisturizers, massage can be provided as long strokes or circular fashion. (Other massaging techniques such as petrissage and effleurage can be applied) **Nursing alert: Do not massage already injured areas.** 17. Remove the rubber sheet and the towel over 18. Cover the back 19. Finally, position the patient supine	• Massage can be provided with ease while applying moisturizer. • Massaging the already injured area causes pain and worsens the injury
20. Remove the gloves and apron. Wash your hands	• To break the chain of cross-infection
21. Encourage the carers to provide bed bath regularly	• Ensures adherence to care
22. Document the procedure	• Ensures continuity of care

Nail care – Caring for fingernails and toenails

Definition:

Process of cleaning and cutting the nails

Purpose:

1. To keep the nails neat and clean
2. To prevent injuries
3. To prevent infection

Equipment required:

1. Nail cutter
2. Large Bowls (2)
3. Soap water (Warm)
4. Wet Cotton balls or gauze piece
5. Gloves
6. Rubber sheet
7. Small towel (2)
8. Kidney tray
9. Small brush (If required)

Procedure:

Action	Rationale
1. Explain the procedure to the patient and the family care-giver and encourage them to continue the practice	• To alleviate anxiety associated with the procedure and foster co-operation • To empower the family caregiver and ensure adherence

2. Assemble all the articles required to the patient's bedside (2 large bowls with soap water, hand towels, rubber sheet, gauze piece and nail cutter)	• Proper organization of items aids in skilled performance
3. Close the door or use screen	• To provide privacy
4. Assist the patient in assuming a comfortable position. Can be done in a sitting position if the patient can sit or supine position if the patient cannot sit.	
5. Wash your hand and wear gloves	• To practice barrier nursing
6. Place a rubber sheet and a towel under the patients' hands	• To prevent soiling the bedsheet and the cloths
7. Soak the patient's fingers in warm soap water for 5 minutes 8. Brushing the nails may be required if there is excess dirt	• To remove the dirt and make the nails more pliable. • To remove the dirt before cutting
9. Rinse the soap from the fingers	• Soap can make the fingers slippery while cutting
10. Cut only the free edges of the nails one finger at a time. Remember to cut the nail across and not deep into the curved edges. 11. Collect the cut nails in the kidney tray	• Cutting deep into the curved edges can cause injury, bleeding and infection.
12. Wipe the cut edges with wet cotton, use one cotton ball for each finger.	• To remove the debris • Using one cotton ball for each finger ensures that the infection if any is not transmitted from one nail to another

13. A similar procedure can be followed for cutting toenails. If the toenails cannot be soaked in a large bowl, gauze pieces dipped in soap water can be covered on the toe nails to soak them.	
14. Wash your hands	• To break the chain of cross-infection
15. Encourage the carers to provide nail care regularly	• Ensures adherence to care
16. Document the procedure	• Ensures continuity of care

Perineal Care

Definition:

Process of cleansing the genital area

Purpose:

1. To maintain perineal hygiene
2. To prevent and treat infection

Articles required:

1. Two basins with warm water
2. Hand towel (Small) 3 to 4 and Dry towel
3. Rubber sheet
4. Large towel
5. Covering sheet
6. Soap
7. Gauze piece
8. Saline

9. Gloves
10. Apron
11. Kidney tray
12. Scissors

Procedure:

Action	Rationale
1. Explain the procedure to the patient and the family caregiver and encourage them to continue them	• To alleviate anxiety associated with the procedure and foster co-operation • To empower the family caregiver and ensure adherence
2. Assemble all the articles required to the patient's bedside (2 basins with warm water, washcloths, soap, towel, covering sheet and rubber sheet)	• Proper organization of items aids in skilled performance
3. Close the door or use screen	• To provide privacy
4. Ensure that the water is lukewarm	• To prevent injury
5. Wash hands and wear gloves	• To practice barrier nursing

Females: 6. Place the legs in a lithotomy position 7. Expose only the perineum 8. With the Sheet cover up to the knees 9. Place a rubber sheet and a towel under the patients' hip 10. Wet the groins then the outer perineum followed by labia and the skin folds 11. The direction of cleaning should be from the pubic bone towards the anus 12. Apply soap in a similar fashion and remove the soap with a wet washcloth 13. Dry with towel 14. Wet the gauze with saline 15. Separate the labia 16. With the saline gauze clean from clitoris towards perineal raphe. Use one gauze for each stroke. Start with laterally both sides then medially. 17. Then use another gauze to clean from the urethral meatus downward vertically towards the perineal raphe 18. Discard the soiled gauze in a kidney tray 19. Remove the rubber sheet and the towel from under the patients' hip 20. Cover the perineum	• The lithotomy is an ideal position to assess the female perineum • To prevent soiling of sheets

Males: 21. Expose the only the perineum 22. Place a rubber sheet and a towel under the patients' hip 23. Wet the groins, scrotum and the penis 24. Apply soap and then wash the groins, scrotum and the penis 25. Dry with towel 26. Place a wash towel on the scrotum and place the shaft of the penis on the surface of the towel 27. Hold the penis upright and retract the foreskin 28. Clean the glans penis from the tip of the urethral orifice towards the shaft of the penis in a circular motion with a saline gauze 29. Use only one gauze for each circular movement and discard each time 30. Unretract the penis 31. Apply soap on the shaft of the penis 32. Remove the soap using a wet washcloth 33. Dry the penis 34. Remove the washcloth placed on the scrotum	• To prevent soiling of sheets • To protect an already washed area from contamination • Following this direction moves the dirt away from the urethral orifice.

Catheter care: 35. After cleaning the perineum change the glove. 36. Soak the gauze in saline or Soap and water 37. Clean the catheter by placing the saline gauze around the circumference of the catheter and gently clean from proximal (Urethral meatus) to distal (Bifurcation of the catheter). Use one gauze for each stroke. 38. Discard the gauze in the kidney tray 39. Anchor the catheter to the thigh with an adhesive tape. Ensure that there is no traction in the catheter between the adhesive tape and the point where the catheter enters the body.	• Proximal to distal direction removes the contaminants away from the urethral meatus • To reduce traction and to secure the catheter
40. After the perineal care and catheter care cover the perineum	
41. Remove gloves and apron. Wash your hands	• To break the chain of cross-infection
42. Encourage the carers to provide Perineal care and catheter care regularly	• Ensures adherence to care
43. Document the procedure	• Ensures continuity of care

CARE OF NASOGASTRIC TUBE

Nasogastric Tube insertion

Definition:

Process of introducing nasogastric tube through the nose into the stomach

Purpose:

1. To administer nasogastric feeding
2. To relieve abdominal distention

Articles required:

1. Nasogastric tube of appropriate size
2. Adhesive tape
3. Stethoscope
4. Gloves
5. Water-soluble lubricant gel
6. 10 or 20mL syringe
7. Marker pen

Procedure:

Action	Rationale
1. Explain the procedure to the patient and the family caregivers	• To alleviate anxiety about the procedure and foster cooperation
2. Assemble all the articles required to the patient's bedside (NG tube, Water-soluble lubricant gel, gloves, stethoscope, Syringe, adhesive and marker pen)	• Proper organization of items aids in skilled performance

3. Close the door or use screen	• To provide privacy
4. Assist the patient in sitting upright	• The NG tube insertion should be carried out in an upright position to prevent aspiration.
5. Wash hands and wear gloves	• To practice barrier nursing
<u>Measuring the length to be inserted</u> 6. Place the distal end of the NG tube at the Xiphoid process and extend the tube to the ear and from the ear to the tip of the nose. Mark this point with the marker.	• To determine the appropriate length of the tube to be inserted
7. Lubricate the tip of the tube with water-soluble lubricant get	• To prevent injury and to facilitate easy insertion
8. Explain to the patient that the tube as it passes through the nasopharynx will cause discomfort and the patient need not fear or worry.	• To reduce anxiety associated with the procedure and to aid cooperation
9. Check the patency of the nares and choose the nares that has adequate space to accommodate the tube	• Inserting the tube in the nostril with inadequate space can cause pain and discomfort

10. Insert the tube through one of the nostrils and slowly advance the tube. As the tube reaches the oropharynx the patient may feel like gaging. At this point, advise the patient to swallow continuously and slowly as the tube is slowly being advanced. **Nursing alert: If the patient gets a violent cough remove the tube.** 11. If there is no violent cough gently advance the tube to the point already marked in the tube. <u>Checking the position of the tube</u>: Method 1: (Most ideal) Aspirate the gastric contents with the syringe and check colour and consistency. (Ideally, pH is checked to confirm the position of the tube inside the stomach) Method 2: (Not reliable) Place a stethoscope 8cm below the xiphoid process slightly on the left side, push 5 to 10mL air through the NG tube and auscultate for the gurgling sound. If the sound cannot be heard the tube is not in the stomach, and if there is a slight delay between the push and the sound it could be suggestive of the tube being in the oesophagus. In that case, advance the tube further for 2 to 3 CMs.	• Swallowing closes the epiglottis and moves the tube into the oesophagus. • A violent cough could be a sign that the tube has entered the larynx and trachea. • Reaching the pre-set marking points that the tube has entered the stomach. • Checking the pH is more ideal than auscultation.
12. Secure the tube with the adhesive	• To prevent dislodgement

13. Teach the carers on how to give NG tube feeding	• To empower the carers to care for the patients by themselves
14. Observe and ask the patient if there is any discomfort	• To take prompt action
15. Wash your hands	• To break the chain of cross-infection
16. Document the following a. Date of NG tube insertion b. Size of the tube inserted c. Length inserted	• To ensure continuity of care

Administering Nasogastric Tube Feeding

Definition:

Process of providing a liquid diet through the nasogastric tube to meet the nutritional requirement or therapeutic requirement

Purpose:

1. To feed the patients
2. To administer drugs

Articles required:

1. 50mL syringe
2. Liquid feeds or drugs
3. Drinking water in a cup
4. Rubber sheet and a towel

Procedure:

Action	Rationale
1. Explain the procedure to the patient and the family caregiver and show them how the procedure is done	• To alleviate anxiety associated with the procedure and foster cooperation • To empower the family caregiver and ensure adherence
2. Wash your hands	• To prevent infection
3. Assemble all the articles required to the patient's bedside (50mL syringe, NF feeds, water in a cup)	• Proper organization of items aids in skilled performance
4. Close the door or use screen	• To provide privacy
5. Wear gloves	• To prevent contact with gastric contents
6. Prop up the patient for 30-degree or more	• To reduce the risk of aspiration
7. Pinch the tube, open the cap and attach the syringe to the tube	• Pinching the tube prevents air entry into the tube
8. Aspirate the gastric contents to ensure that the tube is in place and to know the residual volume. If the residual volume is 200mL or more defer the present feeds and consult the physician	• If the pH of the contents is less than 5 then the tube is in the stomach. • If the residual volume is already 200mL giving additional feeds may cause discomfort and aspiration

Administering NG feeds: **Before administering NG feeds the carer should taste the feed and ensure that an adequate amount of salt is added.** **Giving a very small quantity to the patient by placing the feeds on the tongue** 9. Pinch the tube with the non-dominant hand while holding it together with the syringe. 10. Instill 30mL water into the syringe and release the pinch. 11. Let the water flow through the tube into the stomach facilitated by gravity. 12. Pinch the tube before the water completely runs out	• Decreased salt intake can result is hyponatremia • This enables the patient to enjoy the taste and promotes psychological well-being. • To prevent air entry • To flush the tube • To prevent air entry
13. Similarly, fill the syringe with NG feeds and release the pinch 14. Let the feeds flow into the stomach, facilitated by gravity 15. Pinch the tube before the feeds runout. 16. The bolus feeding should never exceed 400mL.(41) 17. The daily requirement of 30mL/kg/day given as 1kcal/mL feeds is equally spaced throughout the day(41). For example, if a patient weighs 60Kgs then his daily requirement is calculated as follows 60X30=1800mL per day. This is divided as 200mL feed every 2 hrs from 6 AM to 10 PM. 18. After the administration of feeds flush the tube with 30mL water 19. Close the cap	• Giving more than 400mL bolus feeds can cause discomfort and aspiration • To prevent clogging

20. The distal end of the tube should be above the level of the abdomen. The tube can be secured to patients' cheek with an adhesive tape.	• When the tube is placed below the level of the stomach it can facilitate siphoning.
21. Keep the patient propped up at 30-degree or more for a minimum 30 minutes after the feeds.(41)	➢ To reduce the risk of aspiration
22. Wash your hands	• To break the chain of cross-infection
23. Ask the carers if they have any doubts and clarify 24. Observe the carer while performing the procedure and provide feedback	➢ To empower the family and to minimise errors in practice
25. Since patients at who are fed through tubes are at the risk of developing oral problems oral care must be given to them every 4 to 6 hours	➢ Salivary secretions are less in patients who are not fed orally. Regular oral care prevents dryness and other oral problems
26. Document the time of the feeding and the amount of fluids given	➢ To ensure the continuity of care

On an average, the nutritional requirement of a bedridden patient without any pressure sore is 1000 Cal/day but in the presence of pressure sore the requirement increases to 1300 to 1500 Cal/day based on body weight. In bedridden patients with mild to moderate illness the daily protein requirement is 0.8 to 1.2 g/kg/day and this requirement increases to 1.2 to 1.5g/kg/day with a critical illness.

Nutritive value table

Food	Amount*	Calorie	Protein
Cooked White Rice	1 Cup	170	4.4g
Dal	½ Cup	100	7g
Soya chunk	45g	160	24g
Vegetables (Dry)	1 Cup	150	5.2g
Dosa	1 No	125	2.51g
Idly	2 No	150	3.2g
Chapati	1 No	120	3.1g
Upma	1 Cup	270	3.4g
Raggi (Uncooked)	50g	170	4g
White bread	2 No	170	5.2g
Egg	1 No	74	6.29g
Mutton curry	3/4th Cup	260	18g
Chicken curry	3/4th Cup	240	22.4g
Fish	100g	206	22g
Milk	1 Cup	146	7.8g
Black tea	240 mL	2	0g
Black coffee	240 mL	2	0.28g
Sugar	1 teaspoon	16	0g

*1 cup = 200mL, 1 teaspoon= 5g

Removal of Nasogastric tube

Definition:

Process of removing the nasogastric tube.

Purpose:

1. To facilitate oral feeding
2. To reintroduce a new nasogastric tube

Articles required:

1. Gloves
2. Gauze piece
3. Kidney tray
4. Disposable bag

Procedure:

Action	Rationale
1. Explain the procedure to the patient and the reason why the NG tube is being removed	• To alleviate anxiety associated with the procedure and facilitate cooperation
2. Wash hand and wear gloves	• To prevent contact with the body fluid
3. Assist the patient in assuming an upright position	• To reduce the risk of aspiration.
4. Gently remove the adhesive tape holding the NG tube at the nose	• To facilitate the removal of the tube by removing its support
5. Ensure that the tube is closed	• To prevent leaking of fluid inside the tube on removal causing aspiration
6. Place a gauze piece around the tube at the nostrils with the non-dominant hand	• To absorb the gastric and nasal secretions on removal

7. Advice the patient to hold the breath	• To prevent aspiration while removing the tube
8. Pinch the tube and gently pull out the tube and once the tube is completely out, encourage the patient to resume breathing. **Nursing alert: If there is resistance in pulling out the tube, do not pull the tube vigorously.**	• Gently pulling the tube minimizes the risk of injury • Vigorous pulling of the tube on resistance can cause serious injury
9. Discard the tube in a disposable bag	• To properly dispose the waste and prevent contamination
10. Remove the adhesive sticking to the patients' nose gently using a gauze piece	• To maintain dignity and preserve body image
11. Wash your hands	• To break the chain of cross-infection
12. Document the procedure	• To ensure continuity of care

CARE OF URINARY CATHETERS

Urinary catheterization

Definition

Process of inserting a tube into the bladder, usually through the urethra under aseptic precautions to facilitate urine drainage.

Indwelling catheter: It is also called continuous bladder drainage (CBD) where the catheter is retained inside the bladder by inflating a balloon to facilitate continuous drainage. Indwelling catheters are associated with a higher incidence of urinary tract infection.

Intermittent catheter: Also called as self-intermittent catheterization, is a process of inserting the tube into the bladder via the urethra to drain the urine, and once the urine is drained the catheter is removed. The process is repeated several times in a day. With intermittent catheterization, the risk of developing urinary tract infection is lower when compared with indwelling catheterization.

Indications for catheterisation

1. Incomplete emptying of the bladder due to neurological complications or diseases
2. Urinary obstruction and retention of urine
3. Urinary incontinence when other methods like condom drainage have proven unsuccessful.

Articles required:

1. Sterile disposable gloves (2 sets)
2. Sterile tray containing sterile gauze, sterile pad and sterile paper
3. Water-soluble lubricant gel (Lignocaine gel)

4. 5mL syringe (1), 10 mL syringe (2).
5. Sterile water
6. Povidone-iodine solution
7. Foleys catheter of appropriate size
8. Urobag
9. Rubber sheet
10. Disposable sterile drapes

General Instructions:

1. Indwelling catheterization should not be done for the patient who lying on the floor
2. Ensure that the patient is not constipated before urinary catheterization. If the patient is constipated relieve constipation before catheterization.
3. Before urinary catheterization ask the patient and the family about any difficulty encountered in the previous catheterization.
4. Changing the urinary catheter should be according to the clinical indication and manufacturers guidelines

Procedure for female indwelling urinary catheterisation

Procedure	Rationale
1. Introduce yourself and the team on meeting the patient at home	• To gain trust and co-operation
2. Explain the procedure to the patient and the family. Explains the risks associated with the procedure to the patient and the family. 3. Obtain informed consent	• To ensure that patient /family understands the procedure to provide consent.

4. Assemble all the equipment at patients' bedside	• Proper organization of the articles enables to do the procedure skilfully
5. Check the catheter size and type against the written instructions in the patient's health records	• To avoid introducing wrong size and device
6. Check for any allergies e.g. latex or anaesthetic gels	• To prevent an allergic reaction
7. Wash your hands	• To prevent infection
8. Close the door or use screen	• To provide privacy
9. Assist the patient in assuming the lithotomy position	• The female perineum can be easily accessed in the lithotomy position
10. Wear sterile apron	• To practice barrier nursing
11. Catheter Removal: 12. Wear a Clean glove. 13. Attach the 10mL syringe to the balloon deflating port and gently deflate the balloon. Do not quickly or vigorously pull the plunger 14. Once the balloon is completely deflated, gently pull the catheter out. Nursing Alert: Do not vigorously pull the catheter if there is resistance. Seek the advice of the physician 15. Discard the catheter in an appropriate bin 16. Remove the Clean glove	• To prevent injury to the bladder mucosa due to vacuuming on quick deflation
17. Wash your hands with soap and water	• To prevent cross-infection

18. Open sterile dressing pack onto a clean field and place all sterile single-use equipment required within the sterile field 19. Use aseptic principles and ensure that only sterile single-use items are used. Remember to keep exposure of the articles to a minimum	• To maintain asepsis and to prevent the contamination of sterile equipment
20. Wear a single-use sterile glove	• To maintain asepsis
21. Soak the sterile gauze in povidone-iodine solution and begin cleaning the area starting from symphysis pubis then the groins up to 1/3rd of the medial aspect of the thigh from inside to outside. Use only one stroke for each gauze	• To clean the perineal area with the antiseptic solution
22. Using sterile gauze soaked in povidone-iodine, clean labia majora then minora and identify the urethral meatus, clean around the urethral orifice using downward strokes. Use one gauze for each stroke(42)	• To kill the microorganisms in the female genital tract entering the urinary tract
23. Remove the glove and wear a new sterile glove	• To prevent cross-infection
24. Load a 10mL syringe with sterile water	• To keep it ready to inflate the balloon
25. Place a sterile towel or a paper with a central hole on the perineum.	• To create a sterile field and help prevent contamination

26. Remove the catheter from its package under aseptic precautions and lubricate the tip of the catheter with an anaesthetic lubricant gel	• To prevent cross-infection • To ensure less friction while insertion
27. With the thumb and index finger of the non-dominant hand separate the labia and with the dominant hand insert the catheter approximately 5-6cms. (Figure 30) Once urine has started draining insert a further 3-5cms. If at any time the patient experiences any undue pain or there is resistance when passing the catheter, stop and seek advice.	• To ensure that the catheter is inside the bladder.
28. Attach a sterile drainage bag.	• To maintain a closed circuit system
29. Slowly inflate the balloon with 15mL of sterile water and gently pull the catheter till you feel the resistance then withdraw 5mL of sterile water from the inflated balloon and secure it. Balloon inflation should be pain-free. If the patient experiences any pain or discomfort during balloon inflation, the balloon might be positioned in the urethra. Deflate the balloon and advance the catheter a few more centimetres and try again (43)	• To retain the catheter in the bladder (Overinflation of the balloon may cause irritation of the bladder trigone inducing bladder spasm resulting in discomfort and peri-catheter leak)

30. Measure the amount of urine	• To document and to monitor the renal function
31. Ensure the patient is comfortable and the dry the perineal area	• Wet perineal area predisposes the patient to infection and pressure sore
32. Anchor the catheter to the thigh with an adhesive tape. Ensure that there is no traction in the catheter between the adhesive tape and the point where the catheter enters the body.	• To reduce traction and to secure the catheter
33. On completion of procedure remove and dispose the personnel protective equipment in accordance with waste management policy	• To prevent cross-infection and environmental contamination
34. Wash hands after the procedure	• To break the barrier of cross-infection
35. Document the following • Catheter material • Catheter size • Volume of sterile water used to inflate the balloon • Planned date for the next catheter change	• To ensure continuity of care

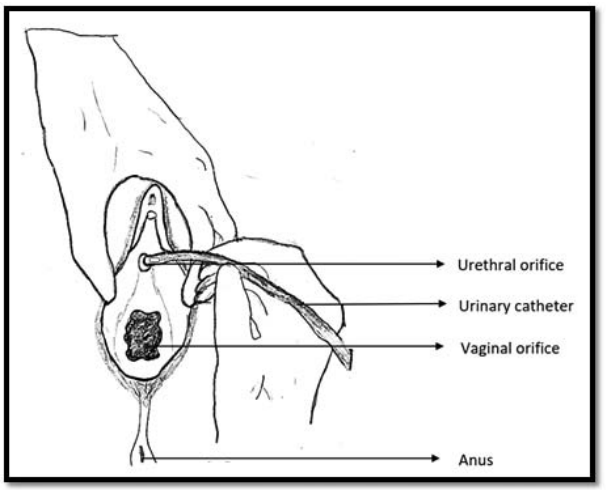


Figure 30: Separating the labia with non-dominant hand & insertion of catheter into the urethra in females

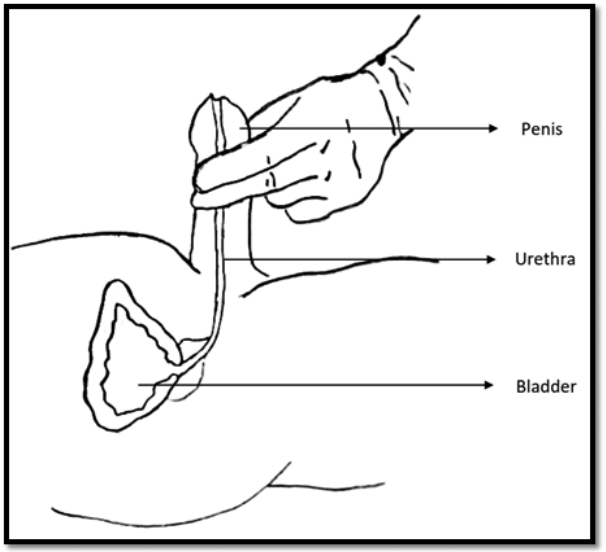


Figure 31: Holding the penis at 90° angle to insert the catheter in males

Procedure for male indwelling urinary catheterisation

Procedure	Rationale
1. Introduce yourself and the team on meeting the patient at home	• To gain trust and co-operation
2. Explain the procedure to the patient and the family. Explains the risks associated with the procedure to the patient and the family. 3. Obtain informed consent	• To ensure that the patient /family understands the procedure to provide consent
4. Assemble all the equipment at patients' bedside	• Proper organization of the articles enables to do the procedure skilfully
5. Check the catheter size and type against the written instructions in the patient's health records	• To avoid introducing wrong size and device
6. Check for any allergies e.g. latex or anaesthetic gels	• To reduce the risk of anaphylaxis
7. Wash your hands	• To prevent infection
8. Close the door or use screen	• To provide privacy
9. Assist the patient in assuming the supine position	• The procedure can be performed with ease if the patient is in supine position
10. Wear sterile apron	• To practice barrier nursing

11. Catheter Removal: 12. Wear a clean glove. 13. Attach the 10mL syringe to the balloon deflating port and gently deflate the balloon. Do not quickly or vigorously pull the plunger 14. Once the balloon is completely deflated, gently pull the catheter out. 15. Nursing Alert: Don not vigorously pull the catheter if there is resistance. Seek the advice of the physician 16. Discard the catheter in an appropriate bin 17. Remove the Clean glove	• To prevent injury to the bladder mucosa due to vacuuming on quick deflation
18. Wash your hands with soap and water	• To prevent cross-infection
19. Open sterile dressing pack onto a clean field and place all the sterile single-use equipment required within the sterile field 20. Use aseptic principles and ensure that only sterile single-use items are used. Remember to keep exposure of the articles to a minimum	• To maintain asepsis and to prevent the contamination of sterile equipment
21. Wear a single-use sterile glove	• To maintain asepsis

22. Soak the sterile gauze in povidone-iodine solution and begin cleaning the area starting from symphysis pubis then the groins to the 1/3rd of the medial aspect of the thigh and the scrotum from inside to outside direction.	• To ensure adequate preparation of the perineal area and maintain asepsis.
23. Hold the penis with the non-dominant hand and using sterile gauze soaked in povidone-iodine, clean the penis from proximal to distal (From external urethral orifice along the shaft to the penis) in a circular motion. Use one gauze for each circular motion. In the case of uncircumcised penis, retract the foreskin and follow the above-mentioned technique.	• To kill the microorganisms and prevent their entry into the urinary tract
24. Remove the glove and wear a new sterile glove	• To prevent cross-infection
25. Load a 10mL syringe with sterile water and anaesthetic lubricant gel in 10mL syringe	• To keep it ready for balloon inflation
26. Arrange a sterile towel or a paper with a central hole to cover the surrounding area.	• To create a sterile field and help prevent contamination.
27. Hold the shaft of the penis in 90° angle (Figure 31) and infuse the anaesthetic lubricant gel via the external urethral orifice and wait for 5mins.(42)	• Reduces friction while inserting the catheter. • To anaesthetise the urethra
28. Remove the catheter from its package with aseptic precautions.	• To prevent cross-infection

29. Insert the catheter approximately 15-25cms. Once urine has started draining insert a further 3-5cms.(42) If at any time the patient experiences any undue pain or there is resistance when passing the catheter, stop and seek advice.	• To ensure that the catheter is inside the bladder
30. Attach a sterile drainage bag.	• To maintain a closed-circuit system
31. Slowly inflate the balloon with 15mL of sterile water and gently pull the catheter till you feel the resistance then withdraw 5mL of sterile water from the inflated balloon and secure it. Balloon inflation should be pain-free. If the patient experiences any pain or discomfort during balloon inflation, the balloon might be positioned in the urethra. Deflate the balloon and advance the catheter a few more centimetres and try again.	• To retain the catheter in the bladder (Overinflation of the balloon may cause irritation of the bladder trigone inducing bladder spasm resulting in discomfort and peri-catheter leak)
32. Measure the amount of urine	• To document and to monitor the renal function
33. If the foreskin is retracted close the retraction	• To prevent dryness
34. Ensure the patient is comfortable and the dry the perineal area	• Wet perineal area predisposes the patient to infection and pressure sore

35. Anchor the catheter to the thigh with an adhesive tape. Ensure that there is no traction in the catheter between the adhesive tape and the point where the catheter enters the body.	• To reduce traction and to secure the catheter
36. On completion of procedure remove and dispose the personnel protective equipment in accordance with waste management policy	• To prevent cross-infection and environmental contamination
37. Wash hands after the procedure	• To break the barrier of cross-infection
38. Document the following • Catheter material • Catheter size • Volume of sterile water used to inflate the balloon • Planned date for the next catheter change	• To ensure continuity of care

Procedure for suprapubic catheter change

	Action	Rationale
1.	Introduce yourself and the team on meeting the patient at home	• To gain trust and co-operation
2.	Explain the procedure to the patient and the family. Explains the risks associated with the procedure to the patient and the family.	• To ensure that the patient/family understands the procedure to provide consent
3.	Obtain informed consent	
4.	Assemble all the equipment at patients' bedside	• Proper organization of the articles enables to do the procedure skilfully

5. Check the catheter size and type against the written instructions in the patient's health records	• To avoid introducing wrong size and device
6. Check for any allergies e.g. latex or anaesthetic gels	• To reduce the risk of anaphylaxis
7. Wash your hands	• To prevent infection
8. Close the door or use screen	• To provide privacy
9. Assist the patient in assuming the supine position	• The procedure can be performed with ease if the patient is in supine position
10. Wear sterile apron	• To practice barrier nursing
11. Catheter Removal: 12. Wear a clean glove. 13. Attach empty 10mL syringe to catheter port and gently deflate the balloon. Place a piece of gauze around the cystostomy site and gently remove the catheter while noting the length of the catheter and angle of insertion 14. Discard the catheter in an appropriate bin 15. Remove the glove	• To retain the catheter in the bladder (Overinflation of the balloon may cause irritation of the bladder trigone inducing bladder spasm resulting in discomfort and peri-catheter leak)
16. Wash the hands	• To prevent infection
17. Wear a single-use sterile glove	• To maintain asepsis
18. Soak the sterile gauze in a povidone-iodine solution and begin cleaning the cystostomy site in a circular motion from inside to outside. Use a sterile gauze for each motion. Clean 5cm radius around the cystostomy site	• To ensure adequate preparation of the cystostomy site and maintain asepsis. • To reduce the risk of cross-infection

19. Remove the glove and wear a new sterile glove	• To prevent cross-infection
20. Load a 10mL syringe with sterile water.	• To keep it ready for balloon inflation
21. Arrange a sterile towel to cover the surrounding area and maintain dignity	• To create a sterile field and help prevent contamination
22. Remove the catheter from its package with aseptic precautions and lubricate the tip of the catheter with an anaesthetic lubricant gel.	• To prevent cross-infection • To reduce friction while inserting the catheter
23. Visually compare the length of the new catheter with the length of the removed catheter (the inner wrapper can be used to mark the length of the catheter to be inserted) to ensure catheter inserted to the correct length 24. Gently insert the new catheter to the same length and angle as the previous catheter (this should be done as soon as possible after the removal of the old catheter)	• To ensure the balloon is in the bladder • To prevent cystostomy from closing in.
25. Attach a sterile drainage bag.	• To maintain a closed-circuit system

26. Slowly inflate the balloon with 15mL of sterile water and gently pull the catheter till you feel the resistance then withdraw 5mL of sterile water from the inflated balloon and secure it. Balloon inflation should be pain-free. If the patient experiences any pain or discomfort during balloon inflation, deflate the balloon and advance the catheter a few more centimetres before trying again.	• To retain the catheter in the bladder (Overinflation of the balloon may cause irritation of the bladder trigone inducing bladder spasm)
27. Measure the amount of urine	• To document and to monitor the renal function
28. The catheter should be anchored to the abdominal wall with an adhesive tape. Ensure that there is no traction in the catheter between the adhesive tape and the point where the catheter enters the bladder.	• Anchoring the catheter reduces traction.
29. On completion of procedure remove and dispose the personnel protective equipment in accordance with waste management policy	• To prevent cross-infection and environmental contamination
30. Wash hands after the procedure	• To break the barrier of cross-infection
31. Document the following • Catheter material • Catheter size • Volume of sterile water used to inflate the balloon • Planned date for the next catheter change	• To ensure continuity of care

Family education for patients on indwelling catheter

- Instruct the patient and the family caregiver not to raise the drainage tube or urine bag above the hip level. This is to prevent the backflow of urine into the bladder.
- The patient should consume plenty of oral fluids (2 to 3L per day) unless contraindicated. This reduces the risk of urinary tract infection.
- The bag should be emptied when it is more than half full. This ensures the continuous flow of urine from the bladder.
- Instruct the caregivers to empty the bag before the patient goes to sleep and also in the morning at waking hours. This is to prevent the overfilling of the bag.
- Ensure that the tube is not kinked. A kinked tube obstructs the flow of urine.
- Instruct the carers to anchor the urine collection bag to the side of the cot and not at the leg end. This is to avoid traction on the tube.
- Instruct the patient and the family caregivers to inform the homecare team if the patient has fever, chills and lower abdominal pain. This could be a sign of a urinary tract infection.
- Instruct the patient and the family caregivers to inform the homecare team if they notice urinary sediments, peri-catheter pus discharge and cloudy urine. This could be a sign of a urinary tract infection.

Collection of sterile urine specimen from a patient with indwelling catheter: (Sample port and puncture technique)

Definition:

Process of collecting sterile urine specimen from a closed urinary drainage system.

Purpose:

- To obtain a urine sample for laboratory diagnosis

Equipment required:

1. Sterile syringe
2. Sterile needle
3. Sterile sample collection container
4. Alcohol swab
5. Gauze piece
6. Artery forceps
7. Clean gloves

Cautions: Puncture technique should be used only on urinary catheters with self-sealing material. Silicon catheters and PVC catheters do not have self-sealing ability hence sample collection port should be used in such catheters.

Procedure:

Action	Rationale
1. Explain the procedure to the patient and obtain informed consent	• To alleviate anxiety associated with the procedure

2. Cover the collection bag tube with a gauze piece close to the foley's catheter and clamp the tube and wait for 10 to 15 minutes. (if artery forceps is not available the tube can be folded and fastened with a rubber band to interrupt the flow)	• Clamping the tube facilitates the accumulation of urine within the catheter to facilitate withdrawal. • Covering the tube with the gauze piece prevents damage.
3. <u>Collection of urine from the sample collection port:</u> If a sample collection port is available clean the port with an alcohol swab and collect the urine from the port. <u>Collection of urine directly from the catheter:</u> If the collection port is not available, urine should be collected from the foley's catheter at the point where the catheter is connected to the drainage tube. (Refer figure 32) Clean this area with an alcohol swab and insert the needle and syringe at 45° angle into the catheter. Once the needle has entered the lumen the resistance is no longer felt. Then gently pull back the plunger and collect the required quantity of urine and withdraw the needle.	• Cleaning the port with the alcohol swab ensures that the collected specimen is sterile. • This is the safest site to collect the urine sample. Puncturing proximally can hamper the balloon inflation circuit. • Cleaning the site with alcohol swab prevents the introduction of microbes into the catheter and also ensures that the sample is sterile

4. After collecting urine clean the port or the site once again with an alcohol swab	• To disinfect the site
5. Transfer the urine into the sterile sample collection container	• To facilitate the transfer of specimen to the laboratory
6. Label the container	• To prevent errors
7. Release the clamp	• To re-establish the flow of urine
8. Ensure that there is no urinary leakage from the port or the site of puncture.	• If there is leakage of urine from the port then the drainage bag should be changed. • If there is a leak from the puncture site the catheter should be replaced.

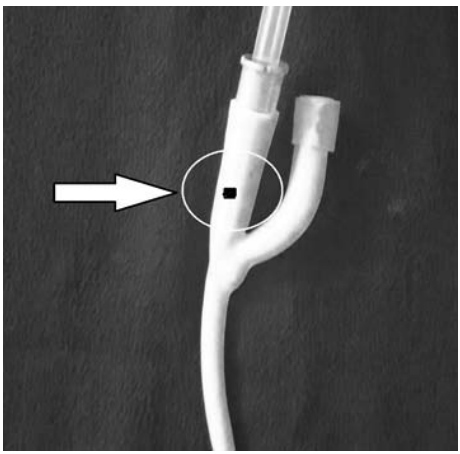


Figure 32: Puncture site for a sterile urine sample collection from a self-sealing catheter

Bladder irrigation (In a two-way catheter)

Definition:

Bladder irrigation is a process of flushing the bladder and catheter using a sterile solution

Purpose:

1. To maintain the patency of the urinary catheter
2. To relieve congestion and pain
3. To remove debris
4. To prevent clot formation

Equipment required

1. Sterile gloves
2. Alcohol swab
3. IV set
4. 0.9% Normal saline

Procedure:

Action	Rationale
1. Explain the procedure to the patient	• To gain patients cooperation and alleviate anxiety.
2. Wash your hands	• To prevent infection
3. Connect 500mL Normal Saline to an IV set and hang it at 2 to 3 feet above the patients' bladder (Ideally at 60cm,(44) never above 91 cm)	• To facilitate free flow aided by gravity • Height above 3 feet can facilitate the absorption of irrigation fluid.
4. Ensure that the urine collection bag is already emptied	• To ensure accurate calculation of output volume

5. Clean the distal end of the catheter that is connected to the urine collection bag with an alcohol swab.	• To prevent microorganisms from entering through the irrigation solution into the bladder
6. Disconnect the urine collection bag from the catheter and connect the IV tubing to the catheter Nursing Alert: Hold the drainage tube of the urine collection bag in hand, do not place the tube in the surrounding places	• Keeping the drainage on the surrounding can introduce infection into the catheter
7. Open the IV adapter and let the irrigation solution flow into the bladder via the catheter. 1. Ideally, 150mL in instilled unless prescribed otherwise.	• Instilling 150mL is safer as there is less chance of excessive bladder distention leading to bladder spasms. • Small sequential instillation is better than large volume instillation.(42)
8. Close the IV adapter, disconnect the IV tubing from the catheter and connect the drainage tube of the urine collection bag to the catheter and let the irrigation fluid drain into the bag by gravity. Nursing Alert: Make sure that the urobag is kept below the waist level.	• Keeping the urine collection bag below the waist level facilitates drainage by gravity and prevents the backflow of drainage contents.
9. Repeat the procedure till clear return is seen	• To ensure complete removal of sediments and clots
10. Calculate the urine output. 2. Urine output = Volume out- (mL) – Volume in (mL)	• If the output is less than the input, there could be kink or obstruction in the drainage system
11. Wash your hands	• To break the chain of cross-infection
12. Document the procedure	• To maintain the continuity of care

Clean Intermittent self-catheterization

Definition:

Clean intermittent self-catheterization is a process of draining the bladder periodically or as required, by inserting a clean catheter via the urethra into the bladder.

Advantages of Intermittent catheterization:

1. Reduces the risk of urinary tract infection, a common complication of indwelling catheterization.
2. Reduces risk of urethral injury
3. The patient can remain sexually active
4. Gives patients a sense of control and independence

Limitations of Intermittent catheterization:

1. Patients should have good coordination and cognition
2. Requires a high level of motivation to overcome fear and displeasure
3. May not be suitable to patients with anatomical deformities and small bladder capacity

Equipment required:

1. Intermittent catheter
2. Water-soluble lubricant gel
3. Soap and water
4. Dry towel (2)
5. Urine collection jar
6. Mirror if preferred (for females)

General instruction:

1. Intermittent catheterization is a self-administered procedure that should be demonstrated to the patient.
2. After the demonstration of the procedure, the nurse should observe the patient while performing the procedure and ensure adherence to the right techniques and standards
3. Patients' privacy and dignity should be maintained throughout the procedure.
4. The frequency of catheterization depends on the individual, capacity of bladder and intake of fluids. Catheterizing four times a day is ideal. One should keep in mind that the over-distention of the bladder should be avoided.
5. Reusable catheters are usually used for 7 days and discarded.

Procedure: Steps in teaching the patient

Action	Rationale
1. Advice the patient to wash hands with soap and water	• To prevent contamination and infection
2. Assemble all the equipment to the patient side	• To facilitate organization
3. Explain the procedure to the patient	• To alleviate anxiety associated with the procedure and promote confidence

4. Assist the patient in assuming a comfortable position (it can be sitting or standing)	• Comfortable position promotes confidence in performing the procedure and reduces errors
5. For males: Advise the patient to wash the perineum with soap and water. If the foreskin is present advice the patient to retract the foreskin and clean the urethral orifice, glans penis and the penis. For females: Wash the perineum with soap and water. Separate the labia with the index and middle finger of non-dominant hand then clean from the urethral orifice downward.	• Washing the perineal area before catheterization reduces the chance of contamination. • To move the contaminants away from the urethral orifice
6. Advice the patient to pick up the catheter with the dominant hand 5 to 7 cm away from the tip and lubricate the tip of the catheter with water-soluble lubricant get. Nursing Alert: Ensure that the tip of the catheter does not come in contact with the tube of lubricant gel	• Picking up the catheter away from the tip reduces the chance of contamination • Applying lubricant gel reduces friction. • Preventing contact reduces the chance of contamination and infection.

7. Ensure that the distal end of the catheter is placed just above the urine collection jar	• To prevent spilling of urine on the surface
8. Catheter insertion: For males: Advice the patient to hold the penis with the non-dominant hand and hold it upright towards the abdomen. Then advise the patient to gently insert the catheter through the urethral orifice until the urine begins to drain. Once the urine begins to drain advise the patient to insert the catheter 2cm further in. Once the urine has started to flow advice the patient to let down the penis to its natural position. For females: With the non-dominant hand separate the labia. To identify the urethra, the patient can either feel for the urethra with her finger or use a mirror. Once the urethra is identified gently insert the catheter until urine begins to drain. Once the urine begins to drain advise the patient to insert the catheter 2cm further in. Nursing Alert: Reassure the patient that there may be resistance and discomfort as the catheter reaches the sphincter.	• Holding the penis upright extends the urethra and facilitates easy insertion • Inserting the catheter 2cm further in after the initiation of urine flow facilitates complete bladder emptying

9. Once the flow has ceased slowly remove the catheter by gently pulling it out from the urethral orifice. If urine flow restarts again while withdrawing the catheter place the catheter in that same position till urine flow stops.	• This action facilitates complete bladder emptying.
10. Advise the patient to place the catheter on a dry towel	• To prevent contamination of catheter and prepare for washing
11. Advise the patient wash the perineal area	• To clean the perineum of contaminants related to the procedure
12. Advise the patient to rinse the catheter with running water, apply soap and rinse with running water thoroughly.	• To remove all the urinary contaminants from the catheter
13. Dry the catheter completely with another dry towel and store it in a clean and dry container.	• To remove all the moisture that can act as a source of infection
14. Advise the patient to wash hands at the end of the procedure	• To promote hygiene and prevent infection

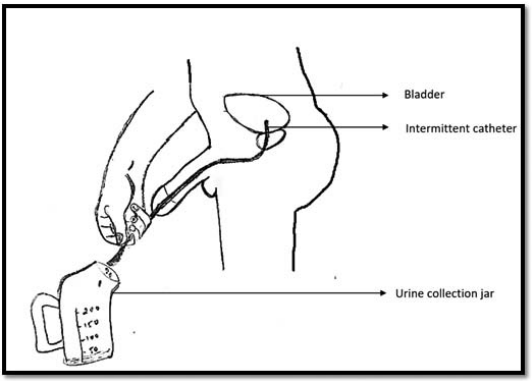


Figure 33: Technique in inserting a self-intermittent catheter in females

Condom catheters

Definition: Condom catheters are external catheters that are worn around the penis to drain the urine into the collection bag.

Situations in which condom drainage can be used:

- Urinary incontinence
- Overactive bladder
- Incontinence due to dementia and mobility-related issues

Situations in which condom drainage cannot be used:

- Urinary retention
- Urinary obstruction

Advantages of condom catheters:

- Condom catheters are non-invasive
- Less chance of urinary tract infection when compared to indwelling catheters
- Less expensive
- Simple to use

Application and care of condom drainage:

Choosing the right size: Condom catheters are available in three sizes – Large, Medium and Small. Choosing the right size prevents leakage and discomfort.

Condom catheter application:

1. After choosing the correct size catheter, roll the catheter up to the tip (Figure34)
2. Clean the penis with the wet cloth from the urethral orifice in a circular motion towards the shaft of the penis and leave it to dry.

3. Gently insert the foreskin/glans penis into the condom and unroll the condom over the shaft of the penis.

4. Apply Velcro strap/adhesive tape around the condom to secure it in place. Ensure that it is not too tight that it obstructs the urinary flow or too loose that it slips out of the penis.

5. If an adhesive tape is used to secure the condom in place, ensure that it is applied only around the condom and not around the skin (Figure 35). Adhesive tape should not be applied around the skin as it can cause pain and injury upon removal.

6. Connect the urine collection bag to the tip of the condom catheter to facilitate drainage.

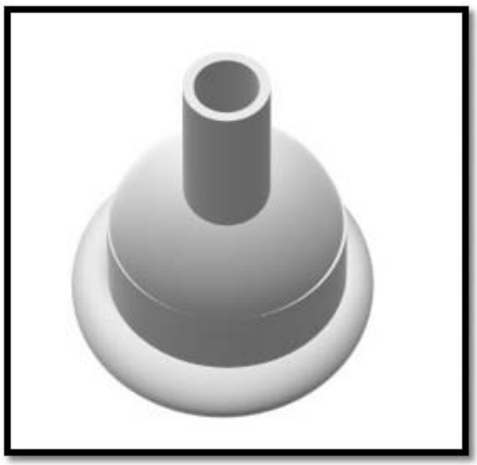


Figure 34: Rolled condom catheter

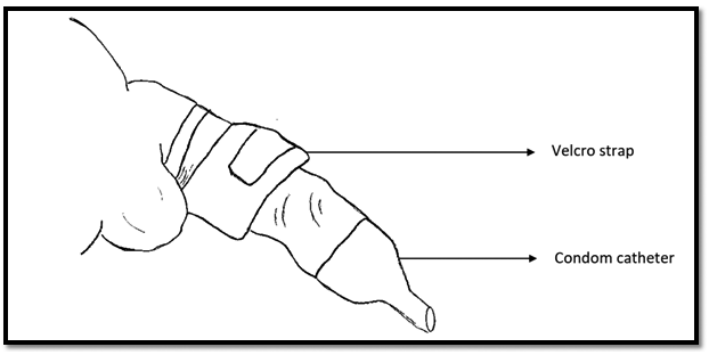


Figure 35: Velcro strap applied over the condom catheter and not over the skin

Instructions for patients on a condom catheter and their caregivers:

1. Instruct the patient and the family caregiver to buy two condom catheters
2. One condom catheter can be applied for 12 hours. It is then washed and dried in the shade while the other condom catheter is used.
3. While applying the condom catheter observe for skin excoriations. If skin excoriations are present the same should be informed to the homecare team.
4. The penis should be cleaned with soap and water while changing the condom catheter. Once cleaned it should be completely dry before the application of the condom catheter.
5. Do not apply any powder or lotion on the penis unless prescribed.

6. Ensure that the tip of the condom catheter or the drainage tube is not kinked. This will obstruct urinary flow and result in urine leakage, skin excoriation or even urinary tract infection.

7. The drainage tube can be anchored to the thigh to prevent traction

8. The drainage bag should not be placed on the ground. It should always be hung below the waist level.

9. The drainage bag should be tied to the side of the cot rather than at the leg end to prevent traction on the condom catheter.

10. The bag should be emptied when it is more than half full and it should also be emptied before sleeping at night.

RECTAL MEASURES

1. Per-Rectal examination (Digital examination of the rectum)
2. Placing rectal suppositories
3. Rectal Enema (High and Low)

Per-rectal examination (Digital examination of the rectum)

Definition:

Process of performing a visual examination of perianal area and digital palpation rectum.

Purpose:

- To diagnose faecal impaction
- To examine the prostate gland
- To evaluate haemorrhoids
- To evaluate rectal tumours
- To evaluate fistulas

Equipment:

1. Clean gloves
2. Face mask
3. Apron
4. Kidney tray
5. Anaesthetic lubricant jelly

Procedure:

Action	Rationale
1. Wash your hands	• To prevent infection
2. Advice the patient to empty the bladder(17)	• To reduce discomfort during the procedure
3. Explain the procedure to the patient	• To alleviate anxiety and gain co-operation
4. Close the door or use a screen	• To provide privacy
5. Advise the patient to assume left lateral position(17) with the right leg flexed at the knee and hip and left leg extended. Bring the flexed knee to the chest as much as possible.	• Since the descending, sigmoid colon and rectum are located on the left side, assuming a left lateral position facilitates easy access.
6. Wear Clean glove	• To prevent soiling of hands
7. Lubricate the index finger and middle finger of the dominant hand liberally with an anaesthetic lubricant gel	• To avoid friction while inserting the finger into the anal canal and to reduce pain
8. Separate the gluteal fold with the non-dominant hand and visually examine the perianal skin integrity	• Perianal skin excoriation or external haemorrhoids requires special attention as per-rectal examination in these patients can be very painful

9. Placing the finger on the anus for few seconds will stimulate anal reflex with anal sphincter contracting and then relaxing. (17) 10. Advise the patient to take deep breaths and as the patient is breathing gently insert the lubricated index finger into the anus.	• Working with anal reflex aids ease of insertion • Deep breaths relax the anal sphincter.
11. Palpate the anal canal by clockwise and anticlockwise sweeps. 12. Check for its patency, faecal mass and abnormalities.(17)	• To identify fistulas, faecal impaction and tumours
13. Discard the gloves wash your hands	• To prevent cross-infection
14. Document the findings	• To maintain the continuity of care

Placing rectal suppositories

Definition:

Process of administering medication via the rectum to be absorbed by rectal mucosa

Purpose:

- For quicker action
- To administer medication to patients for whom oral intake is difficult or not possible

Equipment:

1. Clean gloves
2. Face mask

3. Anaesthetic lubricant jelly
4. Rectal suppository
5. Apron
6. Kidney tray
7. Bedpan

Procedure:

Action	Rationale
1. Wash your hands	• To prevent infection
2. Explain the procedure to the patient	• To alleviate anxiety and gain co-operation
3. Close the door or use a screen	• To provide privacy
4. Advice the patient to assume left lateral position with the right leg flexed at the knee and hip and left leg extended. Bring the flexed knee to the chest as much as possible.	• Since the descending, sigmoid colon and rectum are located on the left side, assuming a left lateral position facilitates easy access.
5. Wear Clean glove	• To prevent soiling of hands
6. Lubricate the index finger and middle finger of the dominant hand liberally with an anaesthetic lubricant gel	• To avoid friction while inserting the finger into the anal canal and reduce pain
7. Separate the gluteal fold with the dominant hand and visually examine the perianal skin integrity	• Perianal skin excoriation or external haemorrhoids requires special attention as per-rectal examination in these patients can be very painful

8. Placing the finger on the anus for few seconds will stimulate anal reflex with anal sphincter contracting and then relaxing.(17) 9. Advise the patient to take deep breaths and as the patient is breathing gently insert the lubricated index finger into the anus.	• Working with anal reflex aids ease of insertion • Deep breaths relax the anal sphincter.
10. Palpate the anal canal for faecal mass. If present, remove them manually before placing the suppository.	• The absorption of the suppository is impaired by the presence of stool in the rectum
11. Lubricate the suppository and insert it into the anal canal and place it alongside the rectal mucosa.	• Placing the suppository alongside the rectal mucosa facilitates quicker absorption.
12. Advise the patient to assume a supine position and rest for a while. Nursing Alert: Advise the patient not to strain	• Movement can precipitate discomfort and induce peristalsis • Straining will result in the expulsion of the suppository.
13. Discard the gloves wash your hands	• To prevent cross-infection
14. Document the procedure	• To facilitate continuity of care

Administering rectal enema

Definition:

Processes of administering therapeutic fluid into the lower bowel through the rectum.

Purpose:

- To facilitate bowel evacuation
- To relieve constipation

Equipment:

1. Clean gloves
2. Face mask
3. Anaesthetic lubricant jelly
4. Enema Prescribed
5. Rectal tube or Suction catheter (14 Size)
6. Apron
7. Kidney tray

General instructions:

1. The enema should be administered in a place where the toilet is in close proximity to the patient.
2. Check the enema bag for the presence of contaminants.
3. Enema many not suitable for all patients especially when the patients' general condition is poor.

Procedure:

Action	Rationale
1. Wash your hands	• To prevent infection
2. Explain the procedure to the patient	• To alleviate anxiety and gain co-operation
3. Close the door or use a screen	• To provide privacy
4. Place the enema bag in a lukewarm water tub	• Lukewarm enema aids in bowel contractions and prevents discomfort associated with hypothermia
5. Advise the patient to assume left lateral position with the right leg flexed at the knee and hip and left leg extended. Bring the flexed knee to the chest as much as possible.	• Since the descending, sigmoid colon and rectum are located on the left side, assuming a left lateral position facilitates easy access.
6. Wear Clean glove	• To prevent soiling of hands
7. Lubricate the index finger and middle finger of the dominant hand liberally with an anaesthetic lubricant gel	• To avoid friction while inserting the finger into the anal canal and reduce pain
8. Separate the gluteal fold with the dominant hand and visually examine the perianal skin integrity	• Perianal skin excoriation or external haemorrhoids requires special attention as per-rectal examination in these patients can be very painful
9. Placing the finger on the anus for few seconds will stimulate anal reflex with anal sphincter contracting and then relaxing. (17)	• Working with anal reflex aids ease of insertion
10. Advise the patient to take deep breaths and as the patient is breathing gently insert the lubricated index finger into the anus.	• Deep breaths relax the anal sphincter.

11. Palpate the anal canal for faecal mass. If present, remove them manually before administering the enema.	• Evacuation is sometimes incomplete in the lower bowel if manual evacuation is not performed before administering the enema
12. A low enema will be sufficient if the patient is constipated for <3 days or if the amount of stool in the rectum is less.	• Administering low enema in the presence of a large amount of stool will result in the incomplete evacuation of stool contents from the sigmoid colon
13. A high enema is warranted if the patient is constipated for more than 3 days or if a large amount of stool is palpated in the rectum.	• High enema facilitates complete evacuation of stool contents from the rectum
<u>Low enema</u> 1. Lubricate the rectal tube of the enema pack generously and gently insert the tube into the rectum while asking the patient to take deep breaths Nursing Alert: Ensure that the tube is not kinked while insertion	• Deep breaths relax the anal sphincter • It will be impossible to instill the enema solution if the rectal tube is kinked
<u>High enema</u> 2. Lubricate a 14-size suction tube and gently insert the tube into the rectum while asking the patient to take deep breaths Nursing Alert: Ensure that the tube is not kinked while insertion 14. After inserting the suction catheter fully connect the rectal tube of enema pack to the distal end of the suction catheter	• Deep breaths relax the anal sphincter • It will be impossible to instill the enema solution if the rectal tube is kinked

15. Release the clamp of the enema pack and squeeze the pack gently till all the fluid enters the rectum via the rectal tube. Nursing Alert Ensure that the enema solution is not too hot by placing it on the wrist before administration	• Enema solution that is too hot will result in severe discomfort to the patient
16. Advice the patient to hold the solution for about 5 minutes (if possible) and then go to the toilet	• Holding for 5 minutes will facilitate in loosening the impacted stool.
17. Discard the gloves wash your hands	• To prevent cross-infection
18. After evacuation ask the patient if he/she is feeling relieved and document the response and the procedure	• To facilitate continuity of care.

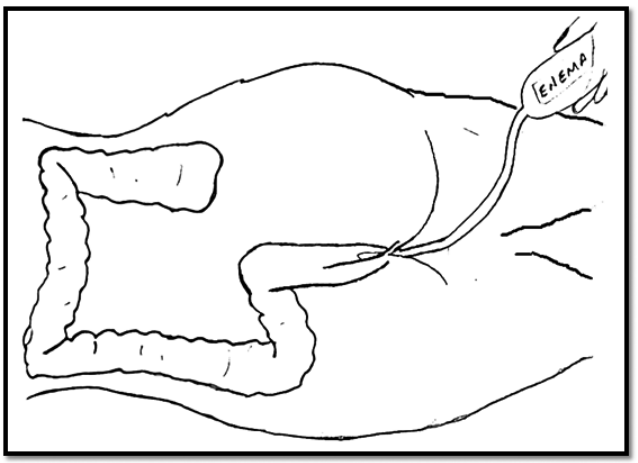


Figure 36: Administering low-enema in the left lateral position

WOUND CARE

Definition:

Process of cleaning the wound under aseptic precautions.

Purpose:

1. To clean the wound and remove dead cells
2. To treat and prevent infection
3. To provide moisture
4. To facilitate wound healing (In non-healing malignant wounds, wound care is provided to promote comfort and well-being of the patient)

Articles required:

1. Sterile tray
2. Sterile bowl
3. Sterile gauze
4. Sterile pad
5. Sterile gloves (2)
6. Roller bandage
7. Kidney tray
8. Apron
9. Saline
10. Surgical scissor
11. Adhesive tape
12. Metronidazole powder (From uncoated tablet) or solution/ other product prescribed
13. Lignocaine gel if required

14. Bupivacaine injection if required (For local application through gauze soak)
15. Sucralfate powder (if required)
16. Adrenaline 1:1000 ampule (if required, under medical supervision)
17. Vaseline gauze if required
18. Turpentine oil if required

General instruction:

1. Bathing should be undertaken before dressing and dressing should be done immediately after bathing as the dressing will soak up the water
2. It is preferred that the patient eats before dressing as pain and malodour can decrease the food intake
3. The steps of wound dressing should be demonstrated to the patient and family caregivers so that they can perform wound care regularly on their own.

Procedure:

Action	Rationale
1. Explain the procedure to the patient and show the family caregiver the procedure of wound dressing	• To reduce anxiety associated with the procedure • Explaining the wound dressing before the procedure reduced anticipatory pain • To empower the family caregiver and to ensure adherence
2. Close the door or use screen	• To provide privacy
3. Assist the patient in assuming a comfortable position that facilitates easy access to the wound	• To promote patient comfort and to facilitate good access to the wound

4. Assemble all the equipment at patients' bedside	➢ Proper organization of the articles enables to do the procedure skilfully
5. Wash your hands	• To break the chain of cross-infection
6. Wear sterile gloves	• To protect the hands from contact with the body fluid
<u>Removing the soiled dressing:</u> 7. Remove the roller bandage from the patients' soiled dressing gently. 8. Do not remove the pad and the gauze covering the wound while removing the roller bandage	• To facilitate access to the patients' wound • Removing the pad and the gauze that is in contact with the wound before wetting them causes pain and may result in bleeding
9. Wet the pad, gauze and the wound with sterile saline and wait for 5 minutes	• Wetting the pad, gauze and the wound provides moisture to the dry areas and facilitates easy removal of adherent dressings thereby reducing the pain and the risk of bleeding associated with the dressing.
10. Gently remove the soiled gauze and the pad and discard them in the kidney tray	• Gentle removal reduces the risk of pain, injury and bleeding
11. Discard the glove and wear a new sterile glove	• To prevent cross-contamination

Cleaning the wound: 12. With the sterile gauze and sterile saline gently clean the wound. Principles of wound cleaning: "Always clean the clean area first and then the unclean" For circular wounds: 13. In a circular motion clean the centre and spiral towards the periphery from inside to outside in concentric circles 14. Use one gauze for each concentric circular motion For linear wounds: 15. Start directly on the wound and make a downward stroke 16. Clean the sides similarly 17. Use one gauze for each downward stroke.	• To remove the dead cells and contaminants from the wound. • To take the contaminants away from the clean area • The wound is always considered the clean area and the surrounding skin is considered the unclean area. • Even in case of an infected wound, the wound is considered the clean area and the surrounding skin is considered as the unclean area
18. After cleaning the wound sprinkle metronidazole powder over the raw wound as required and place a wet gauze over the wound	• Metronidazole is an antibiotic then acts on both gram-positive and gram-negative organisms, it is very effective against anaerobic organisms • Placing the moist gauze over the wound keeps the wound hydrated and facilitates autolysis.
19. Cover the area with a sterile pad	• To protect the wound and to facilitate the absorption of exudates

20. After covering the wound with a sterile pad, use a roller bandage to encircle the sterile pads. 21. Ensure that the encircling is not too tight or too loose	• To secure the dressing in place and provide additional protection • If the encircling is too tight the patient may experience pain and if the encircling is too loose the dressing may fall out of place.
22. Discard the contaminated waste in an appropriate bag	• To prevent environmental contamination
23. Discard the gloves and apron, wash your hands	• To prevent cross-infection
24. Assist the patient in assuming a comfortable position	• To promote patient comfort
25. Document the following a. Size and shape of the wound b. Presence of infection c. Presence of exudate, slough and eschar d. Progress of the wound e. Antibiotic used for cleaning f. Next follow-up date	• To facilitate continuity of care
26. Encourage the family to follow the right wound cleaning practices and dress the wound regularly	• To ensure adherence and continuity of care

How to prepare dressing material at home

1. Saline can be prepared at home by adding one pinch of salt in one glass of water or two teaspoon of salt in one litre of water and boiling it for 20 minutes. (Once when the water starts to boil it should boil for 20 minutes). The saline prepared is for one-time use only. It should be prepared as and when needed.
2. Dressing material can be prepared by cutting soft cotton cloths into small pieces and steaming them in an Idly vessel or pressure cooker. The cloths treated this way should be used directly from the vessel to maintain their sterile nature.
3. They can be stored in a clean container but they are no longer considered sterile but can be used within 24 hours
4. Metronidazole tablets can be given to the family to be powdered and stored.

How to manage incident pain while dressing

In this case, it refers to the pain while doing dressing. (Procedural pain)

1. Incident pain can be managed by administering the rescue dose of analgesic half an hour before dressing or timing the dressing half an hour after the regular dose.
2. Ketamine can also be given sublingually as 0.25-0.5mg/kg, 15 minutes before dressing. The same drug used for injection is given sublingually.
3. It is crucial to completely wet the dressing before removing it from the wound. Removing a dry dressing causes additional injury, bleeding and pain.

4. Non-adherent dressing like Vaseline gauze can be less painful on removal. But they cannot be used in the presence of active infection.
5. Bupivacaine gauze soaking reduces pain when applied before dressing
6. Metronidazole powder can be mixed with lignocaine jelly to make a paste to minimise the pain.

How to manage wound bleeding at home

Bleeding is more pronounced in malignant ulcers. For this reason, mechanical and sharp debridement is avoided. The following measures can be taken to stop and prevent bleeding.

1. Avoid removing the dry dressing. Always wet the dressing before removal.
2. Meticulous care should be taken while dressing wounds with a tendency to bleed
3. Non-adherent dressing like Vaseline gauze dressing can minimize injury while removing the dressing and reduce the risk of bleeding.
4. Pressure bandaging with additional pads helps in compressing the bleed
5. Minor bleeding can be controlled using sucralfate powder dressing or calcium alginate dressing
6. In case of profuse bleeding, compressing the wound for 10 minutes with gauze soaked in adrenaline (1:1000) helps in controlling the bleeding. This should be used with caution as there are chances of rebound bleeding once the effect of adrenaline wears off. There is also a risk of avascular necrosis.

7. For nasopharyngeal bleeding, Tranexamic mouth wash can be done twice daily. The solution is prepared as 5 grams of Tranexamic acid in 50mL of warm water.
8. A systemic anti-haemorrhagic agent like Etamsylate and fibrinolytic antagonist like tranexamic acid can help prevent bleeding
9. Bleeding in large quantities that cannot be controlled by these modalities might require a surgeon's intervention.

Management of excessive exudates at home

1. Identify the cause of excessive exudate. If excessive exudate is due to infection, it should be treated with local and systemic antibiotics
2. Peri-wound skin should be protected with emollients as exudates can cause peri-wound skin maceration
3. Additional cotton pads can be used to absorb the exudates. The number of pads will depend on the soaking of external pads and bandage.
4. If exudates are not controlled by additional pads consider the use of absorptive dressing such as charcoal dressing, Hydrofiber dressing and alginate dressing if affordable.
5. If affordable consider the use of Negative Pressure Wound Dressing (NPWD) with a suction apparatus at home.

Management of maggot infestation

Maggot infestation happens when the wound is left open and not cared for regularly. So, it is very crucial to reemphasize the importance of cleaning the wound regularly and covering the wound with dressing during every homecare visit.

Different methods in maggot removal:

Ensure the availability of hot water in a small vessel to kill the maggots upon their removal.

Mechanical removal and irrigation: Maggots present in the shallow area can be mechanically removed with a forceps or a damp gauze and the wound irrigated with saline.

Suffocation: Maggots require oxygen to survive. So, maggots can be suffocated to death by applying paraffin ointment or three paraffin gauzes over the wound bed to block air circulation for 24 hours. Dead maggots can be manually removed or they will be broken down by the macrophages and subsequently washed during the regular wound care. Metronidazole powder can be added in the wound bed before applying paraffin gauze to inhibit the growth of anaerobic organisms.

Hide and seek technique: Maggots are photophobic. They tend to hide into the crevices when exposed to light. So, a gauze or pad can be used to close the wound bed for 30 to 60 seconds. This encourages the maggots to move back to the wound bed and they can be quickly removed with a forceps or a moist gauze.

Using turpentine oil(45,46): Turpentine should be used with great caution as it can cause skin burns. It can be used to remove maggots hiding deep inside the wounds. A gauze piece soaked with 2mL of turpentine oil is placed on the wound bed. It is then covered with a large pad for about 5 minutes. The smell of the turpentine will force the maggot to exit from the deeper areas of the wound. They can be picked up with the help of forceps and dropped into the hot water tub.

Nutritional support for patients with chronic ulcers

Having a chronic ulcer increases the nutritional demand of the patient. On average, the calorie requirement patients with chronic ulcers is 30 to 35 cal/kg/day and the protein requirement is 1.5g/kg/day. (Refer nutritional table mentioned below to prepare a diet plan for a patient with a chronic ulcer)

Food	Amount*	Calorie	Protein
Cooked White Rice	1 Cup	170	4.4g
Dal	½ Cup	100	7g
Soya chunk	45g	160	24g
Vegetables (Dry)	1 Cup	150	5.2g
Dosa	1 No	125	2.51g
Idly	2 No	150	3.2g
Chapati	1 No	120	3.1g
Upma	1 Cup	270	3.4g
Raggi (Uncooked)	50g	170	4g
White bread	2 No	170	5.2g
Egg	1 No	74	6.29g
Mutton curry	3/4th Cup	260	18g
Chicken curry	3/4th Cup	240	22.4g
Fish	100g	206	22g
Milk	1 Cup	146	7.8g
Black tea	240 mL	2	0g
Black coffee	240 mL	2	0.28g
Sugar	1 teaspoon	16	0g

*1 cup = 200mL, 1 teaspoon= 5g

DEATH CARE AT HOME

What to do at the event of death?

Signs of death:

- Absence of spontaneous respiration
- Absence of cardiac activity
- Pupils dilated and fixed

In a clinical setting, a registered medical practitioner is required to confirm and declare death, nurses are not authorized to do that. But when the death occurs at home, the practice of confirming death is different in different states. It will be prudent to follow the policy of the state when such an event occurs.

General guidelines:

- No matter how much the preparation or how much ever expected the death was, death, when it occurs, is always painful. It is very important to give time and space to the family to grieve over their loved one.
- Record the time of death, nature of death, who was present and details of death confirmation in patients case sheet.(47,48)
- While performing post-death care discuss patient and family preferences and local cultural practices to be followed.(48)
- Ensure that privacy and dignity is provided to the deceased and the family while providing death care.
- If preferred involve the family in providing post-death care to the patient.

- If death care is provided by the nurse, document the same in patients' case sheet.
- The members of the homecare team should wear appropriate personal protective equipment(48) and follow standard precautions while providing death care. If there is a potential source of infection advise the family caregivers to wear PPE. (Refer the chapter on Standard precautions)
- If there are any oral secretions turn the patient to the side and drain the secretions.
- Eyes should be closed by applying light pressure for 30 seconds(48)
- Remove all internal devices like urinary catheters, nasogastric tube and intravenous catheter and document them in patients case sheet.(47) Secure absorbent cotton pads with adhesive tape on the puncture site and wound to prevent leakage and soiling.(48)
- Make the deceased lie supine and straighten all the joints. When rigor mortis sets in manipulating the joints becomes difficult hence all the joints should be straightened early.
- Place a pillow under the head. This keeps the alignment and keeps the jaw closed.(47)
- Since the final bath is included as one of the last rites of the deceased discuss with the family about giving bath to the deceased
- As the sphincter relaxes there may be leakage of urine and feces, placing absorbent cotton pads will prevent soiling.

- Shaving after death is not recommended as it can cause bruising.(48)
- Keep the jaw closed by placing a towel roll under the chin(47) or by preparing a jaw strap with a bandage tied loosely around the head.(48) If the strap is too tight it can leave pressure marks.(47)
- Ensure that the patients' belongings are handed over to the patients' family and document the same.
- Offer support to the family through quiet and compassionate presence, active listening and gentle touch.
- Plan for bereavement support visits and document the same in the case sheet.

Care of Patients in Special Circumstances

Ascites Tapping or Peritoneal paracentesis

Definition: Peritoneal paracentesis is a surgical puncture of the peritoneal cavity to facilitate drainage of ascitic fluid.

Purpose:

- For therapeutic removal of fluid when distension is pronounced or there is associated distress.

Contraindications:

- Marked bowel distention (correct distension first, using NG suction or rectal tube decompression).
- Previous abdominal surgery (scar near the proposed needle insertion site).
- Severe thrombocytopenia (platelet count < 50,000).
- Clotting abnormalities
- When the patients' general condition is poor

General instruction:

1. Discuss with the physician about the condition of the patient and assessment findings and seek physician's advice regarding the need for the procedure
2. It is prudent to perform the first tap in an institutional setting

Equipment:

1. Sterile tray
2. Sterile gauze
3. Sterile pad
4. Surgical Spirit and Povidone-iodine
5. 1% lidocaine
6. 5ml syringe with
7. 21 or 22 gauge 1 1/2" needle
8. 18-20 gauge 1 1/2 "
9. PPE
10. Disposable Ascitic tapping set/ Blood transfer tubing
11. Centre holed sterile towel/Disposable drape
12. Disposable container
13. Adhesive tape
14. 1 % Sodium hypochlorite solution

Pre-Procedure assessment:

Assess the general condition and vital signs

Physical Examination: The presence of ascitic fluid can be assessed by checking for "shifting dullness." In general, patients

must have at least 1500 mL of fluid to be detected reliably by this method. It may be difficult to identify small volume ascites in obese patients. In such cases, ultrasound marking may be required.

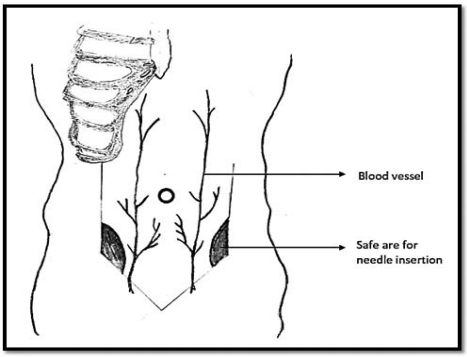


Figure 37: Identifying puncture site for ascitic tapping

Procedure:

Action	Rationale
1. Explain the purpose, risks, benefits and steps of the procedure and obtain informed consent.	• To gain the cooperation of the patient
2. Check the patients' history for hypersensitivity to the local anaesthetic	• To prevent an anaphylactic reaction
3. Have the patient empty the bladder	• To reduce the risk of bladder injury and to promote comfort to the patient during the procedure
4. Assemble materials and prepare a sterile field	• To prevent infection
5. Place the patient supine at the edge of the table with the trunk elevated 45 degrees.	• The ascitic fluid accumulates in the flank in supine position with trunk elevated at 45 degrees

6. The entry site can be in the left or right lower quadrant between the umbilicus and the anterior superior iliac spine or the patient's flank, depending on the location of the fluid as determined by percussion of fluid wave.	• Right or left lower quadrant between the umbilicus and the anterior superior iliac spine is the safest side as the risk of injuring the intra-abdominal organs is less.
7. Be sure to avoid old surgical scars	• The bowel may be adherent to the abdominal wall in case of pervious surgeries
8. Wash your hands and wear sterile gloves and other PPE	• To prevent infection and contact with the body fluid
9. Clean the puncture site from inside to outside in circular motion with povidone iodine followed by surgical spirit. Use one gauze for each motion.	• This technique removes the microbes from the centre towards the periphery.
10. Drape the site with the centre holed sterile towel or other disposable sterile drape	• To prevent contamination of site and hands
11. Anesthetize the skin over the insertion site with 1% lignocaine using a 5 ml syringe and a 22-gauge needle, then anesthetize down to and including the peritoneum.	• To numb the area so that the procedure can be performed with minimal discomfort
12. Attach the blood transfusion tubing to 18-gauge needle. Cut the collection chamber of the transfusion tubing out and connect the distal end of the tubing to the drainage bottle. (Perform this with the assistance of another person to ensure that there is no contamination)	• To prevent spillage of ascitic fluid when the puncture is being performed.

13. With the needle mounted to the tubing, puncture the anesthetized skin. Keeping the needle perpendicular to the abdominal wall, advance the needle slowly until fluid flows freely into the tube. There will some resistance as the needle advances through the fascia.	• Keeping the needle perpendicular is important as the aim is to reach well into the peritoneal cavity where the fluid is accumulated. Angling the needle may result in the bevel of the needle remaining with in the subcutaneous fat or muscle resulting in interrupted flow or no flow of ascitic fluid.
14. Therapeutic tapping is continued until the patients' distress is relieved while monitoring the vital signs of the patient. Nursing Alert: When to abandon the procedure? ➢ Blood pressure falling from the baseline ➢ Decrease in pulse volume ➢ Change in the level of consciousness and sensorium of the patient ➢ Haemorrhagic tap	• Monitoring the vital signs is very important as the complications of tapping such as hypotension should be detected early. • These complications can be life threatening in some patients hence the procedure should be abandoned if these complications are observed.
15. Once when the procedure is completed, gently withdraw the needle while sealing the puncture site with sterile gauze.	• The risk of injury to the intra-abdominal organs is more when the ascitic fluid has been drained hence the needle should be handled gently

16. Cover the area with sterile cotton pads and secure it with the adhesive tape. This dressing can be removed after 12 to 24 hours if there is no fluid leak. 17. If there is persistent leak sterile dressing is continued until the leak seals on its own. 18. If there is excessive leakage an ostomy bag can be applied to collect the leaking solution until sealing happens. In very rare circumstance patient may require single suturing.	• Some patients might have ascitic fluid leak through the puncture site which will be absorbed by the sterile pad.
19. Ensure that the patient lies supine for the next half hour before ambulation	• The tendency for giddiness after the procedure is more hence the patient should not be ambulated immediately after the procedure.
20. Fluid drained should be treated with 1% sodium hypochlorite solution and discarded	• To prevent contamination and reduce the chance of infection
21. Discard the gloves wash your hands	• To prevent cross infection
22. Record BP and pulse once again before leaving patients' home	• To ensure that the patient is stable after the procedure
23. Advice the patient to take bath after 48 hours.	• To reduce stress on the puncture site
24. Document the procedure. a. Volume drained b. Colour of the fluid c. Adverse events d. Vital signs	• To maintain the continuity of care

Can abdominal paracentesis be performed by a home-care team?

Traditionally abdominal paracentesis was performed by doctors at in-patient settings. But recently several studies have explored the efficiency of nurse-led abdominal paracentesis at daycare settings. These studies found that the nurse-led abdominal paracentesis reduced the cost and they are safe(49–52). A similar approach has also been expanded to the community-based hospice settings(51). Another study explored the safety of training endoscopic assistants to perform abdominal paracentesis and found that the procedures are safe and efficient(53). These procedures were performed without ultrasound guidance. Though ultrasound guidance is recommended to reduce the risk of bleeding and to improve the success rate of the procedure this study showed that, even in the presence of thrombocytopenia and elevated prothrombin time the abdominal paracentesis performed by endoscopic assistants without ultrasound guidance is safe and efficient(53). In Kerala's community-based palliative homecare system abdominal paracentesis is very often performed by a trained palliative care nurse at patients' home. The nurse after the assessment will discuss the finding with the duty medical officer after which as per the direction of the medical officer the abdominal paracentesis will be performed under aseptic precautions. This is done to reduce the cost and distress associated with transporting the patient to an inpatient setting. We have found that this approach to be safe and cost-effective.

CARE OF PATIENTS WITH OSTOMIES

Care of patient with colostomy

Ostomy and Stoma:

Though the words ostomy and stoma are used interchangeably they have different meanings. Ostomy is a surgery to create an opening (Stoma) from inside to outside. Whereas, a stoma is an opening that connects a body cavity to the outside environment. Ostomies based on their purpose, location duration and number of stomas are classified into several types.

Based on purpose:

- Input ostomies
    - Tracheostomy, Gastrostomy, Jejunostomy
- Output ostomies
    - Ileostomy, Colostomy, Urostomy

Based on the location:

- Ileostomy
- Ascending colon colostomy
- Transverse colon colostomy
- Descending colon colostomy
- Sigmoid colon colostomy

Based on duration

- Temporary (Rectal repair)
- Permanent (Malignancies)

Based on the number of stomas

- Single barrel colostomy (Ileostomy)
- Double barrel colostomy (Loop colostomy)

Characteristic features of different output ostomies based on the location:

Ileostomy:

On average, patients with ileostomy have an output of 500mL to 1300mL and this may be up to 1800mL during the initial postoperative period(54). Since the patients with ileostomy lose lots of water which is mainly absorbed in the large intestine, they are increased risk of developing dehydration and renal stones. Thus, it is recommended that the patients with an ileostomy should increase their water intake by 500 to 750mL. (54) They can also develop electrolyte imbalance as the sodium and potassium loss is more through the ileostomy. Since the ileostomy output has a higher concentration of digestive enzymes, they can easily develop skin excoriations. The stool is liquid and the output is unpredictable so it is important that the patient always wears the pouch.

Ascending colostomy:

Present on the right side of the abdomen. The output is acidic in nature with a higher concentration of digestive enzymes. The stool is liquid in nature with unpredictable output hence it is recommended that the patients always wear the pouch.

Transverse colostomy:

The stool in transverse colostomy is liquid to semi-formed. Since the output is unpredictable it is recommended that the patient always wears the pouch.(55) Since transverse colostomy is performed in the upper abdomen concealing the stoma and the pouch can be challenging. The output of transverse

colostomy has fewer digestive enzymes hence skin excoriation may occur if there is leakage or if there is no skin protection.

Descending colostomy:

The stoma is located in the lower-left abdomen. The stool in descending colostomy is semi-formed to completely formed. At this point water resorption is complete and there are no digestive enzymes present in the stool. The bowel movement in descending colon colostomy can be mostly predicted. Occasionally there may be spilling of stool in between evacuation hence it is safe to wear a pouch.(55) Irrigation of stoma is possible with descending colon colostomy.

Sigmoid colostomy:

Patients with sigmoid colostomy have a better quality of life compared to other ostomies. This is because the stool is fully formed and completely devoid of digestive enzymes. The bowel movement can be predicted. Colostomy irrigation is very much possible with a sigmoid colostomy. Some patients may prefer to evacuate without irrigation. Once the colon is loaded with a considerable amount of faecal matter above the stoma, reflex will naturally set in and the bowel movement will begin. Some patients may require mild stimulation by drinking tea, coffee, warm water or juice.(55) Once the evacuation is complete these patients need to wear only a small protective pouch.

Problems faced by patients with colostomy:

Risk factors for stoma complication:

1. Height of stoma less than 10mm from the surface of the abdomen
2. Co-morbidities: Diabetes, Obesity and bleeding disorders
3. Use of tobacco products by the patient

Peristomal skin problems:

Normally the peristomal skin should have the appearance and the texture similar to the abdominal skin. Peristomal skin problems are common among patients with stomas. When there is peristomal skin irritation it is crucial to identify the cause. The cause could be chemical, mechanical or microbiological origin. (56) Sometimes these causes may overlap each other. The proteolytic enzyme coming in contact with is intact skin is one of the major sources of skin irritation. The right size of skin barrier around the stoma and application of barrier cream protect and prevent skin irritation. Karaya powder mixed with egg white is very effective in treating skin excoriation. Some patients can be allergic to pouching products. Choosing the right pouching system is crucial in such cases. The mechanical injury occurs while removing the skin barrier. They are characterized by blisters and skin pealing and abrasions. Teaching the patient and the caregivers to gently push the skin around the barrier will prevent mechanical injuries.(57) Microbial infection is common among patients with diabetes and immunosuppressants. The moisture around the stoma predisposes them to fungal infection. These are characterized by maculopapular rash and satellite lesions. There may be erythema and itching.(56) The patients should be advised to pat dry the peristomal skin and dust antifungal powder to treat the fungal infection.

Pyoderma gangrenosum:

Pyoderma gangrenosum is a relatively rare problem in patients with a stoma. It is characterized by inflammatory, painful, ulcerative cutaneous lesions.(58) It is usually seen in patients with inflammatory bowel disease. Females are more affected than males. The diagnosis is made clinically based on the appearance. Treating this condition is often difficult and requires a multidisciplinary team. The management involves local wound

management with moisture retentive dressing, systemic steroids and antibiotics.

Dehydration:

Except in sigmoid colon colostomy and descending colon colostomy, there is water loss through other stomas. These patients are at the risk of dehydration if they do not consume adequate fluids. On an average, patients with colostomy are required to drink 1.5 to 2L fluid per day.(58,59) It is good that they always carry water with them and 'drink little and drink often'

Stomal necrosis:

It is an early complication following surgery. Occurs due to venous congestion and arterial insufficiency.(54) The normal colour of the stoma is bright pink or deep red. Necrosis is more common in those who are obese. A stoma turning blue is a sign of ischemia. When ischemia is suspected the patient should be monitored as they may require surgical revision. A pale stoma is indicative of anaemia.

Stomal bleeding:

Minor bleeding is common in the immediate post-operative period. It can happen due to the vigorous handling of the stoma. Lacerations while changing the pouch and accidental injuries can cause bleeding.(60) In patients with portal hypertension and varices, delicate handling of the stoma is important. Minor bleeding can be managed by compression with ice wet gauze(58) and the application of sucralfate powder. If bleeding is not controlled with conventional practices, they will require the surgeon's attention and cauterization.

Stomal retraction:

Stomal retraction is defined as stoma that is 0.5cm or more below the surface of the skin.(61) It can affect pouch adherence,

cause leaking and lead to stenosis and obstruction. Patients who are obese, patients with a thick abdominal wall and initial stoma height less than 10 mm have more risk of developing retraction. Retracted stoma due to poor adherence can cause skin complication.(61) Convex pouch system helps in managing stomal retraction.(60) Ostomy belt or binder in combination with the convex pouching system can straighten the skin folds and enhance adherence of the skin barrier. When convex pouching system fail, recurrent skin complication due to retraction is indicative of stoma revision.(61)

Stomal prolapse:

Stoma prolapse is defined as the telescoping of the stoma more than the normal length. Though it is usually not painful it can cause psychological disturbance to the patient.(60) A large abdominal opening, poor bowel fixation, weak abdominal muscles, increased intraabdominal pressure, pregnancy, obesity can increase the chances of prolapse.(61) Prolapse is more common in transverse loop colostomies and descending colon colostomies. The prolapsed stoma can cause problems with pouch adherence. The edema due to prolapse can result in poor perfusion and ischemia. Uncomplicated prolapse without ischemia can be managed with hyperosmotic agents such as sugar(60) or honey to reduce the edema followed by manual reduction by a trained person. This can be further followed up with the application of binder to prevent prolapse. A complicated prolapse will require surgical intervention.(60)

Parastomal hernia:

It is one of the common complications following ostomy. Some studies observe that the incidence of parastomal hernia is about 78%.(62) In parastomal hernia, the bowels or greater omentum protrude through the abdominal wall around the stoma. It is more common in elderly individuals and obese indi-

viduals with stoma.(63) The problems with parastomal hernia include visible deformity, problems with pouch adherence and skin problems. This severely affects the life of patients with parastomal hernia. Since skin problems are common in patients with parastomal hernia use barrier ointment and flexible flange that better accommodates with the shape distortion around the stoma is recommended. Using a hernia support belt helps patients to maintain their regular activity and also improves the adherence of stoma bags. Most patients with parastomal hernia can be managed conservatively. Surgical intervention is necessary when there is obstruction, incarceration, recurrent pain, poor body image and unmanageable skin problems due to poor pouch adherence.(62,63)

Stomal stenosis:

Stenosis is defined as the narrowing of the stoma. Narrowing of the stoma can cause difficulties in the expulsion of faecal matter. Stenosis can occur as a result of retraction, ischemia, infection, inflammation(60) and poor pouching system. The digital examination will reveal the depth of mucosal stricture.(64) Mild stenosis can be managed by avoiding insoluble dietary fibres that can create hard lumps and increasing fluids. Catheter dilation by an expert can be performed. Repeated dilatation can worsen the stenosis as repeated trauma can result in fibrosis. (65) Severe stenosis producing abdominal cramps and forceful expulsion of contents will require surgical correction.

Constipation and Diarrhoea:

Constipation in patients with an ostomy is usually due to inadequate water intake.(55) Consuming insoluble dietary fibres can cause temporary obstruction and cramps. Usually, constipation can be managed by increasing fluid intake and soluble dietary fibre. An inactive stoma for 4 to 6 hours along with abdominal cramps will require medical attention. Some patients may re-

quire laxatives to manage constipation. It is important to differentiate diarrhoea from loose stools that are normally seen in stomas that as more proximal.(55) Diarrhoea could be due to various causes ranging from diet, stress and medications. Sometimes raw fruits, raw vegetables, fruit juices and milk can temporarily produce loose stools and they resolve on their own. Diarrhoea that is of infective origin will require medical management. Since patients with a stoma tend to lose more electrolytes, hydration and replenishing electrolytes are crucial when the patient has diarrhoea.

Colostomy pouch:

Colostomy pouches are basically bags that collect stool from the colostomy. In addition to acting as a reservoir, the pouch protects the peristomal skin and prevents the escape of bad odour. It is very important that the patients are empowered in managing the pouch system to have a good quality of life with a stoma.

Types of Pouches:

- One-piece drainable pouch
- One-piece closed pouch
- Two-piece pouch system
- Stoma cap

Figure 38: Drainable pouch and flange for two-piece system

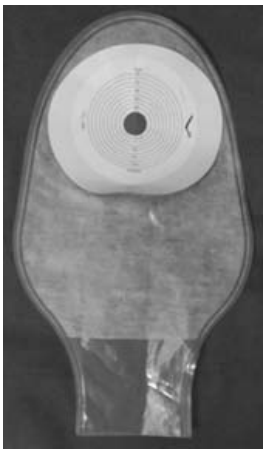


Figure 39: Single piece drainable pouch

There are disposable and reusable pouches in the two-piece system. For patients with retraction and skin folds convex flange systems are available for better adherence.

Changing the pouch and skin barrier:

It is very crucial to avoid mechanical injuries during pouch and base plate change. The safe way to remove the skin barrier is to push the skin gently around the stoma while lifting the skin barrier off.(56) Once the barrier is removed, clean the area with warm water and pat dry the area. Once the area is dry new skin barrier and pouch can be applied. Do not try to remove the remaining adhesive from the skin as it may cause skin irritation. While applying the skin barrier the circumference of the stoma should be correctly measured and the pouch opening should be cut accordingly. The opening should only be 3mm larger than the stoma to reduce skin exposure.(55) The pouch should be emptied when it is 1/3rd full to prevent leaking.(56) A reusable bag can be washed with soap and water and dried in the shade.

- For ileostomy, a one-piece drainable pouch should be changed once in 1 to 3 days based on the need. For a two-piece drainable pouch, the base plate should be changed twice or thrice a week as per the need and the pouch is to be changed every 1 to 3 days.(64)
- In the case colostomy, a one-piece closed pouch will require 1 to 3 changes a day. For two-piece pouch system, the base plate needs to be changed 2 to 3 times a week whereas the closed pouch requires 1 to 3 time changes a day.(64)
- In the case of a urostomy, a one-piece pouch system requires change once in 1 to 3 days. In the two-piece pouch system, the base plate is changed 2 to 3 times a week whereas the pouch is changed once in every 1 to 3 days(64)

Diet for patients with colostomy:

A person with a stoma does not require a special diet. Like any other individual, they require a healthy and balanced diet.(58) Some dietary products can be odour producing and gas-forming which the patient may have difficulty managing. The patients learn themselves over time to adapt to different dietary foods. It is important to avoid time release and enteric-coated tablets as they are not absorbed completely. When the patient consumes gas-producing food substance the 'lag time' for flatus to pass out of ileostomy is 2 to 4 hours from the onset of eating. For distal colostomy, it is 6 to 8 hours.(54)

The following are some food items and their effect on patients with ostomies.

- Cabbage, garlic, beans and fried food may cause odour
- Corn, Nuts, cabbage and vegetable peeling may cause hardening of stool
- Coffee, Fruits and fruit juices and oily food may cause loose stools
- Mint, Coriander reduces the smell

Travel, work, dressing and sports:

Patients with a colostomy can travel like any other person. They may need to carry extra bags if they need immediate change. Patients can engage in routine works that do not involve heavy lifting and strenuous exercise as an increase in intra-abdominal pressure can cause the stoma to prolapse or hernia.(16) The pouch can be comfortably worn underneath the clothes and is easily concealed. It is safe to avoid contact sports that can cause injury to the stoma.(64)

Colostomy Irrigation:

Colostomy irrigation can be performed with descending colon colostomy and sigmoid colostomy.(64) Irrigation can improve the patient's quality of life when the patient has adequate time and place to perform irrigation.(58) Irrigation should be tried 3 weeks after the surgery(66) after discussing it with the surgeon. It is up to the patients' convenience to decide whether to irrigate or naturally evacuate the bowel contents. If the patient decides to naturally evacuate without irrigation it is safe to wear a pouch at all times. Usually, it is possible for these patients to develop a predictable bowel evacuation over time depending on the bowel routine they had before the stoma was created. (55) The first few irrigations are always performed in an in-patient setting as there is a risk of vagal stimulation.(64)

Points to remember while performing irrigation:

1. Irrigation should be performed at the same time of the day to achieve habit formation.(64) This time should be according to the convenience of the patient. (67)
2. It can be performed every 24 hours (or 48hours) based on the individual.(64,67)
3. First few irrigations should be done in an in-patient setting where the patient can be trained and complications can be managed if any.(64)
4. It is important to use a cone rather than a catheter for irrigation. Using cone instead of catheter reduces the chance of perforation.(58)
5. It is safe to start with 300 to 500mL of tepid water and then slowly increase till no breakthrough is seen.(64)
6. The maximum volume that can be infused in 1500mL. (64,67)

7. In some patients, during initial days second irrigation may be required to prevent breakthrough.(64)
8. The water should run in slowly at the rate of 10 to 20 minutes.(64) A rapid infusion can cause cramps and nausea.
9. 15 to 30 minutes should be allowed for evacuation(64)
10. Effectiveness can be achieved only by providing adequate time and good relaxation
11. Only when nil breakthrough is achieved for 24 hours then the irrigation of once in 48 hours can be tried.
12. A warm drink before the irrigation can improve its effectiveness.

Figure 40: Irrigation bag with cone & Irrigation sleeve

The procedure of irrigation:

1. Choose a time that is most convenient to the patient and the time should be such that the patient can perform irrigation at that time every day.
2. The irrigation system should be hanged at the shoulder level where the patient sits upright in the toilet.
3. Wear the irrigation sleeve
4. Expel all the air from the tubing and clamp the tubing.
5. Lubricate the tip of the cone with water-soluble lubricant gel.
6. Snugly fit the cone onto the stoma, remember not to push too much into the stoma. A malleable cone can be more comfortable.
7. Open the clamp and release the tepid water into the stoma at the rate of 10 to 20 minutes.
8. Once the water has emptied into the stoma place the cone at the stoma for additional 15 seconds.
9. Remove the cone.
10. Give 15 to 30 minutes for complete evacuation
11. Once the evacuation is complete the sleeve can be washed with water and dried in shade.

Caring for the psychological needs of the patient:

In a palliative care setting, an ostomy is usually performed from malignant causes. A malignant diagnosis in itself causes severe psychological distress to the patient. At this point of juncture adapting to a stoma can be adding on the pre-existing psychological distress. Though an ostomy can be lifesaving surgery these patients will require education, constant motivation, supportive counselling and care to cope with this major lifestyle

modification.(68,69) Concerns such as fear of leakage, physical problems, body image change, embarrassment due to odour, noisy flatulence and privacy need to be individually addressed in all patients to improve their quality of life.(69) Having a colostomy should not interfere with sexual activity. Counselling the patient and the spouse, exploring questions they might have, fears and hopes is very important in improving the quality of life of the patient and the family.(69,70) Physical problems such as skin irritation and excoriation affect the quality of life of patients(71) increasing their distress, so impeccable assessment and prompt management of physical problems will lead to a better quality of life and improved psychological wellbeing. Hope is powerful, it is found that in patients with colostomy patients with hope are able to cope better and are able to have a better quality of life.(71)

Care of patients with tracheostomy

Tracheostomy is a surgical opening made in the trachea to facilitate breathing. The tracheostomy can be both temporary or permanent in nature. In a palliative care setting, the temporary tracheostomy is usually rare.

Indications of tracheostomy:

1. Prolonged intubation/ventilator support and weaning
2. To effectively manage secretion
3. Upper airway obstruction (E.g. Malignant conditions)
4. Airway protection (E.g. Neurological conditions)

Type of tracheostomy tubes:

Tracheostomy tubes are universal. All tracheostomy tubes have the 'Jackson curve' which is a 'J' shaped curve perfectly angling into the trachea. They come in different sizes for different age groups and different built of the patient. Some tracheostomy may have additional features such as cuff and fenestration. The tubes may have a single lumen or double lumen. They may be reusable or single-use tubes. Based on the manufacturer and the period of usage they are made from PVC, silicone and metal.

Changes in the airway following tracheostomy:

Thickening of tracheal secretions:

When tracheostomy is performed the upper airway is completely by-passed, thus the person loses the warmth and humidification provided by the upper airway to the inhaled air. Absence of warmth and humidification results in the thickening of tracheal secretions that are difficult to remove.

Increased risk of infection:

The upper airway not only provides humidification and warmth but also the filtration of inhaled air. Losing this protective mechanism predisposes the person to an increased risk of pneumonia.

Communication:

A person with tracheostomy will often have difficulty communicating as the air does not reach the vocal cords but bypassed through the stoma

Loss of smell and taste:

As the air does not pass through the nose patients with tracheostomy have a diminished sense of smell. Since taste is closely associated with smell the patients also suffer from diminished taste sensation.

Complications following tracheostomy:

Immediate complications:

1. Haemorrhage
2. Aspiration
3. Air embolism
4. Hypoxemia/Hypercarbia

Early complications:

1. Haemorrhage
2. Pneumothorax
3. Accidental decannulation
4. Stomal infection
5. Dysphagia

Late complications:

1. Tracheomalacia
2. Tracheoesophageal fistula
3. Granulation tissue formation
4. Aspiration
5. Pneumonia
6. Dysphagia

Problems faced by patients with tracheostomy and its management:

Cough:

Cough can be due to excessive secretions, thick secretions and airway dryness. The first line of management of cough is to hydrate the patient well. Hydration helps in loosening the thick secretions and prevent the dryness of mucosal airway. If there are excessive secretions, suctioning them is helpful. Suctioning should be done carefully and prudently. If the excessive secretion is due to infection antibiotic use is warranted.

Secretions:

Secretions are a normal response of the airway to a tracheostomy. The presence of excessive secretions causes discomfort to the patient. If the secretions are thin and loose, they can be coughed out by the patient himself with or without chest physiotherapy. Thick yellow or green discoloration of secretions may be suggestive of infection and will require antibiotics. Steam inhalation can be used to reduce the thickness of the secretions. Temperature more than 41^{0} C can damage the airway mucosa, so one should maintain adequate distance between the stoma and hot steam. Suctioning can be performed to remove exces-

sive secretions. Suctioning should not be done for more than 10 seconds. Thick mucous plug within the inner cannula can be washed with running water.

Communication:

Loss of voice poses a significant challenge to patients with tracheostomy. Losing the voice, difficulty in communicating and not being understood clearly by the family and the professionals leads to frustration. Helping the patient to communicate well early helps in minimising these effects. Communication can be achieved in patients with tracheostomy without complete upper airway obstruction.

1. Closing the tracheostomy opening with a finger while speaking
2. Speaking valve (Passy-Muir Valve)

Both techniques work by forcing the air to pass through the upper airway by blocking the tracheostomy opening. In the finger method, the patient is asked to inhale and close the tracheostomy opening with the finger and speak, this forces the exhaled air through the vocal cords into the upper airway producing voice. A speaking valve is a one-way system that opens during inspiration allowing air to enter through the tracheostomy and closes on expiration which forces the exhaled air through the vocal cords and upper airway. Patients may experience fatigue while using a speaking valve because of the effort that is required to push the air into the upper airway. The presence of secretions in the airway will make speaking difficult. So, removing the secretions before speech training is recommended.

Eating and nutrition:

Patients with tracheostomy have a decreased sense of smell as the air is breathed through the ostomy than through the nose. Since taste and smell are closely associated these patients also

suffer from poor taste. One way of overcoming this problem is 'Polite yawning' or NAIM (Nasal airflow inducing manoeuvre). This is achieved by advising the patient to repeatedly perform yawning with the lips sealed. Lowering the jaw and tongue creates a negative pressure in the oral cavity forcing air into the nose, stimulating the olfactory epithelium. This can be recommended before eating to smell and taste and while entering a new room.

The person may have dysphagia, aspiration and vomiting while eating. Removing tracheal secretions by suctioning or by chest physiotherapy before eating is helpful. This prevents cough while eating as coughing while eating can induce vomiting. Other measures that can help is to sit straight while eating, chewing thoroughly before swallowing and small quantities per bite (<5mL). In patients with severe aspiration problems nasogastric or gastrostomy feeding is recommended.

Body image concerns:

Psychological and self-esteem issues following tracheostomy are closely associated with personality traits. Patients suffer from social isolation and role reversal in the family. Sexual intimacy and physical contact concerns affect not only the patient but also the family dynamics. These patients will require repeated assurance and reassurance. Reducing the problems associated with a tracheostomy is crucial in improving the quality of life. Teaching the patient how to protect the opening and reducing the secretions and communication training will promote confidence and improve social interaction. Counselling the spouse and the patient about sexual issues is important as tracheostomy, though does not physically interfere with sexual function, psychologically it has a greater influence on sexual function.

Parts of tracheostomy tubes:

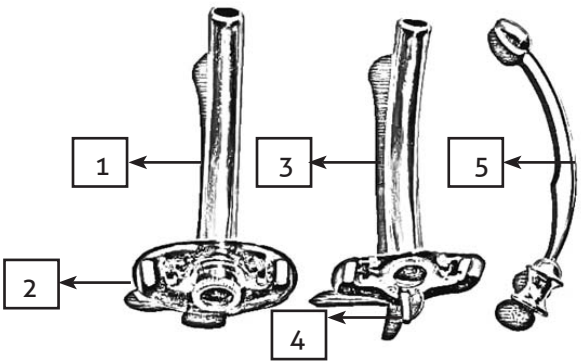


Figure 41: Metal tracheostomy tube

1) Outer tube 2) Neckplate 3) Inner tube
4) Inner tube lock 5) Obturator

Care of tracheostomy patients:

Maintaining airway hydration:

Covering the tracheostomy inlet with a transparent moist gauze can offer some humidification but the gauze piece should be repeatedly moistened. Plenty of oral fluids is crucial in maintaining the humidity of airway mucosa. Steam inhalation is helpful. Temperature more than 41^0 C can damage the airway mucosa, so one should maintain adequate distance between the stoma and hot steam. Sterile saline sprays are available that can be repeatedly sprayed through the stoma to maintain the humidity of the airway.

Tube care

While caring for the tube one should remember never to remove the outer tube. Only the inner tube should be removed. After removing the inner tube, the tube should be washed with running water. Once the secretions are removed with the running water the inner tube is to be boiled for 20 minutes, cooled down on the surface of a clean towel or pad and reinserted.

Skincare

Self-care of tracheostomy should be performed in front of the mirror. The peristomal skin should be cleaned with warm saline and a new Vaseline gauze should be applied between the neck plate and the skin to prevent injury. It is important to ensure that there is only minimal displacement of the tube while placing a Vaseline gauze between the neck plate and the skin. Early signs of peristomal skin infection are redness, swelling warmth and tenderness.

Tie changing

Tie or a Velcro strap is used to hold the outer tube in place. Tie changing is better avoided for a few days if the patient has coughing tendencies to prevent accidental decannulation. There should be one fingerbreadth gap between the tie and the neck.

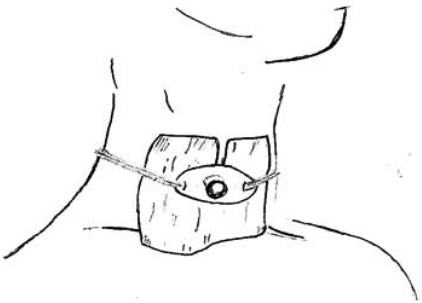


Figure 42: Vaseline gauze placed between the neck plate and the skin

Tracheostomy suctioning:

Suctioning is recommended only if there are excessive secretions that are causing discomfort to the patient. Suction pressure should be set between 100-120mmHg. Advice the patient to take 2 to 3 deep breaths before starting the suctioning. The suction catheter should be inserted only for about 6 inches or until the point of resistance. Suctioning should not be performed for more than 10 seconds. Use rotatory motion while pulling the tube out while the suction process is on. Clear the suction tube in-between suctions with sterile normal saline. Encourage the patient to take several deep breaths following the suction and if oxygen is available hyperoxygenation can be done following suctioning. In the absence of a suction machine, tracheostomy suction can also be performed with a 10mL syringe and an infant feeding tube.

Care of patients with lymphedema

Lymphoedema is defined as the accumulation of lymphatic fluid within the interstitial space due to an imbalance between the production and transportation of interstitial fluid resulting in edema. It usually presents as swelling of one or more extremities along with the swelling of the corresponding trunk. Lymphoedema can cause severe physical and psychological distress. Though lymphoedema is a chronic, incurable condition, it can be managed effectively and its effects can be alleviated. When ignored, lymphoedema can progress into a large swelling and become difficult to manage, resulting in a disarticulation.

Classification of lymphoedema:(72)

Based on the aetiology lymphoedema is classified into primary lymphoedema and secondary lymphoedema.

Primary lymphoedema:

Primary lymphoedema is due to congenital defects in the lymph conduction system. E.g. Milroy's disease

Secondary lymphoedema:

It is an acquired lymphoedema. It happens in response to damage to the lymph nodes or lymphatic vessels (E.g. Lymph node dissection) or due to functional deficiency (E.g.Dependent lymphoedema).

Causes of secondary lymphoedema:

- Surgery (Lymph node dissection, scaring)
- Trauma (Circumferential wound, burns)
- Malignancy (Lymph node infiltration, Tumour compression)
- Infection (Filariasis, Lymphadenitis)

- Venous disease (Chronic Venous insufficiency)
- Immobility (Dependency edema)

Risk factors for developing lymphoedema:

Since there may be a delay of several years between the causative event and the onset of lymphoedema, it is important to identify the patients at the risk of developing lymphoedema, so that they are monitored routinely and taught self-care. When lymphoedema is identified early there are surgical options available to prevent a lifelong adjustment and lifelong treatment in certain cases.(73)

Risk factors of upper limb lymphoedema:

True risk factors of upper limb lymphoedema include removal of axillary lymph nodes, a BMI that is consistently greater than 25, radiation to axillary region and cellulitis following surgery (73) that results in the destruction of tissue surrounding the lymph nodes and scaring. Other risk factors include the creation of AV shunts, cardiac pacemakers and filarial infection.(72)

Risk factors of lower limb lymphoedema:

Significant risk factors of lower limb lymphoedema include the removal of pelvic lymph nodes, pelvic radiation therapy following surgery and obesity (BMI>25).(74,75) Other risk factors include varicose vein stripping, cellulitis orthopaedic surgeries, immobility and filarial infection especially in Indian context. (72)

Reducing the risk of developing lymphoedema(72):

In reducing the risk of lymphoedema one should understand that the recommendations are based on common sense thinking and physiologic principles. These recommendations are not based on research evidence.

- Maintain optimal body weight
- Keep the nails cut short to avoid injury
- Avoid BP measurement and needle pricks on at-risk side
- Avoid tight-fitting underwear
- Avoid tight-fitting watches or jewellery
- Avoid exposure to extreme cold or heat
- If recommended use compression garments
- Regular exercise and limb elevation
- Periodic circumferential limb measurement in patients who had undergone a mastectomy to detect the changes early

Early signs of lymphoedema:(66,72)

1. A feeling of tightness of clothes, jewellery and sleeves
2. Heaviness, fullness and tightness of affected limb
3. Aching and tiredness
4. Observable swelling or asymmetry with the other limb

Clinical features of lymphoedema:(66)

- Swelling of the affected limb (can be both pitting and non-pitting)
- Heaviness, fullness and tightness of affected limb
- Hyperkeratosis
- Papilloma
- Joint stiffness
- Lymphorrhea

- Positive Stemmer's sign (Inability to pinch and lift the skinfold at the base of the second toe or middle finger)

International Society of Lymphology (ISL) staging of lymphoedema:(73)

ISL Stage 0:

- Subclinical state
- Swelling is not evident but impaired lymphatic drainage is present

This stage may last for several months to years before the swelling becomes evident or more pronounced.

ISL Stage 1:

- Early accumulation of fluid
- Pitting may be observed
- Accumulation resolves with limb elevation

ISL Stage 2:

- Limb elevation alone rarely reduces the swelling
- Pitting is manifest

ISL Stage 2: (Late)

- The limb may not pit due to excessive subcutaneous fatty tissue and fibrosis development

ISL Stage 3:

- Lymphatic elephantiasis
- Pitting is absent
- Skin changes (Hyperpigmentation and warts)
- Increased skin fold

While staging it is important to keep in mind that there may be different stages of lymphoedema in the same limb based on the lymphatic territories.

Assessment of lymphoedema:(72)

Assessment for lymphoedema should begin with a detailed medical history of the patient. In a palliative care setting lymphoedema is usually associated with malignancy. So, the medical history of a patient with lymphoedema should include the status of malignancy, history of treatment which includes surgery, chemotherapy and radiation therapy. Since lymphoedema can occur in patients without any history or treatment related to malignancy other history such as neurological diseases, orthopaedic treatment, vascular problems, immobility and filariasis should be explored. Nutritional assessment is very important as BMI>25 is a risk factor for lymphoedema.

In assessment specific to lymphoedema onset and duration of the swelling with associated pain and fatigue should be documented. Stemmer sign is usually positive in patients with lymphoedema. The inability to pinch and raise the skin fold at the base of the second toe and middle finger is considered as positive Stemmer sign. Other skin findings observed in patients with lymphoedema are Peau d' orange appearance, hyperkeratosis, lymphorrhoea, lymphangiectasia and papillomatosis.

In addition to physical assessment, a thorough psychosocial assessment is crucial in patients with lymphoedema. Coping with the treatment and adherence to treatment strategies will require a lot of resilience as the treatment of lymphoedema is usually lifelong. Exploring psychological issues and support structures available for the patients will enable in choosing an appropriate treatment strategy for the patient and to prevent treatment failure.

Circumferential limb measurement

Circumferential limb measurement is the most widely used technique in measuring limb volume as it is simple and not expensive. Though this technique is prone to errors, when a standard technique is followed the errors can be minimized to a great extent.

Principles of measuring circumferential limb volume:

- The person who made the initial measurement should be the person making all the follow-up measurements to reduce interobserver variations
- The ruler should be placed on the flat surface along the limb rather than on the limb to make markings for circumferential measurement.
- Always use inelastic, non-stretch tape to make the circumferential measurement.
- Both affected and unaffected limb should be measured

Procedure for circumferential limb measurement(72)

Upper limb:

1. Make the patient sit upright on a chair with the affected limb placed on the table. The palm should face down on the table.
2. With a ruler measure the distance between the nailbed of the little finger to 2 cm above the ulnar styloid and mark this point.
3. From this point mark every 4cm all the way up to 2cm below the axilla by placing the ruler along the ulnar aspect of the limb.

4. With an inelastic tape measure the circumference of the limb at each marked point. Ensure that the limb is relaxed while measuring the circumference.
5. Document these circumferences at each point in the patient's assessment chat
6. Repeat the procedure for the other limb

Lower limb:

1. Make the patient sit or stand comfortably with the foot firmly planted on the floor
2. Measure the distance between the floor to 2cm above the middle part of the medial malleolus. Mark this point.
3. From this point, mark every 4 cm all the up to 2cm below the popliteal fossa.
4. If the oedema is present over the knee, make the patient stand or lie down comfortably and continue marking every 4 cm above the knee up to 2 cm below the gluteal crease
5. With an inelastic tape measure the circumference of the limb at each marked point. Ensure that the limb is relaxed while measuring the circumference.
6. Document these circumferences at each point in the patient's assessment chat
7. Repeat the procedure for the other limb

The total limb volume can be calculated from these measurements using spreadsheets. But in resource-limited settings, the circumferential lengths are documented over a period of time and tracked for changes.

Management of lymphoedema:(66,72,73)

Treating a patient with lymphoedema usually requires a multidisciplinary team. The management is broadly classified into

1. Skincare
2. Compression garments
3. Massage
4. Exercise

These are called the 4-cornerstone management of lymphoedema. In addition to these, caring for patients' psychosocial needs is crucial in ensuring adherence to the treatment plan and in protecting patient's mental health.

Skincare:

Since the patients with lymphoedema are prone to develop several skin problems, they will be required to care for their skin meticulously throughout their lifetime.

General skincare recommendations:

- Keep the skin hydrated by applying moisturizers daily
- Avoid soaps that cause dryness
- Protect from insect bites
- Avoid tight-fitting clothes and BP recording in the affected arm
- Avoid injections on the affected arm
- Avoid vigorous rubbing while drying
- Regularly monitor the web spaces and clean the area
- Protect from direct heat and sunlight
- Avoid lifting heavy items

Common skin conditions in patients with lymphoedema and their management:

Dry skin: Dryness can range from mild dryness to severe scaly skin. Break in the skin due to dryness can act as a port of entry for bacteria causing even cellulitis. Soaps usually cause dryness hence moisturizing soap substitutes are preferred.(76) Dry skin can be managed by applying emollients twice daily especially after washing the area to aid rehydration. Emollients also prevent water loss by forming a protective layer over the skin. Low pH moisturizers can not only rehydrate the skin but also deter microbial colonization.(77)

Hyperkeratosis: Hyperkeratosis occurs due to the proliferation of keratin in response to the accumulation of lymphatic fluid. It usually forms brownish or grey patches on the skin. Applying the multilayer bandages reduces the lymph accumulation resulting in the reduction of these patches.(72) To prevent dryness emollients are recommended. Emollients containing salicylic acid or lactic acid or dimethicone can aid in desquamation of hyperkeratotic skin.(76)

Folliculitis: In patients with lymphoedema due to compromised local immunity the infection of the hair follicles is common. Usually, these infections are due to Staphylococcus aureus. It can be managed by applying lotions containing chlorhexidine. (72) Folliculitis when not cared well can result in cellulitis.

Cellulitis: Cellulitis can be prevented to a larger extent by meticulous skincare and reducing congestion.(78) The occurrence of cellulitis can complicate other management strategies of lymphoedema as cellulitis and lymphoedema can become a vicious cycle.(79) It is usually caused by Group A Beta haemolytic streptococcus.(72) Cellulitis when occurs it should be identified and treated promptly. The local signs and symptoms include redness, warmth, tenderness, swelling and pain. It can

also cause lymphadenitis. In severe cases of cellulitis systemic presentations seen are high fever, chills, vomiting and headache.(72)

Management of Cellulitis:

General guidance:(72)

1. Antibiotics should be started as soon as possible
2. Analgesics (Paracetamol or NSAIDs') should be started along with antibiotics for pain
3. Increase the intake of oral fluids
4. Bed rest and limb elevation is recommended
5. Discontinue Simple lymphatic drainage and Manual lymphatic drainage
6. Low-pressure multi-layer bandaging can be tried if tolerated by the patient
7. Once the inflammation and pain is reduced compression and physical activity can be resumed

Criteria for In-patient care

- Septicaemia (hypotension, tachycardia, severe fever, vomiting or confusion) is an absolute indication of hospital admission.
- Continuing or worsening systemic signs (Fever, Chills, Rigor, Headache and Vomiting) even after 48 hours of oral antibiotics
- Continuing or worsening local signs (Redness, Swelling, Warmth, Tenderness and Pain) even after the first line and second line of antibiotics

Lymphorrhoea:

When the lymphatic fluid leaks through the skin it is called lymphorrhoea. It happens due to reasons such as excessive accumulation of lymph, abrasions or cuts in the skin (including surgical complications) and worsening congestive heart failure.(16,72) Lymphorrhoea can cause skin breakdown, abrasions and can be psychologically distressing for the patient. Treatment includes limb elevation, sterile absorptive dressing at the site of leakage and pressure bandaging to relieve congestion.(66,72) Changing the dressing and bandaging will depend on the strike-through rate of the leakage. There are anecdotal evidences that somatostatin analogue such as octreotide and lanreotide reduce lymphorrhoea.(80)

Lymphangiectasia:

The dilations of lymphatic vessels resulting in a small, soft, fluid-filled raised projections is called lymphangiectasia.(72) They should be treated promptly and protected as they can rupture and cause lymphorrhoea.(16) This can be managed by bandaging and reducing the swelling.

Papillomatosis:(72)

The dilatation of lymphatic vessels resulting in raised projections with associated fibrosis produces papillomatosis. Unlike lymphangiectasia that are soft, the raised projections produced by papillomatosis is firm due to fibrosis. There may also be associated hyperkeratosis. But papillomatosis can be treated with compression bandaging.

Fungal infection:

Fungal infection more commonly occurs at the skin folds, between the toes and web spaces. They can occur when there is excessive moisture (sweat) between the skin fold. They usually appear as whitish patches that are itchy.(72) The presence

of fungal infection can facilitate secondary bacterial infection. Fungal infection can be treated with Terbinafine 1% anti-fungal cream for two to six weeks.(72,78) Barrier ointment such as zinc oxide can be used to prevent skin to skin contact at the skin folds to control moisture. Good nail care reduces the port of entry for both bacterial and fungal infection.(76)

Compression:

Compression has remained the mainstay in the treatment of lymphoedema for several decades. Compression is provided either by the use of compression garments (CG) or compression bandaging (CB). Choosing compression garments or bandaging will depend on the nature and severity of oedema and the ability of the patient to cope with the treatment.

Compression garment (CG):

Hosiery is widely used in India. The duration of the usage of hosiery should be individualized. In some patients, it is required during waking hours but other need to wear it only while performing exercise however in some patient groups it needs to be worn 24 hours.(72) Similar to the duration the compression produced by the hosiery should also be individualized based on the severity of the swelling and the ability of the patient to tolerate the treatment.

Factors to be considered before using compression garments:(72,81)

- Self-care ability: The presence of arthritis, obesity and heart failure can make to application of hosiery difficult for the patient. They may require assistance or assistive devices to use hosiery.
- Skin conditions: Skin conditions such as lymphorrhoea, cellulitis can temporarily affect the usage of compression bandage. In patients with cellulitis

low-pressure multilayer bandaging can be tried as tolerated. But a prolonged period without compression should be avoided.

- Presence of shape distortion: Readymade compression garments are most ideal for cylindrical limbs. When there is shape distortion patients will require custom made compression garments or multilayer bandaging.
- Co-morbid conditions and coping: Presence of vascular disease with impaired peripheral circulation, acute cardiac failure, severe peripheral neuropathy and the inability of the patient to tolerate a therapeutic level of compression are important factors contraindicating the use of compression garments.

General guidelines for using compression garments:

1. Layering for compression garments can be done i.e. by wearing one compression garment over another. Doing this increases compression by 70%. This helps in managing acute exacerbation and when the patient is not able to tolerate single high compression garment.(72,81)
2. Taking accurate circumferential measurements is important in getting compression garments that fit perfectly.
3. Measurement for compression garment should be done when the swelling is less i.e. immediately after removing bandage when the pitting oedema is less and special attention should be given at the areas of shape distortion(72,81)

4. Oil-based emollients can damage the integrity of the cloth. One should ensure that the emollients are absorbed into the skin and the area is dry before the application of compression garments.(72)
5. Compression garments may require change every 3 to 6 months or when the elasticity is lost which diminishes the compression pressure.(72)
6. Compression garments should not be worn with the top edges folded down as it creates tourniquet effect resulting in swelling in the areas distal to the fold.(72)
7. Garments will require frequent washing; this should be done according to the manufacturer's guidelines.(72)
8. It will be prudent to wear a glove or gauntlet while wearing an arm sleeve, especially while performing a physical activity to prevent hand swelling.
9. To prevent damage to the integrity of the compression garment, a glove can be worn on the other hand while wearing the compression garment.
10. For in lower limb lymphoedema, patients with ABPI less than 0.5 should not receive compression garments and will need a referral to a vascular specialist.

Compression bandaging (CB):

Compression bandaging has remained an invaluable asset in the intensive management of lymphoedema and in managing its skin complications. In compression bandaging, Multi-Layer Lymphoedema Bandaging (MLLB) has proven to be much more effective in reducing the swelling. In MLLB both elastic and inelastic bandages are used. They have their own advantages.

Inelastic bandages	Elastic bandages
• Produce high working pressure during the physical activity(82) but the resting pressure decreases as the oedema decreases.(72)	• Though working pressure increases but it is lower than the working pressure produced by inelastic bandage.(82)
• When the muscles contract they compress the interstitial space against the inelastic bandage producing massage effect. This facilitates good pumping action and pushes the lymphatic fluid through the channels.	• Elastic bandages can also retain the compression pressure better when the swelling goes down thereby not necessitating reapplication.
• Inelastic bandages are most ideal for patients who can perform physical activity or they should be passively exercised.	• Elastic bandages suitable for patients who cannot perform physical activity since the elasticity of the bandage maintains constant compression.(82)

Indications for using MLLB:

- More than mild lymphoedema (i.e.) >20% difference in the limb volume.(82)
- Severe shape distortion
- Deep skin folds
- Swelling that cannot be contained by a compression garment
- Management of skin problems such as lymphangiectasia, papillomatosis and lymphorrhoea

Contraindications for using MLLB:(72,83)

- Severe arterial insufficiency (ABPI <0.5)
- Uncontrolled heart failure

- Severe peripheral neuropathy
- Acute deep vein thrombosis

The presence of cellulitis is not an absolute contraindication for wearing compression bandages but can be used with caution and lower pressure.(72,82,83) In controlled congestive heart failure, bandaging should be applied one limb at a time with caution. Similarly, caution should be exercised in patients with diabetes, sensory deficit and paralysis.(72)

Articles required for bandaging: (Used in Institute of Palliative Medicine, Kozhikode)

1. Cotton tubular bandage
2. Gamgee cotton roll
3. Inelastic bandage if not available Crepe bandage (4cm. 6cm, 8cm, 10cm, 12cm)
4. Adhesive tape

The general guideline in the application of MLLB:(72)

1. Soft tubular bandage and cotton roll is applied to re-shape the limb
2. The bandaging should always start distally and move proximally
3. While bandaging, use the entire hand to guide the bandage as close to the limb as possible to prevent creasing and to get good fit
4. Additional padding may be required at popliteal fossa and at elbows
5. If elastic bandages are used, they should be used at 50% extension and 50% overlap
6. If inelastic bandages are used, they should be used at

full extension except when they are used on toes and fingers

7. While using an inelastic bandage, several layers may be required to get desired pressure.
8. Bandage the limb at a slightly flexed position and use figure of eight technique at the joint to minimise creasing at the joints.
9. The bandage should be extended beyond the region of swelling to prevent the swelling proximal to bandage due to fluid displacement. It is always ideal to include knee and elbow while applying the bandage to prevent this fluid displacement.
10. The figure of eight is more ideal than spiral bandaging as the figure of eight has more winding increasing sub-bandage pressure and also the chances of slippage is less.
11. Assess the range of motion, sensation, circulation, fit and patient comfort after application of the bandage
12. Involve the patient and the caregiver in the application of bandage and train them in the application.

Lymphatic massage:

Lymphatic massage is a process that utilizes gentle, repetitive massage to stimulate normal lymphatic pathways to facilitate lymphatic flow from the congested areas. Lymphatic massage techniques prove invaluable when there is oedema of head, neck and trunk where the application of compression garment is difficult. However, in the treatment of lymphoedema especially the ones in the extremities, to sustain the effects of lymphatic massage compression garments should be used. Lymphatic massage is classified into the following types. While

performing lymphatic massage one should avoid vigorous and deep massage. Vigorous and deep massage can cause tissue damage, increase capillary refill and increase the oedema. Lymphatic massage has a greater psychological benefit especially in those with advanced disease that is irreversible.(83) The human touch in a gentle massage communicates to the patient that they matter no matter their condition is and offers greater comfort to the patient even if the therapeutic outcome is minimal to negligible.

1. Manual lymphatic drainage
2. Simple lymphatic drainage

Contraindications of lymphatic massage:(72,83)

- Presence of acute cellulitis
- Acute congestive heart failure
- Liver cirrhosis with ascites
- Renal failure
- Unstable hypertension
- Superior Vena Cava obstruction
- On the site of tumours

Manual lymphatic drainage (MLD):

Manual lymphatic massage is always performed by a trained person. When MLD is performed regularly the patency of the lymphatic channels can be maintained. It is performed for up to one hour.

General guidelines for MLD:(72,84)

1. Manual lymphatic drainage should be started with diaphragmatic breathing and end with diaphragmatic breathing.

2. Should be performed with the patient in supine position unless the swelling is in head or neck in which case the massage should be performed in a sitting position

3. The massage is performed by stretching the skin with gentle pressure in one particular direction, by slow repetitive movement with a period of rest, allowing the skin to return to its normal position. This is done to facilitate the lymph flow without increasing capillary filtration.

4. The unaffected side should be gently massaged first and the lymphatic channels in the unaffected side should be opened first to collect and drain the lymph flow from the affected side. The direction of the massaging movement is from the affected side towards the unaffected side.

5. The massage of the affected limb is started proximally first slowly moving distally and the direction of the flow should be towards the heart.

Simple lymphatic drainage (SLD):

In simple lymphatic drainage, the patient self-administers the techniques of MLD to direct the lymph flow.(72) It can also be performed by the carer. When performed regularly, SLD can offer good symptomatic relief, but ensuring compliance is often challenging. The compliance of the SLD depends on the training provided to the patient, self-motivation of the patient and the patient's dexterity. Patients who had regular MLD will be able to learn and perform SLD better.

General guidelines of SLD:

In addition to the above-mentioned guidelines of MLD, more time should be spent on training the patient in performing SLD.

1. 10 to 20 minutes can be allocated to perform SLD each day
2. Demonstration and written instruction will be helpful to the patient.
3. Competency of the patient/carer to perform SLD and their ability to cope with the treatment should be checked periodically during homecare visits.

Exercise:

Like the blood which is circulated throughout the body by the pumping action of the heart, the lymphatic channels require the pumping action of the muscles to facilitate lymph flow. Evidence suggests that exercise increases the interstitial pressure and facilitates lymph propulsion and clearance.(85) Exercise not only facilitates lymph flow but also maintains muscle strength, improves cardiovascular function, improves psychological well-being and improves functional capacity.

General guidelines on lymphoedema exercise:(72,85)

1. Exercise can be performed while wearing compression garments or compression bandages to increase interstitial pressure.
2. Always start with low-intensity exercise and slowly increase the intensity
3. There should be warming up before the exercise and cooling down time within the exercise to prevent exacerbation of swelling.
4. Deep breathing exercise and aerobic facilitates the pumping of thoracic duct by increasing intra-abdominal pressure

5. A combination of flexibility exercise, aerobic exercise and resistance exercise can be adopted.
6. Walking, swimming and cycling are recommended
7. If the patient is paralysed passive exercise can be performed.

Psychological care:

Lymphoedema can have severe effects on the psychological wellbeing of the patient. This becomes even more significant in a palliative care setting as most patients suffer from life-limiting illnesses, and the additional burden of lymphoedema can be devastating. So, in addition to the treatment focusing on controlling lymphoedema, each patient should be monitored periodically for psychological issues.

The psychological issues in these patients can overtly manifest as anxiety, anger, sadness and depression. But in some groups, it manifests as an inability to cope with the treatment, poor compliance and frustration. The palliative care team should never overlook psychological assessment and care for patients suffering from lymphoedema.

General principles in providing psychosocial support for patients with lymphoedema:

1. Reducing the problems associated with lymphoedema (E.g. Cellulitis, Lymphorrhoea and pain) and improving the functional ability of the patient will reduce psychological problems to a greater extent and improve the sense of well-being.
2. Psychological support should be initiated even to patients at risk of developing lymphoedema by teaching them what they can expect, how to cope and how to prevent.

3. Creating a lymphoedema support group is invaluable as peer support and learning facilitates in building coping strategies.
4. Trained volunteer visits for individual patients is important to adequately monitor and support these patients.
5. All treatment of lymphoedema should be individualized and be holistic
6. Referral to psychologist/psychiatrist if psychological issues are not resolved in 3 months.

Standard Guidelines and Annexures

Documentation in Homecare

Documentation is a process of systematically recording patients' care in an individual patient record. In a home-based palliative care setting documentation plays a vital role in maintaining continuity of care. To provide safe, evidence-based and good quality palliative care, a clear, accurate and accessible documentation is indispensable.

Why is documentation important?

1. Documentation serves as an effective means of communication within the palliative care team and with the interdisciplinary team thereby ensuring continuity of care
2. Documentation serves as a legal defense for both patients and care providers
3. Documentation is crucial for monitoring, auditing and quality improvement purposes

4. Documentation provides information for evaluation and research
5. Documentation provides a platform for self-learning

Principles of documentation:(86)

- Accuracy
- Relevance
- Completeness
- Timeliness
- Confidentiality

Accuracy: The information provided in the medical records (case sheets) should be truthful and accurate. Inaccuracies in terms of commission and omission will render the medical records inaccurate and negatively affect the health outcomes of the patient and the healthcare services.

Relevance: Only what is required to be documented should be documented. Including irrelevant data in the medical records will obscure the essential information that is very relevant.

Completeness: A documented medical records should be free from omissions. Not documenting Relevant health information especially the ones related to allergies can have mortal consequences. Following a valid, structured and comprehensive proformas can ensure completeness of documentation.

Timeliness: Documentation of history, examination findings, medication, interventions and interaction with the patient and the family should be done as soon as possible. As the time gap increases, the recall and the accuracy of information decreases.

Confidentiality: The medical records should be accessible only to relevant personnel. Patient identifiable information should be protected and only be shared with the relevant personnel.

Accepted standards in the documentation in homecare setting:

1. Each page in the patient record should have the patients' unique identity number
2. All the entries in the patient records should be dated
3. All the relevant demographic profiles such as, address, employment status, marital status, etc. should be clearly documented without any omission.
4. Upon registration for homecare, the directions to reach the patients' home with important landmarks should be clearly documented in the patients' records.
5. The author who documents the different sections of the medical record should be identified with a signature.
6. Members of the homecare team available during the visit should be identified in the medical records.
7. The documentation should be clear and legible to others, other than the person documenting the information.
8. Only standard and accepted terminologies should be used
9. Patients' primary illness and other coexisting conditions should be clearly documented.
10. Patients allergies and adverse reactions should be noted prominently
11. All laboratory findings and results should be documented in a separate section
12. While documenting the laboratory results and findings the date the investigation was performed or the date the sample was collected should be clearly doc-

umented rather than the date report was made available.

13. When a medication is stopped, it should be clearly mentioned along with the reason why the medication was stopped.
14. When the dose of a particular medication is increased it should be documented clearly.
15. Overwriting should be avoided at all cost, especially while writing the dosage of medications.
16. Volunteers should be encouraged to document during their homecare visits.
17. Documentation at each visit should include
    a. Condition of the patient on arrival
    b. Assessment findings (Patient-related/Family related)
    c. Advice and prescriptions (including members of homecare team consulted)
    d. Interventions
18. Follow-up or the next review date should be documented at each visit.
19. It is a good practice to maintain a patient health record that is always available with the patient and the family in addition to the patient record maintained at the palliative care clinic. This record serves as a communication and information tool for emergency teams and other clinical teams to better understand patients' condition and treatment plans.

INFECTION CONTROL IN HOME-BASED PALLIATIVE CARE

Standard precautions

The following standard precautions must be followed while caring **for all patients irrespective of their disease status**. These precautions should be applied whenever there is potential exposure to blood and other body fluids except sweat, i**rrespective of the presence of visible blood** in the body fluid. Standard precautions are applied when there is potential exposure to non-intact skin and mucous membranes.

Hand hygiene:

Hand hygiene is one of the simplest and effective way of preventing the transmission of infection. Hand washing must be done using soap and water. It should be performed for a minimum of 20 seconds. Once when the hand is washed the health care worker should not use the washed hand to close the faucet. Hand washing should be done when there is visible soiling of hands with blood or body fluids.

Hand washing is mandated under the following circumstances

- Before and after direct contact with the patient and in-between patients. (This is irrespective of whether the gloves are worn or not)
- Before wearing the glove and after removing the glove
- Before handling invasive device (E.g. Indwelling catheter)
- After contact with blood, body fluid, secretions, excretions, non-intact skin, mucous membrane and contaminated items even if gloves are worn
- During patient care, when moving from a contaminated site to clean body site of the patient

- After contact with the articles used by the patient such as bed sheets, pillows, towels, water bottles, plates, etc

Alcohol-based hand sanitizer (hand rub) can be used when there no visible contamination of hand with blood or body fluids.

Alcohol rub can be used by applying enough quantity on the palm of one hand and then both the hands should be rubbed together covering all the surfaces of the hands and fingers until the hands are dry. It takes a minimum of 20 seconds for this process.

Personal Protective Equipment (PPE):

- Gloves
- Mask
- Apron
- Goggles and/or face shield

Gloves:

1. Gloves must always be worn while touching blood, body fluid, secretions, excretions, mucous membrane and non-intact skin.
2. When there is a contact with the potentially infected material, Gloves must be changed before touching other areas in the same patient to prevent cross-contamination.
3. Gloves should be removed before touching the surfaces and other clean items
4. Wearing glove does not mitigate the need for handwashing

Sterile gloves: E.g. Indwelling catheterization, Wound dressing, Ascitic tapping

Clean gloves: E.g. Oral care, Per Rectal enema

Masks, Goggles/face shield and Apron:

1. Masks must be worn while performing interventions that can spray/splash blood or body fluids, secretion and excretions

   E.g. Tracheal suctioning, Oral care

2. Similarly, Goggles must be worn while performing interventions that can spray/splash blood or body fluids, secretion and excretions

   E.g. Tracheal suctioning, Oral care

3. The apron must be worn while performing interventions that can spray/splash blood or body fluids, secretion and excretions

   E.g. Per Rectal Enema

Donning of PPE (Personal Protective Equipment):

The personal protective equipment (PPE) should be worn in the following sequence,

Apron -> Mask -> Goggles/Face shield -> Gloves

Removal of PPE:

The PPE should be removed in the following sequence.

Gloves -> Goggles/Face shield -> Apron -> Mask

1. The glove should be removed by grasping the palm of the one hand with the other and peeling off the glove. The removed glove should be held in the gloved hand.

2. With the degloved hand, slide the fingers under the glove and peel off the glove from the other hand over the first glove.

3. Goggles or face shield should be removed from behind the head
4. To remove the apron, untie the apron and then remove the apron by pulling away from neck and shoulders turning it inside out while touching only the inside.
5. Mask should be removed by reaching the tie from behind and removing the mask from behind without touching the front.
6. Perform hand hygiene after removing the PPE

Airborne precautions:

Airborne precautions are taken while caring for the patient who is known or suspected to have a disease that spread through airborne transmission. They spread via infected droplet nuclei (less than 5 μm) that remain suspended in the air for a longer duration of time. A foolproof airborne precaution is not possible in a homecare setup, but a nurse caring for the patient should take the following precautions.

E.g. Varicella zoster, Tuberculosis

1. Though ideally a patient under airborne precautions should be placed in a negative pressure room this is not possible in a homecare setting. These patients should be placed in a separate room and the door must be closed at all times.
2. The nurse caring for these patients should wear a respirator (N95). These respirators should cover the mouth and nose. These respirators should only be removed only after exiting the patient room.
3. Hand hygiene must be performed before entering the room and after exiting the room

4. If the patient is transported, he/she should wear a surgical mask to cover the nose and face.

Droplet precautions:

Droplet precautions are taken while caring for the patient who is known or suspected to have a disease that spread through droplets transmissions. The droplets refer to respiratory particles that are +/- 5 microns in size. Droplets remain suspended in air only for a limited period of time. Transmission occurs within a distance of 3 to 6 feet from the source.

E.g. Influenza

1. The patient should be kept in a separate room and the doors may be kept open
2. A surgical mask must be worn while caring for the patient
3. Hand hygiene must be performed before and after caring for the patient
4. If the patient is being transported, he/she should wear a surgical mask to cover the face and nose

Contact precautions:

Contact precautions are taken while caring for the patient known or suspected to have infections that spread through direct or indirect contact with the patient. Indirect contact occurs when an object contaminated by the patient comes in contact with the other persons such as health care workers.

E.g. Major draining abscess, Major infected pressure ulcers, Infection with multi-drug resistant organisms and Scabies

1. It is preferred that these patients are in a separate room
2. Gloves and Apron must be worn before entering the

patient room and they should be removed before exiting the patients' room

3. While leaving the room care should be taken not to touch the objects potentially contaminated by the patient

4. Hand hygiene must be performed immediately after exiting the patients' room

It is important to keep in mind that **there are diseases that requires more than one precaution to be employed to prevent transmission**. E.g. In disseminated Herpes Zoster, contact, airbone and standard precautions should be applied to prevent transmission.

How to manage bio-medical waste at homecare settings?

(Practiced at Institute of Palliative Medicine, Kozhikode)

1. Bio-medical waste generated during homecare visits **should neither be considered as household waste nor be discarded as household waste.**

2. Bio-medical waste generated during the home care visit **should be discarded according to local biomedical waste management policy.**

3. Separate disposable containers for sharp disposal, soiled items (Cotton, gauze and gloves) and internal devices (catheters, urobag) should be available.

4. All the disposable container should be colour coded and labelled according to the Bio-Medical waste management guidelines

5. The principle of **segregation at the site of generation**

should be practiced while doing procedures in home-care.

6. The 1% sodium hypochlorite disinfection solution **should be freshly prepared every day** as the solution loses its strength.

7. At the end of the day after homecare, the used steel trays and forceps should be treated with 1% sodium hypochlorite solution for 20 minutes before packing and sending for autoclaving.

8. Since sodium hypochlorite is a corrosive the steel articles after the treatment with hypochlorite solution should be washed with water

9. Single-use disposable items like needles, syringes, gloves, tubes, catheters, gauze and pads should **never be autoclaved and reused.**

10. While handling the Bio-Medical waste the health care personnel should wear all the personnel protective equipment (PPE)

11. The bleach (powder or solution) used for preparing 1% sodium hypochlorite solution should be stored in a cool and dry place away from the sunlight

12. If the liquid concentrate of hypochlorite solution is used, a minimum of 5% solution should be used for further dilution

13. Since the hypochlorite is highly unstable the manufacturers' expiry date printed should be strictly adhered to

14. The hypochlorite concentrate solution should be stored in plastic opaque airtight containers.

How to prepare 1% sodium hypochlorite solution?

Articles required:

1. Bleaching powder with 30% active chlorine
2. Clearwater without any organic contaminants
3. Plastic tub

Procedure:

1. Take 1 litre of clear water without any organic contaminants in a plastic tub
2. Dissolve 33grams (approximately 2 tablespoons) of bleach containing 30% active chlorine
3. Wait for 30 minutes
4. After 30 minutes use the clear supernatant fluid for disinfection

Annexure I : Homecare Kit

Essential equipment to be carried for home care

1. Sphygmomanometer
2. Stethoscope
3. Digital Thermometer
4. Flexible measuring tape
5. Glucometer and strips
6. Sterile tray
    a. Wound dressing
    b. Catheter change
    c. Ascitic tapping
7. Sterile blade
8. Scissors
9. Disposable shaving set
10. Nail cutter
11. Crepe bandage (2-inch, 4-inch, 6-inch)
12. Surgical Spirit
13. Sterile Syringe
    a. 2mL
    b. 5mL
    c. 10mL
    d. 20mL
    e. 50mL

14. Sterile needles (1 ½ inch)
    a. 18G
    b. 20G
    c. 22G
    d. 23G
    e. 24G
15. Cotton pack
16. Foley's Catheter
    a. 14F
    b. 16F
    c. 18F
17. Nel Cath
18. Urobag
19. Nasogastric tube
    a. 14FG
    b. 16FG
20. Micropore plaster
21. Elastoplast
22. IV cannula
    a. 20FG
    b. 22FG
    c. 24FG

23. Scalp vein set
    a. 21G
    b. 23G
24. IV set
25. Mask
26. Apron
27. Googles
28. Sterile gloves (6.5 and 7 size)
29. Clean gloves (6.5 and 7 size)
30. Liquid soap
31. Hand sanitizer
32. Povidone Iodine
33. Torchlight
34. Waste collection containers
    a. For sharps (Puncture-proof container)
    b. For soiled gauze and bandages
    c. For soiled equipment

Annexure-II : Drugs to be carried for home care

S No	Drug name	Dosage
1	Alprazolam	0.25mg/0.50mg
2	Albendazole	400mg
3	Amitriptyline	10mg/25gm
4	Amlodipine	2.5mg/5mg
5	Amoxicillin	250mg/500mg
6	Amoxicillin and potassium clavulanate	625mg
7	Antacid Syrup	
8	Aspirin	75mg/150mg
9	Atenolol	50mg
10	Atorvastatin	10mg
11	Azithromycin	500mg
12	B-complex	
13	Baclofen	10mg
14	Bisacodyl	5mg/10mg
15	Calcium and Vitamin D3	500mg
16	Carbamazepine	200mg
17	Cetirizine	10mg
18	Chlorpheniramine maleate	4mg
19	Ciprofloxacin	500mg
20	Ciprofloxacin and Tinidazole (combination)	500mg and 600mg
21	Clopidogrel	75mg
22	Clonazepam	0.5mg
23	Cremaffin (Liquid Paraffin + Milk of Magnesia)	
24	Cough syrup	
25	Dexamethasone	4mg/8mg
26	Diazepam	5mg
27	Diclofenac	50mg
28	Dicyclomine	10mg

29	Domperidone	10mg
30	Enalapril	5mg
31	Enema (Sodium Phosphate)	
32	Etamsylate	250mg
33	Etophylline and Theophylline	100mg
34	Fluconazole	150mg
35	Fluoxetine	20mg
36	Folic acid	5mg
37	Furosemide	20mg/40mg
38	Glibenclamide	5mg
39	Glycopyrrolate	1mg
40	Haloperidol	5mg
41	Loperamide	2mg
42	Lorazepam	1mg/2mg
43	Meloxicam	15mg
44	Metformin	500mg
45	Metoclopramide	10mg
46	Metronidazole (Coated/uncoated)	400mg
47	Morphine**	10mg, 20mg, 50mg
48	Multi-vitamin	
49	Norfloxacin	400mg
50	Omeprazole	20mg
51	Ondansetron	4mg/8mg
52	ORS Sachets	
53	Pantoprazole	40mg
54	Paracetamol	500mg/650mg
55	Pheniramine maleate	25mg
56	Phenobarbitone	30mg/60mg
57	Phenytoin sodium	100mg
58	Ranitidine	150mg
59	Risperidone	2mg
60	Isosorbide dinitrate	10mg/20mg
61	Salbutamol	2mg

62	Sertraline	50mg
63	Sodium Valproate	200mg
64	Sucralfate	1mg
65	Sucralfate Syrup	
66	Terazosin	1mg
67	Telmisartan	20mg/40mg
68	Tramadol	50mg
69	Trihexyphenidyl	2mg
70	Turpentine Oil	

****According to the NDPS amendment act 2015, Morphine can be transported in the palliative homecare vehicle. The number of morphine tablets taken into the homecare vehicle should be recorded in the daily account register and the return of the same should be documented in the daily account register.**

Parenteral injections to be carried for home care

S.No	Drug name (Oral)	Dosage
1	Atropine	0.6mg/1mg
2	Adrenaline	1mg (1:1000)
3	Dexamethasone	8mg
4	Dextrose	5%,10%,25%, 50%
5	Diazepam	5mg
6	Etamsylate	125mg
7	Etophylline& Theophylline (Deriphylline)	100mg
8	Furosemide	20mg/40mg
9	Glycopyrrolate	0.2mg
10	Haloperidol	5mg
11	Ketamine	
12	Lignocaine	
13	Metoclopramide	10mg
14	Metronidazole	500mg
15	Midazolam	1mg/mL

16	Normal Saline	
17	Ondansetron	8mg
18	Paracetamol	1000mg
19	Phenytoin	50mg/mL
20	Ranitidine	50mg

Annexure III : Minimum training standards for Homecare team prescribed by WHO

Adapted from Planning and implementing palliative care services: a guide for programme manager by WHO

Member of Homecare team	Basic	Mid-level	Advanced
Doctor	Foundation courses (3-10 days)	Residential course (6 weeks)	Fellowship/ postgraduate qualification in palliative care (1-3 years)
Nurse	Foundation courses (3-10 days)	Residential course (6 weeks)	Certificate Course (4 months) Fellowship (1 year)
Community health worker	3-6 hours to supplement prior training	Basic course (3months/400 hours)	Advanced communication skills/ lymphedema management
Volunteer	Introductory course (3 hours)	16 hours theory + 4 clinical sessions,	Advanced communication skills and train-the-trainer course

Training programs available at Institute of Palliative Medicine

Doctors:

- Foundation Course in Palliative Medicine (3 days of theory and 7 days of clinical posting)
- Basic Certificate Course in Palliative Medicine (6 weeks)
- National Fellowship in Palliative Medicine (One year)
- Fellowship in Palliative Care (6 months)
- Certificate Course in Essentials of Palliative Care (3days theory, 10 days optional clinical postings)

Nurses:

- Basic Certificate Course in Palliative Nursing (6 weeks)
- National Fellowship in Palliative Nursing (One year)
- Foundation Course in Palliative Nursing (3 days of theory and 4 days of clinical posting)
- Fellowship in Palliative Care (6 months)

Volunteers:

- Train the trainer course for community volunteer training based on the WHO training manual (16 Hours)
- Fellowship in Palliative Care (6 months)

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'Home-Based Palliative Care – A Manual for Nurses' is an attempt to address the information needs of nurses involved, or interested, in palliative home care, particularly in Low- and Middle-Income Countries.

This document was developed through a series of workshops drawing on the experience of Health Care Professionals working in Palliative Home Care in India and Bangladesh.

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