



**Nursing Procedure Manual**  
**Nobel Medical College Teaching**  
**Hospital Biratnager, Nepal**



**Nursing Procedure Manual**  
**Nobel Medical College Teaching Hospital Biratnager,**  
**Nepal**

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## **Users of the Nursing Procedure Manual**

1. Nursing Academy and Clinical Nursing Administration
2. Nursing Faculty
3. Nursing Instructor
4. Nursing Supervisor
5. Nursing Incharge
6. Nursing staff
7. Different Level Nursing students
8. Administration
9. Other Health care workers

## FOREWORD

It gives me great pride and joy in presenting the 'Nursing Procedure Manual' for Nobel Medical College Teaching Hospital Biratnagar 4, Nepal.

Knowledge gained through education has been the driving force for the progress of mankind. This coupled with human experience has helped to provide quality care. The workforce of nurses is an extremely vital component of healthcare and they act as a direct interface between the hospital and patients. Working in a tertiary care institute places several demands upon them for efficient delivery of their responsibilities.

This manual provides guidance on basic nursing procedures on various aspects of nursing services.

I am thankful to the academic and clinical nursing team for spearheading this task.

I am sure that this manual will provide a fresh and engaging perspective on the aforementioned subjects for the present and future nursing manpower.



Mrs. Indira Sharma Baral

Managing Director

Nobel Medical College Teaching Hospital

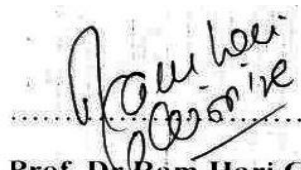
Biratnagar 4, Nepal

## FOREWORD

Nursing service is an integral part in the health care delivery system. Nursing service is considered to be the backbone of the health care facility. This Nursing Procedure Manual aims at providing a positive resource to nurses, so that they can be further more competent theoretically and practically to improve the quality, wellbeing and safety of the patients working in one of the largest tertiary care institutions in Eastern part of Nepal.

My heartly congratulations to Academic and Clinical Nursing Department Team, for successfully taking out the 1<sup>st</sup> edition of Nursing Procedure Manual. I also congratulate all the members directly and indirectly contributed in making this manual a knowledge resource.

This manual will be helpful for nursing professional working in our students , different clinical areas and will also assist in training new staff . It will provide key information and as a guidance about the Nursing Services in both theory and practical manner.



**Prof. Dr. Ram Hari Ghimire**

**Principal**

**Nobel Medical College Teaching Hospital**

**Biratnagar- 4, Nepal**

## FOREWORD

I feel great pleasure to be able to write the foreword for Nursing Procedure Manual, Nobel Medical College Teaching Hospital. The excellent writing and contents of the manual cover issues applicable to various facets of nursing services, which are commonly faced in healthcare settings. On any given day, nursing professionals handle a wide array of responsibilities ranging from patient care, ward management, human resources, facilities management, as well as attendants' management. This manual is aimed at standardizing nursing procedures, assisting in training new staff, and having information readily available to the nursing fraternity. I congratulate the academic and clinical nursing departments for their commitment and efforts in developing this manual.



**Dr. Rajesh Nepal**

**Hospital Director**

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**Biratnagar 4, Nepal**

## PREFACE

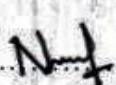
Nursing procedure manual is the first nursing procedure manual published in Nobel Medical College Teaching Hospital. Nursing service is an integral part of NMCTH, which aims at high quality nursing care to the patients. The professional nurses work in an environment that encourages professionalism and expertise in providing comprehensive patient care with the members of allied disciplines in the hospital.

Nursing is a unique profession that combines both an “art” and a “science.” The “art” or caring component of nursing is an aspect that each of us brings to the profession with our individual backgrounds and experiences. This manual identifies the psychomotor activities required to perform nursing skills safely. Psychomotor skills are an integral component of the practice of nursing. Both the teaching and learning of psychomotor skills include an emphasis on cognitive learning. One week of workshop programme was conducted with the expertise from various speciality of nursing and the manual was published entitled “NURSING PROCEDURE MANUAL”. This procedure manual would serve nursing students, avid readers as well as a reference to healthcare professionals working in different areas of practice with an up to date information addendum in different basic nursing procedure.

Special thanks to Ms. Indira Sharma Baral, Managing Director of Nobel Medical College Teaching Hospital, Prof. Dr. Ram Hari Ghimire, Principal of NMCTH, Dr. Biswanth Adhikari, Deputy CEO, Dr. Rajesh Nepal, Hospital Director, Prof. Dr. Ritu Baral, Vice Principal, Dr. Mukti Acharya, Deputy Hospital Director of NMCTH and Mr. Rudra Prasad Sharma, General Manager of NMCTH and Mr. Dipesh Rai, Chief Administrative Officer for their generous help in publishing this book by NMCTH.

With the active involvement of Ms. Pratikshya Tripathi, Clinical Nursing Director, Nursing faculties, Matron, Ms. Kalpana Pokharel, Nursing Supervisor and ward Incharges of NMCTH for their valuable contributions. Similarly, I want to acknowledge the valuable contributions of finance, administrative department and IT staffs of NMCTH for their kind help.

To conclude, I hope that, this manual, "Nursing Procedure Manual" shall help all medical professionals and students involved in the management of patients working in different settings.

  
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**Ac. Nursing Director**  
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## **ADMISSION PROCEDURE**

### **Definition**

Admission of a patient means allowing and facilitating a patient to stay in the hospital unit or ward for observation, investigation and treatment of the diseases he or she is suffering.

### **Purposes:**

- To provide the immediate care.
- To provide comfort and safety to the patient.
- To assist the patient in adjusting to the hospital environment.
- To obtain information about the client to establish therapeutic nurse –patient relationship.
- To undertake different laboratory and diagnostic procedures.
- To involve patient and family in planning and providing comprehensive care.

### **Types of admission:**

1. **Routine admission:** These are planned for clients suffering from clinical disorders and who need to undergo any treatment modality or diagnostic procedure.
2. **Emergency admission:** These are done for clients suffering from acute conditions or life threatening conditions like cardiac arrest, stroke, poisoning, accidents etc.

### **Equipment's**

- Admission form
- TPR sheet, medicine chart, I/O chart, nurses record chart
- Vitals signs tray
- Height/weight scale

### **Procedure:**

1. Wash hands. Prepare all required equipment's.
2. Prepare an appropriate type of bed with adequate adjusted height of the bed.
3. Receive the patient and his/her family with warm approach.
4. Identify the patient with the admission slip. Greet the patient and his/her relatives in a pleasant manner and introduce yourself, other staff members to them.
5. Make the patient comfortable and assist him/her according to needs.
6. Check the details such as advance payment, ward and unit assigned.
7. Check for admission consent whether patient and relatives duly sign it.
8. Prepare case sheet and bedside chart.
9. Assess and record the vital signs including height and weight of patient.
10. Obtain initial patient history and perform head to examination of patient.

11. Assess the immediate need, see the chart and follow the immediate instructions including medications.
12. Help the patient to change hospital's gown. Handover the patient's valuable things to family.
13. Orient the patient and family with ward, ward routines, supportive hospital facilities such as pharmacy, canteen, etc.
14. Explain the hospital policies regarding visitor hours, gate pass, attendants staying with patients and restriction in ward.
15. Explain the daily routine of the ward, including morning care, doctors round, mealtime, and medication time.
16. Ask the patient's relatives to bring daily use equipment such as towel, soap, oil, brush, toothpaste, comb, etc.
17. Record the patient details in admission book and census form according to hospital policy.
18. Write a complete admission report in the patient's chart including date, time of arrival, client's condition, vital signs, any abnormalities and interventions done.

## **TRANSFER OF PATIENT**

### **Definition**

Transfer of a patient is defined as process of shifting the patient from one unit to another in the same hospital or between hospitals.

### **Purposes:**

- To provide more specialized care to according to patients need.
- To continue the care in another unit or hospital.

### **Equipment's**

- Wheel chair/ stretcher
- O<sub>2</sub> cylinder with tube

### **Procedure**

1. Check written transfer order and assess the reason for transfer.
2. Explain to the patient and visitor about the purpose of transfer.
3. Complete the patient chart and up to date.
4. Inform the receiving unit and ensure the bed is ready.
5. Assess the patient's physical condition and determine the mode of transportation.
6. Instruct the visitor to collect the belongings of patient and keep ready for shifting.
7. Assist in transferring the patient to stretcher or wheel chair using proper body mechanics.

8. Gather equipment supplies and prescription that the patient has taken.
9. Check the final assessment of patient's stability (vital signs, clear airway, IV lines, level of consciousness, O<sub>2</sub> supply etc.)
10. Record the transfer out in admission/discharge register specifying the ward/unit.
11. Doctor/ Nurse/ Attendant should accompany the patient to receiving unit or hospital.
12. Handover patient along with his/her document to the receiving person in concerned unit.
13. After the patient has gone, the bed should be made clean, tidy, and keep ready for next use.

## **DISCHARGE PROCEDURE**

### **Definition**

Discharge is the preparation of the patient for departure from the hospital with approval of the doctors.

### **Purposes:**

- To reduce the duration of stay at the hospital.
- To prepare the patient and family member for continuity of care at home.
- To co-ordinate referrals to appropriate hospital or rehabilitation center.

### **Equipment's:**

- Patient's all record
- Discharge paper/slip
- Admission/ discharge register
- Wheel chair or stretcher

### **Procedure:**

1. Check written order for discharge.
2. Inform the patient and relatives in time.
3. Prepare and compile the patient's entire document.
4. Collect the written discharge letter.
5. Send the client discharge file to billing section.
6. After clearance, provide instructions according the discharge ticket
7. Provide discharge instruction about diet, rest sleep and exercise, medication including dose, time, duration, and complication of diseases, home care and follow up visits.
8. Provide information about home care facilities available.
9. Handover the patient's belonging and any valuable which have been kept safely to the patient's relatives.

10. Assist the patient in gathering and packing personal items to go home.
11. If the patient is ambulatory, instruct relatives to assist him.
12. Obtain wheel chair or stretcher for the patient who is unable to ambulate.
13. Complete the documentation of discharge with entry in admission/ discharge register and census form.
14. Record the discharge report in nurse's note.
15. After the patient has gone, the bed should be made clean and tidy to keep ready for next use.

## **BED MAKING**

### **UNOCCUPIED BED**

#### **Definition**

A bed made without patient in the bed.

#### **Purpose**

- To provide clean and comfortable bed for the patient.
- To reduce the risk of infection by maintaining a clean environment.
- To prevent bed sores by ensuring there are no wrinkles to cause pressure points.

#### **Equipment**

- Mattress (1)
- Bed sheets (2)
- Bottom sheet (1)
- Top sheet (1)
- Pillow (1)
- Pillow cover (1)
- Mackintosh (1)
- Draw sheet (1)
- Blanket (1)
- Savlon water or Dettol water in basin
- Sponge cloth (4)
- to wipe with solution (1)
- to dry (1)
- When two nurses do bed make, sponge cloth is needed two each.
- Kidney tray or paper bag (1)
- Laundry bag or Bucket (1)
- Trolley (1)



## Procedure

Action	Rationale
1) Explain the purpose and procedure to the client.	<ul style="list-style-type: none"> <li>• Providing information fosters cooperation.</li> </ul>
2) Perform hand hygiene.	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> </ul>
3) Prepare all required Equipment's and bring the articles to the bedside.	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance</li> </ul>
4) Move the chair and bed side locker	<ul style="list-style-type: none"> <li>• It makes space for bed making and helps effective action.</li> </ul>
5) Clean bed side locker: wipe with wet dry	<ul style="list-style-type: none"> <li>• To maintain the cleanliness</li> </ul>
6) Clean the mattress: <ol style="list-style-type: none"> <li>Stand in right side.</li> <li>Start wet wiping from top to center and from center to bottom in right side of mattress.</li> <li>Gather the dust and debris to the bottom.</li> <li>Collect them into kidney tray.</li> <li>Give dry wiping as same as procedure 2).</li> <li>Move to left side.</li> <li>Wipe with wet and dry the left side.</li> </ol>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection</li> </ul>

<p>7) Move to right side</p> <p>Bottom sheet:</p> <ol style="list-style-type: none"> <li>a. Place and slide the bottom sheet upward over the top of the bed leaving the bottom edge of the sheet.</li> <li>b. Open it lengthwise with the centerfold along the bed center.</li> <li>c. Fold back the upper layer of the sheet toward the opposite side of the bed.</li> <li>d. Tuck the bottom sheet securely under the head of the mattress (approximately 20-30cm). Make a mitered corner. <ol style="list-style-type: none"> <li>i. Pick up the selvage edge with your hand nearest the head of the bed.</li> <li>ii. Lay a triangle over the side of the bed</li> <li>iii. Tuck the hanging part of the sheet under the mattress.</li> <li>iv. Drop the triangle over the side of the bed.</li> <li>v. Tuck the sheet under the entire side of bed.</li> </ol> </li> <li>e. Repeat the same procedure at the end of the corner of the bed</li> <li>f. Tuck the remainder in along the side</li> </ol>	<ul style="list-style-type: none"> <li>• Unfolding the sheet in this manner allows you to make the bed on one side.</li>   <li>• A mitered corner has a neat appearance and keeps the sheet securely under the mattress.</li> <li>• Tucking the bottom sheet will be done by turn, the corner of top firstly and the corner of the bottom later.</li>   <li>• To secure the bottom sheet on one side of the bed.</li> </ul>
<p>8) Mackintosh and draw sheet:</p> <ol style="list-style-type: none"> <li>a. Place a mackintosh at the middle of the bed (if used), folded half, with the fold in the center of the bed Used), folded half, with the fold in the center of the bed.</li> <li>b. Lift the right half and spread it forward the near side.</li> <li>c. Tuck the mackintosh under the mattress.</li> <li>d. Place the draw sheet on the</li> </ol>	<ul style="list-style-type: none"> <li>• Mackintosh and draw sheet are additional protection for the bed and serves as a lifting or turning sheet for an immobile client.</li> </ul>

<p>mackintosh. Spread and tuck as same as procedure.</p>	
<p>9) Move to the left side of the bed. Bottom sheet , mackintosh and draw sheet:</p> <ol style="list-style-type: none"> <li>a. Fold and tuck the bottom sheet as in the above procedure 7.</li> <li>b. Fold and tuck both the mackintosh and the draw sheet under the mattress as in the above procedure 8.</li> </ol>	<ul style="list-style-type: none"> <li>• Secure the bottom sheet, mackintosh and draw sheet on one side of the bed</li> </ul>
<p>10) Return to the right side. Top sheet and blanket:</p> <ol style="list-style-type: none"> <li>a. Place the top sheet evenly on the bed, centering it in the below 20-30cm from the top of the mattress.</li> <li>b. Spread it downward.</li> <li>c. Cover the top sheet with blanket in the below 1 feet from the top of the mattress and spread downward.</li> <li>d. Fold the cuff (approximately 1 feet) in the neck part</li> <li>e. Tuck all these together under the bottom of mattress. Miter the corner.</li> <li>f. Tuck the remainder in along the side</li> </ol>	<ul style="list-style-type: none"> <li>• A blanket provides warmth.</li> <li>• Making the cuff at the neck part prevents irritation from blanket edge.</li> <li>• Tucking all these pieces together saves time and provides a neat appearance</li> </ul>
<p>11) Repeat the same as in the above procedure 10 in left side.</p>	<ul style="list-style-type: none"> <li>• To save time in this manner</li> </ul>
<p>12) Return to the right side. Pillow and pillow cover</p> <ol style="list-style-type: none"> <li>a. Put a clean pillow cover on the pillow.</li> <li>b. Place a pillow at the top of the bed in the center with the open end away from the door.</li> </ol>	<ul style="list-style-type: none"> <li>• A pillow is a comfortable measure.</li> <li>• Pillow cover keeps cleanliness of the pillow and neat.</li> <li>• The open end may collect dust or organisms.</li> <li>• The open end away from the door also makes neat.</li> </ul>
<p>13) Return the bed, the chair and bedside table to their proper place.</p>	<ul style="list-style-type: none"> <li>• Bedside necessities will be within easy reach for the client.</li> </ul>

14) Replace all Equipment's in proper place. Discard lines appropriately.	<ul style="list-style-type: none"> <li>• It makes well setting for the next.</li> <li>• Proper line disposal prevents the spread of infection.</li> </ul>
15) Perform hand hygiene	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> </ul>

❖ Nursing Alert

- Do not let your uniform touch the bed and the floor not to contaminate yourself.
- Never throw soiled lines on the floor not to contaminate the floor.
- Staying one side of the bed until one-step completely made saves steps and time to do effectively and save the time.

### **OCCUPIED BED**

**Definition**

A bed made with patient in the bed.

**Purpose:**

- To provide clean and comfortable bed for the patient.
- To reduce the risk of infection by maintaining a clean environment.
- To prevent bed sores by ensuring there are no wrinkles to cause pressure points.

**Equipment**

- Bed sheets(2)
- Bottom sheet ( or bed cover) (1)
- Top sheet (1)
- Draw sheet (1)
- Mackintosh (1) (if contaminated or needed to change)
- Blanket (1) ( if contaminated or needed to change)
- Pillow cover (1)
- Savlon water or Dettol water in bucket
- Sponge cloth (2)- to wipe with solution (1)  
- to dry (1) when two nurses do the procedure, sponge cloth is needed two each.
- Kidney tray or paper bag (1)
- Laundry bag or bucket (1)
- Trolley (1)

## Procedure

Care Action	Rationale
1) Check the client's identification and condition.	<ul style="list-style-type: none"> <li>To assess necessity and sufficient condition</li> </ul>
2) Explain the purpose and procedure to the client	<ul style="list-style-type: none"> <li>Providing information fosters cooperation</li> </ul>
3) Perform hand hygiene	<ul style="list-style-type: none"> <li>To prevent the spread of infection.</li> </ul>
4) Prepare all required Equipment's and bring the articles to the bedside.	<ul style="list-style-type: none"> <li>Organization facilitates accurate skill performance</li> </ul>
5) Close the curtain or door to the room. Put screen.	<ul style="list-style-type: none"> <li>To maintain the client's privacy.</li> </ul>
6) Remove the client's personal belongings from bedside and put them into the bedside locker or safe place.	<ul style="list-style-type: none"> <li>To prevent personal belongings from damage and loss.</li> </ul>
7) Lift the client's head and move pillow from center to the left side.	<ul style="list-style-type: none"> <li>The pillow is comfortable measure for the client.</li> </ul>
8) Assist the client to turn toward left side of the bed. Adjust the pillow. Leaves top sheet in place.	<ul style="list-style-type: none"> <li>Moving the client as close to the other side of the bed as possible gives you more room to make the bed.</li> <li>Top sheet keeps the client warm and protect his or her privacy.</li> </ul>
9) Stand in right side: Loose bottom bed linens. Fanfold (or roll) soiled linens from the side of the bed and wedge them close to the client.	<ul style="list-style-type: none"> <li>Placing folded (or rolled) soiled linen close to the client allows more space to place the clean bottom sheets.</li> </ul>
10) Wipe the surface of mattress by sponge cloth with wet and dry.	<ul style="list-style-type: none"> <li>To prevent the spread of infection.</li> </ul>
11) Bottom sheet, mackintosh and draw sheet: <ol style="list-style-type: none"> <li>Place the clean bottom sheet evenly on the bed folded lengthwise with the centerfold as close to the client's back as possible.</li> <li>Adjust and tuck the sheet tightly under the head of the mattress, making mitered the upper corner.</li> <li>Tighten the sheet under the end of the mattress and make mitered the</li> </ol>	<ul style="list-style-type: none"> <li>Soiled linens can easily be removed and clean linens are positioned to make the other side of the bed.</li> </ul>

<p>lower corner.</p> <p>d. Tuck in alongside.</p> <p>e. Place the mackintosh and the draw sheet on the bottom sheet and tuck in them together.</p>	
<p>12) Assist the client to roll over the folded (rolled) linen to right side of the bed. Readjust the pillow and top sheet.</p>	<ul style="list-style-type: none"> <li>• Moving the client to the bed other side allows you to make the bed on that side.</li> </ul>
<p>13) Move to left side: Discard the soiled linens appropriately. Hold them away from your uniform. Place them in the laundry bag (or bucket).</p>	<ul style="list-style-type: none"> <li>• Soiled linens can contaminate your uniform, which may come into contact with other clients.</li> </ul>
<p>14) Wipe the surface of the mattress by sponge cloth with wet and dry.</p>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> </ul>
<p>15) Bottom sheet, mackintosh and draw sheet:</p> <p>a. Grasp clean linens and gently pull them out from under the client.</p> <p>b. Spread them over the bed's unmade side. Pull the linens taut</p> <p>c. Tuck the bottom sheet tightly under the head of the mattress and miter the corner.</p> <p>d. Tighten the sheet under the end of the mattress and make mitered the lower corner.</p> <p>e. Tuck in alongside.</p> <p>f. Tuck the mackintosh and the draw sheet under the mattress.</p>	<ul style="list-style-type: none"> <li>• Wrinkled linens can cause skin irritation.</li> </ul>
<p>16) Assist the client back to the center of the bed. Adjust the pillow</p>	<ul style="list-style-type: none"> <li>• The pillow is comfort measure for the client.</li> </ul>
<p>17) Return to right side: Clean top sheet, blanket:</p> <p>a. Place the clean top sheet at the top side of the soiled top sheet.</p> <p>b. Ask the client to hold the upper edge of the clean top sheet.</p> <p>c. Hold both the top of the soiled sheet and the end of the clean sheet with right hand and withdraw to</p>	<ul style="list-style-type: none"> <li>• Tucking these pieces together saves time and provides neat, tight corners.</li> </ul>

<p>downward. Remove the soiled top sheet and put it into a laundry bag (or a bucket).</p> <p>d. Place the blanket over the top sheet. Fold top sheet back over the blanket over the client.</p> <p>e. Tuck the lower ends securely under the mattress. Miter corners.</p> <p>f. After finishing the right side, repeat the left side.</p>	
<p>18) Remove the pillow, replace the pillow cover with clean one, and reposition the pillow to the bed under the client's head.</p>	<ul style="list-style-type: none"> <li>The pillow is a comfortable measure for a client</li> </ul>
<p>19) Replace personal belongings back. Return the bedside locker and the bed as usual.</p>	<ul style="list-style-type: none"> <li>To prevent personal belongings from loss and provide safe surroundings</li> </ul>
<p>20) Return all Equipment's to proper place.</p>	<ul style="list-style-type: none"> <li>To prepare for the next procedure</li> </ul>
<p>21) Discard linens appropriately. Perform hand hygiene.</p>	<ul style="list-style-type: none"> <li>To prevent the spread of infection.</li> </ul>

### POST-OPERATIVE BED

**Definition:**

It is a special bed prepared to receive and take care of a patient returning from surgery.

**Purpose:**

- To receive the post-operative client from surgery and transfer him/her from a stretcher to a bed
- To arrange client's convenience and safety

**Equipment required:**

- Bed sheets:
  - Bottom sheet (1)
  - Top sheet (1)
  - Draw sheet (1-2)
  - Mackintosh or rubber sheet (1-2)
    - \* According to the type of operation, the number required of mackintosh and draw sheet is different.
- Blanket (1)
- Hot water bag with hot water

- (104- 140 °F) if needed (1)
- Tray1(1)
- Thermometer, stethoscope, sphygmomanometer: 1 each
- Spirit swab
- Artery forceps (1)
- Gauze pieces
- Adhesive tape (1)
- Kidney tray (1)
- Trolley (1)
- IV stand
- Client's chart
- Client's cardex
- According to doctor's orders:
  - ✓ Oxygen cylinder with flow meter
  - ✓ O2 cannula or simple mask
  - ✓ Suction machine with suction tube
- Airway
  - ✓ Tongue depressor
  - ✓ SpO2 monitor
  - ✓ ECG
- Infusion pump, syringe pump

### Procedure

Action	Rationale
1) Perform hand hygiene	<ul style="list-style-type: none"> <li>• To prevent the spread of infection</li> </ul>
2) Assemble Equipment's and bring bed-side	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance</li> </ul>
3) Strip bed. Make foundation bed as usual with a large mackintosh, and cotton draw sheet.	<ul style="list-style-type: none"> <li>• Mackintosh prevents bottom sheet from wetting or soiled by sweat, drain or excrement.</li> <li>• Place mackintosh according to operative technique.</li> <li>• Cotton draw sheet makes the client felt dry or comfortable without touching the mackintosh directly.</li> </ul>



4) Place top bedding as for closed bed but do not tuck at foot	<ul style="list-style-type: none"> <li>• Tuck at foot may hamper the client to enter the bed from a stretcher</li> </ul>
5) Fold back top bedding at the foot of bed.	<ul style="list-style-type: none"> <li>• To make the client 's transfer smooth</li> </ul>
6) Tuck the top bedding on one side only.	<ul style="list-style-type: none"> <li>• Tucking the top bedding on one side stops the bedlinens from slipping out of place and</li> </ul>
7) On the other side, do not tuck the top sheet. a. Bring head and foot corners of it at the center of bed and form right angles. b. Fold back suspending portion in 1/3 and repeat folding top bedding twice to opposite side of bed.	<ul style="list-style-type: none"> <li>• The open side of bed is more convenient for receiving client than the other closed side.</li> </ul>
8) Remove the pillow.	<ul style="list-style-type: none"> <li>• To maintain the airway</li> </ul>
9) Place a kidney-tray on bedside.	<ul style="list-style-type: none"> <li>• To receive secretion</li> </ul>
10) Place IV stand near the bed.	<ul style="list-style-type: none"> <li>• To prepare it to hang I/V soon</li> </ul>
11) Check locked wheel of the bed.	<ul style="list-style-type: none"> <li>• To prevent moving the bed accidentally when the client is shifted from a stretcher to the bed.</li> </ul>
12) Place hot water bags (or hot bottles) in the middle of the bed and cover with fan folded top if needed	<ul style="list-style-type: none"> <li>• Hot water bags (or hot bottles) prevent the client from taking hypothermia</li> </ul>
13) When the patient comes, remove hot water bags if put before	<ul style="list-style-type: none"> <li>• To prepare enough space for receiving the client</li> </ul>
14) Transfer the client: a. Help lifting the client into the bed b. Cover the client by the top sheet and blanket immediately c. Tuck top bedding and miter a corner in the end of the bed.	<ul style="list-style-type: none"> <li>• To prevent the client from chilling and /or having hypothermia</li> </ul>

## **RECORDING VITAL SIGNS TEMPERATURE, PULSE, RESPIRATION, BLOOD PRESSURE, INTAKE OUTPUT CHART**

### **Definition:**

Recording vital signs defined as the procedure that takes the sign of basic physiology that includes temperature, pulse, respiration and blood pressure. If any abnormality occurs in the body, vital signs change immediately.

### **Purpose:**

- To assess the client's condition
- To determine the baseline values for future comparisons
- To detect changes and abnormalities in the condition of the client

### **Equipment's required:**

- Oral/ axilla / rectal thermometer (1)
- Stethoscope (1)
- Sphygmomanometer with appropriate cuff size (1)
- Watch with a second hand (1)
- Spirit swab or cotton (1)
- Sponge towel (1)
- Paper bag (2): for clean (1)
  - For discard (1)
- Record form
- Ball- point pen: blue (1)
  - Black (1)
  - Red (1)
- Steel tray (1): to set all materials



Equipment's required of taking a vital sign



### **Stethoscope**

A stethoscope consists of earpieces, tubing, two heads such as the bell and the diaphragm.



### **The bell of head of stethoscope**

The bell has cup-shaped and used to correct low-frequency sounds, such as abnormal heart sounds.



### **The diaphragm of head of stethoscope**

The diaphragm is flat side of the head and used to test high-frequency sounds: breath, normal breath, and bowel sounds.



**Aneroid manometer**

Aneroid manometer is a kind of sphygmomanometer.

## TEMPERATURE

### Taking axillary temperature

#### Definition:

Measuring/ monitoring patient's body temperature using clinical thermometer

#### Purpose:

- To determine body temperature
- To assist in diagnosis
- To evaluate patient's recovery from illness
- To determine if immediate measures should be implemented to reduce dangerously elevated body temperature or converse body heat when body temperature is dangerous low
- To evaluate patient's response once heat conserving or heat reducing measures have been implemented

#### Procedure:

Care Action	Rationale
1. Wash your hands.	<ul style="list-style-type: none"> <li>• Handwashing prevents the spread of infection</li> </ul>
2. Prepare all required equipment's	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance.</li> </ul>
3. Check the client's identification.	<ul style="list-style-type: none"> <li>• To confirm the necessity</li> </ul>
4. Explain the purpose and the procedure to the client.	<ul style="list-style-type: none"> <li>• Providing information fasters cooperation and understanding</li> </ul>
5. Close doors or use a screen.	<ul style="list-style-type: none"> <li>• Maintains client's privacy and minimize embarrassment.</li> </ul>
6. Take the thermometer and wipe it with cottonswab from bulb towards the tube.	<ul style="list-style-type: none"> <li>• Wipe from the area where few organisms are present to the area where more organisms are present to limit spread of infection</li> </ul>
7. Shake the thermometer with strong wrist movements until the mercury line falls to at least 95 °F (35 °C).	<ul style="list-style-type: none"> <li>• Lower the mercury level within the stem so that it is less than the client's potential body temperature</li> </ul>
8. Assist the client to a supine or sitting position.	<ul style="list-style-type: none"> <li>• To provide easy access to axilla.</li> </ul>
9. Move clothing away from shoulder and arm	<ul style="list-style-type: none"> <li>• To expose axilla for correct thermometer bulb placement</li> </ul>

10. Be sure the client's axilla is dry. If it is moist, pat it dry gently before inserting the thermometer.	<ul style="list-style-type: none"> <li>Moisture will alter the reading. Under the condition moistening, temperature is generally measured lower than the real.</li> </ul>
11. Place the bulb of thermometer in hollow of axilla at anterior inferior with 45 degree or horizontally. (Fig. A)	<ul style="list-style-type: none"> <li>To maintain proper position of bulb against blood vessels in axilla.</li> </ul>
12. Keep the arm flexed across the chest, close to the side of the body (Fig. B)	<ul style="list-style-type: none"> <li>Close contact of the bulb of the thermometer with the superficial blood vessels in the axilla ensures more accurate temperature registration.</li> </ul>
13. Hold the glass thermometer in place for 3 minutes.	<ul style="list-style-type: none"> <li>To ensure an accurate reading</li> </ul>
14. Remove and read the level of mercury of thermometer at eye level.	<ul style="list-style-type: none"> <li>To ensure an accurate reading</li> </ul>
15. Shake mercury down carefully and wipe the thermometer from the stem to bulb with spirit swab.	<ul style="list-style-type: none"> <li>To prevent the spread of infection</li> </ul>
16. Explain the result and instruct him/her if he/she has fever or hypothermia.	<ul style="list-style-type: none"> <li>To share his/her data and provide care needed immediately</li> </ul>
17. Dispose of the equipment properly and wash your hands	<ul style="list-style-type: none"> <li>To prevent the spread of infection</li> </ul>
18. Replace all equipment's in proper place.	<ul style="list-style-type: none"> <li>To prepare for the next procedure</li> </ul>
19. Shake mercury down carefully and wipe the thermometer from the stem to bulb with spirit swab	<ul style="list-style-type: none"> <li>To prevent the spread of infection</li> </ul>
20. Record in the client's chart and give signature on the chart.	<ul style="list-style-type: none"> <li>Axillary temperature readings usually are lower than oral readings. Giving signature maintains professional accountability</li> </ul>
21. Report an abnormal reading to the senior staff.	<ul style="list-style-type: none"> <li>Documentation provides ongoing data collection</li> </ul>



Fig. A Placing the glass thermometer  
Into the axilla



Fig. B keeping the forearm across the chest

### **Taking Oral temperature**

Place the thermometer under the tongue for 1 minutes and keeps the lips closed

### **Taking rectal temperature**

Lubricate the thermometer and insert half to 1 inch into the rectum for one minute, then, hold the buttock closed.

The rectal temperature, a core temperature, is considered one of the most accurate routes.

The rectal site should not be used in newborns, children with diarrhea and in patients who had undergone rectal surgery because the insertion of the thermometer into the rectum can slow heart rate by stimulating the vagus nerve

### **Average Normal Temperature for Healthy Adults at various sites**

Axillary	Oral	Rectal
36.5°C/97.7°F	37.0°C/98.6°F	37.5°C/99.5°F

## PULSE

### Measuring a Radial Pulse

**Definition:** Checking presence, rate, rhythm and volume of throbbing of artery.

**Purpose:**

- To determine number of heart beats occurring per minute(rate)
- To gather information about heart rhythm and pattern of beats
- To evaluate strength of pulse
- To assess heart's ability to deliver blood to distant areas of the blood viz. fingers and lower extremities
- To assess response of heart to cardiac medications, activity, blood volume and gas exchange
- To assess vascular status of limbs

**Procedure:**

Care Action	Rationale
1. Wash hands.	<ul style="list-style-type: none"> <li>• Hand washing prevents the spread of infections</li> </ul>
2. Prepare all equipment's required on tray.	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill problems</li> </ul>
3. Check the client's identification	<ul style="list-style-type: none"> <li>• To confirm the necessity</li> </ul>
4. Explain the procedure and purpose to the client.	<ul style="list-style-type: none"> <li>• Providing information fosters cooperation and understanding</li> </ul>
5. Assist the client in assuming a supine or sitting position. a) If supine, place client's forearm straight alongside body with extended straight (Fig. C) or upper abdomen with extended straight (Fig. D) b) If sitting, bend client's elbow 90 degrees and support lower arm on chair (Fig. E) or on nurse's arm slightly flex the wrist (Fig. F)	<ul style="list-style-type: none"> <li>• To provide easy access to pulse sites</li> <li>• Relaxed position of forearm and slight flexion of wrist promotes exposure of artery to palpation without restriction.</li> </ul>
6. Count and examine the pulse a) Place the tips of your first, index, and third finger over the client's radial artery on the inside of the wrist on the thumb side.	<ul style="list-style-type: none"> <li>• The fingertips are sensitive and better able to feel the pulse. Do not use your thumb because it has a strong pulse of its own.</li> <li>• Moderate pressure facilitates palpation of the pulsations. Too</li> </ul>



<p>b) Apply only enough pressure to radial pulse.</p> <p>c) Using watch, count the pulse beats for a full minute.</p> <p>d) Examine the rhythm and the strength of the pulse.</p>	<p>much pressure obliterates the pulse, whereas the pulse is imperceptible with too little pressure</p> <ul style="list-style-type: none"> <li>• Counting a full minute permits a more accurate reading and allows assessment of pulse strength and rhythm.</li> <li>• Strength reflects volume of blood ejected against arterial wall with each heart contraction.</li> </ul>
<p>7. Record the rate on the client's chart. Sign on the chart.</p>	<ul style="list-style-type: none"> <li>• Documentation provides ongoing data collection to maintain professional accountability</li> </ul>
<p>8. Wash your hands</p>	<ul style="list-style-type: none"> <li>• Handwashing prevents the spread of infection</li> </ul>
<p>9. Report to the senior staff if you find any abnormalities.</p>	<ul style="list-style-type: none"> <li>• To provide nursing care and medication properly and continuously</li> </ul>

Fig. C Care Action 5. 1

Placing the client's forearm straight alongside body and putting the fingertips over the radial pulse



Fig E. Care Action 5. 2

Placing the client's forearm on the armrest of chair and putting the fingertips over the radial pulse





Fig. D Care action 5.1

Placing the client's forearm straight  
of across upper abdomen and  
putting the fingertips over the radial  
pulse



Fig. F Care Action 5. 2 Supporting the client's  
forearm by nurse's palm with extended  
straight and putting three fingertips over  
radial pulse

## RESPIRATION

**Definition:** Monitoring the involuntary process of inspiration and expiration in a patient

**Purposes:**

- To determine number of respirations occurring per minute
- To gather information about rhythm and depth
- To assess response of patient to any related therapy/ medication

**Procedure:**

Care Action	Rationale
1. Close the door and/or use screen.	<ul style="list-style-type: none"> <li>• To maintain privacy</li> </ul>
2. Make the client's position comfortable, preferably sitting or lying with the head of the elevated 45 to 60 degrees.	<ul style="list-style-type: none"> <li>• To ensure clear view of chest wall and abdominal movements. If necessary, move the bed linen.</li> </ul>
3. Prepare count respirations by keeping your fingertips on the client's pulse.	<ul style="list-style-type: none"> <li>• A client who knows are counting respirations may not breathe naturally.</li> </ul>
4. Counting respiration: a) Observe the rise and fall of the client's (one inspiration and one expiration). b) Count respirations for one full minute.  c) Examine the depth, rhythm, facial expression, cyanosis, cough and movement accessory.	<ul style="list-style-type: none"> <li>• One full cycle consists of an inspiration and an expiration.</li> <li>• Allow sufficient time to assess respirations, especially when the rate is with an irregular</li> <li>• Children normally have an irregular, more rapid rate. Adults with an irregular rate require more careful assessment including depth and rhythm of respirations.</li> </ul>
5. Replace bed linens if necessary. Record the rate on the client's chart. Sign the chart	<ul style="list-style-type: none"> <li>• Documentation provides ongoing data collection. Giving signature maintains professional accountability</li> </ul>
6. Perform hand hygiene	<ul style="list-style-type: none"> <li>• To prevent the spread of infection</li> </ul>
7. Report any irregular findings to the senior staff.	<ul style="list-style-type: none"> <li>• To provide continuity of care</li> </ul>

## MEASURING BLOOD PRESSURE

**Definition:** Monitoring blood pressure using palpation and/or sphygmomanometer

**Purpose:**

- To obtain baseline data for diagnosis and treatment
- To compare with subsequent changes that may occur during care of patient
- To assist in evaluating status of patient's blood volume, cardiac output and vascular system
- To evaluate patient's response to changes in physical condition as a result of treatment with fluids or medications

**Procedure:** by palpation and aneroid manometer

Care Action	Rationale
1. Wash your hands.	<ul style="list-style-type: none"> <li>• Handwashing prevents the spread of infection</li> </ul>
2. Gather all equipment's. Cleanse the stethoscope's earpieces and diaphragm with a spirit swab wipe.	<ul style="list-style-type: none"> <li>• Organization facilitates performance of the skill.</li> <li>• Cleansing the stethoscope prevents spread of infection.</li> </ul>
3. Check the client's identification. Explain the purpose and procedure to the client.	<ul style="list-style-type: none"> <li>• Providing information fosters the client's cooperation and understanding.</li> </ul>
4. Have the client rest at least 5 minutes before measurement.	<ul style="list-style-type: none"> <li>• Allow the client to relax and helps to avoid falsely elevated readings.</li> </ul>
5. Determine the previous baseline blood pressure, if available, from the client's record.	<ul style="list-style-type: none"> <li>• To avoid misreading of the client's blood pressure and find any changes in his/her blood pressure from the usual</li> </ul>
6. Identify factors likely to interfere with accuracy of blood pressure measurement: exercise, coffee and smoking	<ul style="list-style-type: none"> <li>• Exercise and smoking can cause false elevations in blood pressure.</li> </ul>

<p>7. Setting the position:</p> <p>a) Assist the client to a comfortable position. Be sure room is warm, quiet and relaxing</p> <p>b) Support the selected arm. Turn the palm upward. (Fig. G)</p> <p>c) Remove any constrictive clothing.</p>	<ul style="list-style-type: none"> <li>• The client's perceptions that the physical or interpersonal environment is stressful affect the blood pressure measurement.</li> <li>• Ideally, the arm is at heart level for accurate measurement. Rotate the arm so the brachial pulse is easily accessible.</li> <li>• Not constricted by clothing is allowed to access the brachial pulse easily and measure accurately. Do not use an arm where circulation is compromised in any way.</li> </ul>
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Fig. G Care Action 7. b

Placing the selected arm on the bed and turn the palm upward

Care Action	Rationale
<p>8. Checking brachial artery and wrapping the cuff:</p> <p>a) Palpate brachial artery.</p> <p>b) Center the cuff's bladder approximately 2.5 cm (1 inch) above the site where you palpated the brachial pulse</p> <p>c) Wrap the cuff snugly around the client's arm and secure the</p>	<ul style="list-style-type: none"> <li>• Center the bladder to ensure even cuff inflation over the brachial artery</li> <li>• Loose-fitting cuff causes false high readings.</li> <li>• Appropriate way to wrap is that you can put only two fingers between the arm and cuff.</li> <li>• Improper height can alter perception of reading.</li> </ul>

end approximately (Fig.H) d) Check the manometer whether if it is at level with the client's heart (Fig. I).	
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Fig. H Care Action 8. 3  
Wrapping the cuff with appropriate way of heart



Fig. I Care Action 8. 3  
Placing manometer at the level



Care Action	Rationale
<p>9. Measure blood pressure by two step methods:</p> <p>(A) <u>Palpatory method</u></p> <ol style="list-style-type: none"> <li>a) Palpate brachial pulse distal to the cuff with fingertips of non-dominant hand.</li> <li>b) Close the screw clamp on the bulb.</li> <li>c) Inflate the cuff while still checking the pulse with other hand. (Fig. J)</li> <li>d) Observe the point where pulse is no longer palpable</li> <li>e) Inflate cuff to pressure 20-30 mmHg above point at which pulse disappears.</li> <li>f) Open the screw clamp, deflate the cuff fully and wait 30 seconds.</li> </ol> <p>(B) <u>Auscultation</u></p> <ol style="list-style-type: none"> <li>a) Position the stethoscope's earpieces comfortably in your ears (turn tips slightly forward). Be sure sounds are clear, not muffled.</li> <li>b) Place the diaphragm over the client's brachial artery. Do not allow chest piece to touch cuff or clothing. (Fig. K)</li> </ol>	<ul style="list-style-type: none"> <li>• Palpation identifies the approximate systolic reading. Estimating prevents false low readings, which may result in the presence of an auscultory gap.</li> <li>• Maximal inflation point for accurate reading can be determined by palpation.</li> <li>• Short interval eases any venous congestion that may have occurred.</li> <li>• Each earpiece should follow angle of ear canal to facilitate hearing.</li> <li>• Proper stethoscope placement ensures optimal sound reception.</li> <li>• Stethoscope improperly positioned sounds that often result in false low systolic and high diastolic readings.</li> </ul>





Fig. J Care Action 9. (A) 3 Palpatory method  
Checking brachial artery



Fig. K Care action 9 (B) 2  
Inflating the cuff while

Care Action	Rationale
<p>c) Close the screw clamp on the bulb and inflate the cuff to a pressure 30 mmHg above the point where the pulse had disappeared</p> <p>d) Open the clamp and allow the aneroid dial to fall at rate of 2 to 3 mmHg per second.</p> <p>e) Note the point on the dial when first clear sound is heard. The sound will slowly increase in intensity.</p> <p>f) Continue deflating the cuff and note the point where the sound disappears. Listen for 10 to 20 mmHg after the last sound.</p> <p>g) Release any remaining air quickly in the cuff and remove it.</p> <p>h) If you must recheck the reading for any reason, allow a 1-minute interval before taking blood pressure again.</p>	<ul style="list-style-type: none"> <li>• Ensure that the systolic reading is not underestimated.</li> <li>• If deflation occurs too rapidly, reading may be inaccurate.</li> <li>• This first sound heard represents the systolic pressure or the point where the heart is able to force blood into the brachial artery.</li> <li>• This is the adult diastolic pressure. It represents the pressure that the artery walls exert on the blood at rest.</li> <li>• Continuous cuff inflation causes arterial occlusion, resulting in numbness and tingling of client's arm.</li> <li>• The interval eases any venous congestion and provides for an accurate reading when you repeat the measurement.</li> </ul>
10. Assist the client to a comfortable position. Advise the client of the reading.	<ul style="list-style-type: none"> <li>• Indicate your interest in the client's well-being and allow him/her to participate in care.</li> </ul>
11. Wash your hands.	<ul style="list-style-type: none"> <li>• Handwashing prevents the spread of infection.</li> </ul>
12. Record blood pressure on the client's chart. Sign on the chart. Report any findings to senior staffs.	<ul style="list-style-type: none"> <li>• Documentation provides ongoing data collection.</li> <li>• Giving signature maintains professional accountability</li> </ul>
13. Replace the instruments to proper place and discard.	<ul style="list-style-type: none"> <li>• To prepare for the next procedure.</li> </ul>

### **Conversion of temperature Measurement**

- Formula for converting Centigrade (C) to Fahrenheit (f):  $(C \times 9/5) + 32 = F$
- Formula for converting Fahrenheit (f) to Centigrade (C):  $(F - 32) \times 5/9 = C$

### **MEASURING INTAKE OUTPUT CHART**

Fluid intake and output means fluid intake equal to fluid loss. Intake is any measurable fluid that goes into the client's body. It includes fluids such as water, soup, fruit juice etc. solids composed primarily of liquids such as ice cream, gelatin, that are taken mouth, fluids that are introduced by intra venous route and fluids that are introduced by tube. Output is any measurable fluid that comes from the body such as urine, drainage, vomits, and watery stools.

In certain condition e.g. unconscious patient, surgery of gastrointestinal tract, kidney and cardiac disease, etc. balance is disturbed. This is maintained by an intake and output chart. The main fluid in body is water. Total body water is 60% of body weight. Input of water is regulated mainly through ingested fluids, which in turns depends on thirst. The body's homeostatic control mechanisms, which maintain a constant internal environment, ensure that a balance between fluid gain and fluid loss is maintained. The hormones ADH and Aldosterone play a major role in this.

#### **Purposes**

- To judge the condition of the patient.
- The monitor the fluid and electrolyte balance.
- To assess the fluid requirement.
- To determine the treatment.

#### **Patients who need intake and output charting are:**

- Unconscious patient.
- Patients with diarrhea and vomiting. Patient with kidney and heart disease.
- Patient with burns.
- Patients under ionotropic drugs.
- Patients taking diuretic drugs.
- Pre-operative/pos-operative patients. (Particularly after surgery of urinary tract and gastrointestinal tract). Patient with tube feeding, liquid diet, NPO, I/V fluids, etc.

#### **Equipment**

- Intake/output chart
- Measuring glass to drink fluid
- Jug, bed pan, urinal

- Gloves
- Syringes (20 ml, 50 ml, etc.) for NG tube aspiration.

### **Procedure to record intake**

- Check the physician's instruction.
- Explain the patient and patient party about the importance of maintaining I/O chart.
- Prepare the required equipment and carry them all to the patient's bed side.
- Prepare the fluid to be given orally e.g. tea, fruit juice, milk, glucose water, etc.
- Prepare the IV fluid or tube feeding as advised by the doctor.
- Measures the amount accurately. If a feeding cup is used, measure the capacity of the feeding cup.
- If the patient's own container is used measures the capacity of the container and mark accurately with an adhesive tape.
- Keep the measuring glass near the patient's bed side.
- Record and report date, time, amount, type of fluid, total intake and output for a fluid. Total intake and output for 24 hrs is calculated in the morning by the nurse

### **Procedure to record output**

- Wear disposable gloves to prevent contact with micro-organisms drainage bag or bottle.
- Ask the client to void in a urinal or bed pan of aspiration or vomits.
- Pour the voided urine into a celebrated container or an empty I/V bottle.
- After measuring urine from a client who has an indwelling catheter, place the container under the urine collection bag so that the spout of the bag is above the container but touching it open the spout and permit the urine to flow into the container. Close the spot.
- Holding the container at eye level, read the amount in the container. Discard the urine the toilet.
- If nasogastric tube for aspiration, measure the aspiration fluid and record. Remove gloves and wash hands.
- Record the amount of output each time of the patient's urinals or aspiration by nasogastric tube or vomit in intake output chart.
- In the patient vomits into basin or has diarrhea in bed pan, you should measure them the same as urine.

- Urine output should be at least 30ml/hour for ICU patients, if urine output is less than 30ml/hour then report to doctor.
- Rinse bed pan or urinal, measuring jug and return the proper place.
- Drainage tube.

**Points to remember**

- Intake oral fluid, intravenous fluid, tube feeding and output (emesis, diarrhea, unite suction aspiration, drainage) must be measured carefully and recorded in the appropriate columns on the I/O chart of the patient.
- If the patient passes urine in the bed, estimate the amount of urine passed in ml and make comment on the chart (bed wet).
- Intake output records only the amount of fluid taken. If the patient takes solid food, rec in comment column.
- Many clients can measure and record their own urine output, when it is explained to them.

## A. ORAL CARE

### **Definition:**

Mouth care is defined as the scientific care of the teeth and mouth.

### **Purpose:**

- To keep the mucosa clean, soft, moist and intact
- To keep the lips clean, soft, moist and intact
- To prevent oral infections
- To remove food debris as well as dental plaque without damaging the gum
- To alleviate pain, discomfort and enhance oral intake with appetite
- To prevent halitosis or relieve it and freshen the mouth

### **Equipment required:**

- Tray (1)
- Gauze-padded tongue depressor (1): to suppress tongue
- Torch (1)
- Appropriate equipment for cleaning:
  - ✓ Tooth brush
  - ✓ Foam swabs
  - ✓ Gauze-padded tongue depressor
  - ✓ Cotton ball with artery forceps (1) and dissecting forceps (1)
- Oral care agents:

Tooth paste/ antiseptic solution

### **❖NURSING ALERT**

You should consider nursing assessment, hospital policy and doctor's prescription if there is, when you select oral care agent. Refer to Table 1. on the next page.

•If you need to prepare antiseptic solution as oral care agent: Gallipot (2), antiseptic solution (1) to set up cotton ball after squeezed (1)

- Cotton ball

- Kidney tray (1)
- Mackintosh (1): small size
- Middle towel (1)
- Jug with tap water (1)
- Paper bag (2): for cotton balls (1) for dirt (1)
- Gauze pieces as required: to apply a lubricant
- Lubricants: Vaseline/ Glycerin/ soft white paraffin gel/ lip cream (1)
- Suction catheter with suction apparatus (1): if available
- Disposable gloves (1) pair: if available

**NOTE:**

**TABLE 1. VARIOUS ORAL CARE AGENTS FOR ORAL HYGIENE**

The choice of an oral care agent is dependent on the aim of care. The various agents are available and should be determined by the individual needs of the client.

<b>Agents</b>	<b>Potential benefits</b>	<b>Potential harms</b>
<b>Tap water</b>	To refresh, available	Short lasting, not contain a bactericide
<b>Tooth paste</b>	Not specified To remove debris To refresh	It can dry the oral cavity if not adequately rinsed.
<b>Nystatin</b>	To treat fungal infections	Tastes unpleasant
<b>Chlorhexidine gluconate:</b> A compound with broad-spectrum anti-microbial activity	To suppress the growing of bacteria in doses of 0.01-0.2 % solution	Not be significant to prevent chemotherapy-induced mucositis Tastes unpleasant Stainable teeth with prolonged use
<b>Sodium bicarbonate:</b>	To dissolve viscous mucous	Tastes unpleasant May bring burn if not diluted adequately Can alter oral pH allowing bacteria to multiply
<b>Fluconazole:</b> An orally absorbed antifungal azole, soluble in water	For the treatment of candidiasis of the oropharynx, esophagus and variety of deep tissue sites	not reported

<b>Sucralfate:</b> a mouth-coating agent	Initially for the clients under radiotherapy and chemotherapy To reduce pain of mucositis	not reported
<b>Fluoride</b>	To prevent and arrest tooth decay Especially radiation caries, demineralization and decalcification	To show toxicity in high density
<b>Glycerin and thymol</b>	To refresh	Refreshing lasts only 20-30 seconds. Can over-stimulate the salivary glands leading to reflex action and exhaustion

Other solutions for oral care such as Potassium permanganate (1:5000), Sodium chloride (1 teaspoon to a pint of water), Potassium chloride (4 to 6 %), Hydrogen peroxide (1: 8 solution) are used commonly.

i) Oral care of conscious patient:

**Procedure:**

<b>Care Action</b>	<b>Rationale</b>
1. Explain the procedures	Providing information, fosters cooperation, understanding and participation in care
2. Collect all instruments required	Organization facilitates accurate skill performance
3. Close door and /or put screen	To maintain privacy
Perform hand hygiene and wear disposable gloves if possible	To prevent the spread of infection
4. If you use solutions such as sodium bicarbonate, prepare solutions required.	Solutions must be prepared each time before use to maximize their efficacy
5. Assist the client a comfortable upright position or sitting position	To promote his/her comfort and safety and effectiveness of the care including oral inspection and assessment.
6. <b>Inspect oral cavity</b> <ul style="list-style-type: none"> <li>• Inspect whole the oral cavity, such as teeth, gums, mucosa and tongue, with the aid of gauze-padded tongue depressor and torch</li> <li>• Take notes if you find any abnormalities, e.g., bleeding, swollen, ulcers, sores, etc.</li> </ul>	Comprehensive assessment is essential to determine individual needs  Some clients with anemia, immunosuppression, diabetes, renal impairment epilepsy and taking steroids should be paid attention to oral condition. They may have complication in oral cavity.
7. Place face towel over the client chest or on the thigh with mackintosh (Fig. 1)	To prevent the clothing form wetting and not to give uncomfortable condition
8. Put kidney tray in hand or assist the client holding a kidney tray	To receive disposal surely



Fig.1: Setting the kidney tray up with face towel covered mackintosh



Care Action	Rationale
<p><b>9. Instruct the client to brush teeth</b> <u>Points of instruction</u></p> <ul style="list-style-type: none"> <li>• Client places a soft toothbrush at a 45 °angle to the teeth.</li> <li>• Client brushes in direction of the tips of the bristles under the gum line with tooth paste. Rotate the bristles using vibrating or jiggling motion until all outer and inner surfaces of the teeth and gums are clean.</li> <li>• Client brushes biting surfaces of the teeth</li> <li>• Client clean tongue from inner to outer and avoid posterior direction.</li> </ul>	<ul style="list-style-type: none"> <li>• Effective in dislodging debris and dental plaque from teeth and gingival margin</li> <li>• Cleansing posterior direction of the tongue may cause the gag reflex</li> </ul>
<p>10.If the client cannot tolerate toothbrush (or cannot be available toothbrush), form swabs or cotton balls can be used</p>	<p>When the client is prone to bleeding and/or pain, tooth brush is not advisable</p>
<p><b>11. Rinse oral cavity</b> Ask the client to rinse with fresh water and void contents into the kidney tray. Advise him/her not to swallow water. If needed, suction equipment is used to remove any excess.</p>	<ul style="list-style-type: none"> <li>• To make comfort and not to remain any fluid and debris.</li> <li>• To reduce potential for infection and</li> </ul>
<p>12. Ask the client to wipe mouth and</p>	<ul style="list-style-type: none"> <li>• To make comfort and provide the well-</li> </ul>

around it.	appearance
13. Confirm the condition of client's teeth, gums and tongue. Apply lubricant to lips.	<ul style="list-style-type: none"> <li>To moisturize lips and reduce risk for cracking</li> </ul>
14. Rinse and dry tooth brush thoroughly. Return the proper place for personal belongings after drying up.	<ul style="list-style-type: none"> <li>To prevent the growth of microorganisms</li> </ul>
15. Replace all instruments	<ul style="list-style-type: none"> <li>To prepare Equipment's for the next procedure</li> </ul>
16. Discard dirt properly and safety	<ul style="list-style-type: none"> <li>To maintain standard precautions</li> </ul>
17. Remove gloves and wash your hands	<ul style="list-style-type: none"> <li>To prevent the spread of infection</li> </ul>
18. Document the care and sign on the records.	Documentation provides ongoing data collection and coordination of care Giving signature maintains professional Accountability
19. Report any findings to senior staffs	To provide continuity of care

i) **Oral care of unconscious patient:**



Fig.2: Equipment's required for oral care in depending client

**Procedure:** The procedure with cotton balls-soaked sodium bicarbonate is showed here.

Care Action	Rationale
1. Check client's identification and condition	Providing nursing care for the correct client with appropriate way.
2. Explain the purpose and procedure to the client	Providing information fosters cooperation and understanding.
3. Perform hand hygiene and wear disposable gloves.	To prevent the spread of infection.

<p>4. Prepare Equipment's: Collect all required Equipment's and bring the articles to the bedside. Prepare sodium bicarbonate solutions in gallipot.</p> <p>❖ <b>Nursing Alert</b> ❖ <u>If the client is unconscious, use plain tap water.</u> Soak the cotton ball in sodium bicarbonates solution (3 pinches / 2/3 water in gallipot) with artery forceps. Squeeze all cotton balls excess solution by artery forceps and dissecting forceps and put into another gallipot</p>	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance</li> <li>• Solutions must be prepared each time before use to maximize their efficacy</li> <li>• To reduce potential infection</li> <li>• Cleaning solutions aids in removing residue on the client's teeth and softening encrusted areas.</li> <li>• To avoid inspiration of the solution</li> </ul>
<p>5. Close the curtain or door to the room. Put screen.</p>	<p>It maintains the client's privacy</p>
<p>6. Keep the client in a side lying or in comfortable position.</p>	<ul style="list-style-type: none"> <li>• Proper positioning prevents back strain</li> <li>• Tilting the head downward encourages fluid to drain out of the client's mouth and it prevents aspiration.</li> </ul>
<p><b>Care Action</b></p>	<p><b>Rationale</b></p>
<p>7. Place the mackintosh and towel on the neck to chest.</p>	<p>The towel and mackintosh protect the client and bed from soaking.</p>
<p>8. Put the kidney tray over the towel and mackintosh under the chin. (Fig. 3)</p>	<p>It facilitates drainage from the client's mouth.</p>
<p>9. <b>Inspect oral cavity:</b> Inspect whole the oral cavity, such as teeth, gums, mucosa and tongue, with the aid of gauze-padded tongue depressor and torch. Take notes if you find any abnormalities, e.g., bleeding, swollen, ulcers, etc.</p>	<p>Comprehensive assessment is essential to determine individual needs. Some clients with anemia, immunosuppression, diabetes, renal impairment, epilepsy and taking steroids should be paid attention to oral condition. They may have complication in oral cavity.</p>
<p>10. <b>Clean oral surfaces:</b> (Fig.4) Ask the client to open the mouth and insert the padded tongue depressor gently from the angle of mouth toward the back molar area. You never use your fingers to open the client's mouth.</p>	<p>The tongue depressor assists in keeping the client's mouth open. As a reflex mechanism, the client may bite your fingers.</p>
<p>Clean the client's teeth from incisors to molars using up and down movements from gums to crown.</p>	<p>Friction cleanses the teeth.</p>
<p>Clean oral cavity from proximal to distal, outer to inner parts, using cotton ball for each stroke.</p>	<p>Friction cleanses the teeth.</p>

11. Discard used cotton ball into small kidney tray.	To prevent the spread of infection.
12. Clean tongue from inner to outer aspect.	Microorganisms collect and grow on tongue surface and contribute to bad breath.



Fig.3: Placing a kidney tray on the mackintosh a face towel



Fig. 4: Cleansing teeth with supporting covered Padded tongue depressor

Care Action	Rationale
<p><b>13. Rinse oral cavity:</b> Provide tap water to gargle mouth and position kidney tray. If the client cannot gargle by him/herself, rinse the areas using moistened cotton balls or insert of rubber tip of irrigating syringe into the client's mouth and rinse gently with a small amount of water. Assist to void the contents into kidney tray. If the client cannot spit up, especially in the case of unconscious client, suction any solution.</p>	<p>To remove debris and make refresh</p> <p>Rinsing or suctioning removes cleaning solution and debris.</p> <p>Solution that is forcefully irrigated may cause aspiration.</p> <p>To avoid aspiration of the solution.</p>
14. Confirm the condition of client's teeth, gums, mucosa and tongue.	To assess the efficacy of oral care and determine any abnormalities
15. Wipe mouth and around it. Apply lubricant to lips by using foam swab or gauze piece with artery forceps	Lubricant prevents lips from drying and cracking.
16. Reposition the client in comfortable position.	To provide for the client's comfort and safety.
17. Replace all Equipment's in proper place.	To prepare Equipment's for the next care
18. Discard dirt properly and safety	To maintain standard precautions
19. Remove gloves and perform hand hygiene	To prevent the spread of infection
20. Document the care and sign on the records.	Documentation provides ongoing data collection and coordination of care. Giving signature maintains professional accountability

❖ **Nursing Alert** ❖

**Oral care for the unconscious clients**

1. Special precautions while the procedure:
  - The client should be positioned in the lateral position with the head turned toward the side. (**Rationale:** It can not only provide for drainage but also prevent accidental aspiration.)
  - Suction apparatus is required. (**Rationale:** It prevents aspiration.)
  - To use plain water for cleaning of oral cavity of unconscious clients may be advisable. (Rationale: Potential infection may be reduced by using plain water when the solution flows into the respiratory tract by accident.)
2. Frequency of care:
  - Oral care should be performed at least every four hours. (Rationale: Four hourly care will reduce the potential for infection from microorganisms.)

**B. BED BATH:**

**Definition:**

A bath given to client who is in the bed (unable to bath itself).

**Purpose:**

- To prevent bacteria spreading on skin
- To clean the client's body
- To stimulate the circulation
- To improve general muscular tone and joint
- To make client comfort and help to induce sleep
- To observe skin condition and objective symptoms

**Equipment's required:**

- Basin (2): for without soap (1)  
for with soap (1)
- Bucket (2): for clean hot water (1)  
for waste (1)
- Jug (1)
- Soap with soap dish (1)
- Sponge cloth (2): for wash with soap (1)  
for rinse (1)
- Face towel (1)
- Bath towel (2): (A) for covering over mackintosh (1)  
(B) for covering over client's body (1)
- Gauze piece (2-3)
- Mackintosh (1)
- Trolley (1)

- Thermometer (1)
- Old newspaper
- Paper bag (2): for clean gauze (1)  
for waste (1)

**Procedure: Complete bed bath**

Care Action	Rationale
1. Confirm Dr.'s order. Check client identification and condition.	The bath order may have changed. In some instances, a bed bath may be harmful for a client, who is in pain, hemorrhaging, or weak. Nursing staff need to defer the bath.
2. Explain the purpose and procedure to the client. If he or she is alert or oriented, question the client about personal hygiene preferences and ability to assist with the bath.	Providing information fosters cooperation. Encourage the client to assist with care and to promote independence.
3. Gather all required equipment's.	Organization facilitates accurate skill performance.
4. Wash your hands and put on gloves.	To prevent the spread of organisms. Gloves are optional but you must wear them if you are giving perineal and anal care.
5. Bring all Equipment's to bed-side.	Organization facilitates accurate skill performance.
6. Close the curtain or the door.	To ensure that the room is warm. To maintain the client's privacy.
7. Put the screen or curtain.	To protect the client's privacy.
8. Prepare hot water (60°C).	Water will cool during the procedure.
9. Remove the client's cloth. Cover the client's body with a top sheet or blanket. If an IV is present on the client's upper extremity, thread the IV tubing and bag through the sleeve of the soiled cloth. Rehang the IV solution. Check the IV flow rate.	Removing the cloth permits easier access when washing the client's upper body. Be sure that IV delivery is uninterrupted and that you maintain the sterility of the setup.
10. Fill two basins about two-thirds full with warm water (43-46°C or 110-115F).	Water at proper temperature relaxes him/her and provides warmth. Water will cool during the procedure.
11. Assist the client to move toward the side of the bed where you will be working. Usually, you will do most work with your dominant hand.	Keep the client near you to limit reaching across the bed.

<p><b>12. Face, neck, ears:</b></p> <ul style="list-style-type: none"> <li>• Put mackintosh and big towel <b>(A)</b> under the client's body from the head to shoulders. Place face towel under the chin which is also covered the top sheet.</li> <li>• Make a mitt with the sponge towel and moisten with plain water.</li> <li>• Wash the client's eyes. Cleanse from inner to outer corner. Use a different section of the mitt to wash each eye.</li> <li>• Wash the client's face, neck, and ears.</li> <li>• Use soap on these areas only if the client prefers. Rinse and dry carefully.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the bottom sheet from making wet.</li> <li>• Soap irritates the eyes.</li> <li>• Washing from inner to outer corner prevents sweeping debris into the client's eyes. Using a separate portion of the mitt for each eye prevents the spread of infection.</li> <li>• Soap is particularly drying to the face.</li> </ul>
<p><b>13. Upper extremities:</b></p> <ul style="list-style-type: none"> <li>• Move the mackintosh and big towel <b>A</b> to under the client's far arm.</li> <li>• Uncover the far arm.</li> <li>• Fold the sponge cloth and moisten.</li> <li>• Wash the far arm with soap and rinse. Use long strokes: wrist to elbow → elbow to shoulder → axilla → hand</li> <li>• Dry by face towel</li> <li>• Move the mackintosh and big towel <b>A</b> to under the near arm and uncover it</li> <li>• Wash, rinse, and dry the near arm as same as procedure 4.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent sheet from making wet</li> <li>• Washing the far side first prevents dripping bath water onto a clean area.</li> <li>• Long strokes improve circulation by facilitating venous return</li> </ul>
<p><b>14. Chest and abdomen:</b></p> <ul style="list-style-type: none"> <li>• Move the mackintosh and bath towel <b>A</b> to under the upper trunk</li> <li>• Put another bath towel <b>B</b> to over the chest</li> <li>• Fold the sponge towel and moisten</li> <li>• Wash breasts with soap and rinse. Dry by the big towel covering.</li> <li>• Move the bath towel <b>B</b> covering the chest to abdomen.</li> <li>• Fold the sponge cloth and moisten.</li> <li>• Wash abdomen with soap, rinse and dry</li> <li>• Cover the trunk with top sheet and remove the bath towel <b>B</b> from the abdomen.</li> </ul>	<ul style="list-style-type: none"> <li>• Mackintosh and bath towel <b>A</b> prevent sheet from wetting</li> <li>• Bath towel <b>B</b> provides warmth and privacy</li> </ul>
<p>15. Exchange the warm water.</p>	<p>Cool bath water is uncomfortable. The water is probably unclean. You may change water earlier if necessary to maintain the proper temperature.</p>

<p><b>16. Lower extremities:</b></p> <ul style="list-style-type: none"> <li>• Move the mackintosh and bath towel A to under the far leg. Put pillow or cushion under the bending knee. Cover the near leg with bath towel B.</li> <li>• Fold the sponge cloth and moisten.</li> <li>• Wash with soap, rinse and dry.</li> <li>• Direction to wash: From foot joint to knee → from knee to hip joint.</li> <li>• Repeat the same procedure as 16.1- 3 on the near side.</li> <li>• Cover the lower extremities with top sheet Remove the cushion, mackintosh and big towel A.</li> </ul>	<p>Pillow or cushion can support the lower leg and makes the client comfort.</p>
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<b>Care Action</b>	<b>Rationale</b>
17. Turn the client on left lateral position with back towards you.	To provide clear visualization and easier contact to back and buttocks care.
<p><b>18. Back and buttocks:</b></p> <ul style="list-style-type: none"> <li>• Move the mackintosh and big towel A under the trunk.</li> <li>• Cover the back with big towel B.</li> <li>• Fold the towel and moisten. Uncover the back.</li> <li>• Wash with soap and rinse. Dry with big towel B.</li> <li>• Back rub if needed.</li> <li>• Remove the mackintosh and big towel A.</li> </ul>	Skin breakdown usually occurs over bony prominences. Carefully observe the sacral area and back for any indications.
19. Return the client to the supine position.	To make sustainable position for perineal care.
20. Perineal care: *See our nursing manual “Perineal care”	Clean the perineal area to prevent skin irritation and breakdown and to decrease the potential odor.
21. Assist the client to wear clean cloth.	To provide for warmth and comfort
22. After bed bath: <ul style="list-style-type: none"> <li>• Make the bed tidy and keep the client in comfortable position.</li> <li>• Check the IV flow and maintain it with the speed prescribed if the client is given IV.</li> </ul>	<ul style="list-style-type: none"> <li>• These measures provide for comfort and safety</li> <li>• To confirm IV system is going properly and safely</li> </ul>
23. Document on the chart with your signature and report any findings to senior staff.	<ul style="list-style-type: none"> <li>• Documentation provides coordination of care</li> <li>• Giving signature maintains</li> </ul>



	professional accountability.
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### C. HAIR WASH:

**Definition:**

Hair washing defines that is one of general care provided to a client who cannot clean the hair by himself/herself.

**Purpose:**

- To maintain personal hygiene of the client
- To increase circulation to the scalp and hair and promote growing of hair
- To make him/her feel refreshed

**Equipment's required:**

- Mackintosh (2): to prevent wet (1)
- Big towel (2): to cover mackintosh (1) to round the neck (1)
- Middle towel (1)
- Shampoo or soap (1)
- Hair oil (1): if necessary
- Brush, comb: (1)
- Paper bag (2): for clean (1)
- for dirty (1)
- Cotton ball with oil or non-refined cotton
- Bucket (2): for hot water (1)
- for wasted water (1)
- Plastic jug (1)
- Cloth pin or clips (2)
- Steel Tray (1)
- Kidney tray (1)
- Cushion or pillow (1)
- Clean cloth if necessary
- Old newspaper
- Trolley (1)

**Procedure:**

Care Action	Rationale
1. Perform hand hygiene	To prevents the spread of infection
2. Gather all Equipment's	Organization facilitates accurate skill performance
3. Check the condition of client. Explain the purpose and the procedure to the client.	Proper explanation may allay his/her anxiety and foster cooperation
4. Bring and set up all Equipment's to the bed-side	To save the time and promote effective care

5. Help the client move his/her head towards edge of the bed and remove the pillow from the head.	To arrange appropriate position with considering your body mechanics
6. Put another pillow or a cushion under the bending knee. Make him/her comfortable position.	Putting a pillow or a cushion could prevent from having some pain while the hair washing process.
<p>7. Setting mackintosh and towel to the client:</p> <ul style="list-style-type: none"> <li>• Place a mackintosh covered a big towel under the upwards from the client head to the shoulders of client</li> <li>• Have a big towel around hisher neck</li> <li>• Roll another mackintosh to make the shape of a funnel, by using the way to hold from both sides in a slanting way. The narrow end should be folded and put under the client's neck and the free end should be put into the bucket to drain for the waste water.</li> <li>• Put the folding mackintosh under the client'sneck.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the sheet from soiling</li> <li>• To prevent the cloth and the body from soling</li> <li>• To induce water drainage</li> </ul>
<p>8. Washing: Brush the hair.</p> <ul style="list-style-type: none"> <li>• Insert the cotton balls into the ears</li> <li>• Wet the hair by warm water and wash it roughly.</li> <li>• Apply soap or shampoo and massage the scalp well while washing the hair using finger nails.</li> <li>• Rinse the hair and reapply shampoo for a second washing, if indicated.</li> <li>• Rinse the hair thoroughly</li> <li>• Apply conditioner if requested or if the scalp appears dry.</li> </ul>	<ul style="list-style-type: none"> <li>• To remove dandruff and fallen hairs, and make the hair easier washing.</li> <li>• To prevent water from entering into the ears</li> </ul>
<p>9. Wrapping the hair:</p> <ul style="list-style-type: none"> <li>• Remove the cotton balls from the ears into the paper bag and mackintosh with the towel from the client's neck.</li> <li>• Wrap the hairs in the big towel which are used to cover the client's neck part.</li> </ul>	
<p>10. Drying the hair:</p> <ul style="list-style-type: none"> <li>• Wipe the face and neck if needed</li> <li>• Dry the hair as quick as possible</li> <li>• Massage the scalp with oil as required</li> <li>• Comb the hair and arrange the hair according to the client's preference</li> <li>• Make the client tidy and provide comfortable position</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent him/her from becoming chilled</li> <li>• To increase circulation of the scalp and promote sense of well-being</li> <li>• To raise self-esteem</li> </ul>

11. Clean the Equipment's and replace them to proper place. Discard dirty.	To prepare for the next procedure
12. Perform hand hygiene	To prevent the spread of infection
13. Document the condition of the scalp, hair and any abnormalities on the chart with your signature. Report any abnormalities to senior staff.	<ul style="list-style-type: none"> <li>• Documentation provides coordination of care</li> <li>• Giving signature maintains professional accountability</li> </ul>

#### **D. BACK CARE:**

**Definition:**

Back care means cleaning and massaging back, paying special attention to pressure points. Especially back massage provides comfort and relaxes the client, thereby it facilitates the physical stimulation to the skin and the emotional relaxation.

**Purpose:**

- To improve circulation to the back
- To refresh the mood and feeling
- To relieve from fatigue, pain and stress
- To induce sleep

**Equipment's required:**

- Basin with warm water (2)
- Bucket for waste water (1)
- Gauze pieces (2)
- Soap with soap dish (1)
- Face towel (1)
- Sponge cloth (2): 1 for with soap  
1 for rinse
- Big Towel (2): 1 for covering a mackintosh  
1 for covering the body
- Mackintosh (1)
- Oil/ Lotion/ Powder (1): according to skin condition and favor
- Tray (1)
- Trolley (1)
- Screen (1)

**Procedure:**

<b>Care Action</b>	<b>Rationale</b>
1. Perform hand hygiene	To prevent spread of infection
2. Assemble all Equipment's required.	Organization facilitates accurate skill performance
3. Check the client's identification and condition.	To assess sufficient condition on the client
4. Explain to the client about the purpose and the procedure.	Providing information fosters cooperation

5. Put all required Equipment's to the bed-side and set up.	Appropriate setting can make the time of the procedure minimum and effective.
6. Close all windows and doors, and put the screen or and utilize the curtain if there is.	To ensure that the room is warm. To maintain the privacy.
7. Placing the appropriate position: Move the client near towards you.  Turn the client to her/ his side and put the mackintosh covered by big towel under the client's body.	To make him/her more comfortable and provide the care easily. Mackintosh can avoid the sheet from wetting.
8. Expose the client's back fully and observe it whether if there are any abnormalities.	<ul style="list-style-type: none"> <li>To find any abnormalities soon is important to that you prevent more complication and/ or provide proper medication and/or as soon as possible.</li> <li>If you find out some redness, heat or sores, you cannot give any massage to that place.</li> <li>If the client has already some red sore or broken- down area, you need to report to the senior staff and /or doctor.</li> </ul>
9. Lather soap by sponge towel. Wipe with soap and rinse with plain warm water.	To make clean the back before we give massage with oil/ lotion/ powder.
10. Put some lotion or oil into your palm. Apply the oil or the lotion and massage at least 3-5 minutes by placing the palms: from sacral region to neck from upper shoulder to the lowest parts of buttocks.	<ul style="list-style-type: none"> <li>Don't apply oil or lotion directly to the back skin. Too much apply may bring irritation and discomfort.</li> </ul>
11. Help for the client to put on the clothes and return the client to comfortable position.	To provide for warmth and comfort
12. Replace all Equipment's in proper place.	To prepare for the next procedure
13. Perform hand hygiene.	To prevent the spread of infection
14. Document on the chart with your signature, including date, time and the skin condition. Report any findings to senior staff.	<ul style="list-style-type: none"> <li>Documentation provides coordination of care</li> <li>Giving signature maintains professional accountability</li> </ul>

### E. NAIL CARE:

#### Definition:

Nail cutting that one of nursing care and general care for personal hygiene is to cut nails on hands and feet.

#### Purpose:

- To keep nails clean
- To make neatness
- To prevent the client's skin from scratching
- To avoid infection caused by dirty nail

**Equipment's required:**

- Nail Cutter (1)
- Gallipot with water (1): for cotton
- Kidney tray (1)
- Sponge cloth (1)
- Middle towel (1)
- Mackintosh (1)
- Plastic bowl in small size (1)
- Soap with soap dish (1)



Fig.5: Equipment's required for nail cutting

**Procedure: Caring for Fingernails**

Care Action	Rationale
1. Perform hand hygiene	To prevent the spread of infection
2. Gather all the required Equipment's.	Organization facilitates accurate skill Performance
3. Check the client's identification.	To assess needs
4. Explain to the client about the purpose and the procedure.	Providing explanation fosters cooperation
5. Put all the required Equipment's to the bed-side and set up it.	To save the time and promote effective care
6. Assist the client to a comfortable upright position.	To provide for comfort
In sitting position: Soaking	
<ul style="list-style-type: none"> <li>• Put a mackintosh with covering towel on the bed.</li> </ul>	Mackintosh can prevent the sheet from

<ul style="list-style-type: none"> <li>Put the basin with warm water over the mackintosh.</li> <li>Soak the client's fingers in a basin of warm water and mild soap.</li> <li>Scrub and wash them up.</li> <li>Dry the client's hands thoroughly by using the middle towel covering the mackintosh.</li> </ul>	wetting  To make nails soft, thereby you can cut nails easily and safety
Cutting <ul style="list-style-type: none"> <li>Trim the client's nails with nail clippers.</li> <li>Wipe all fingernails from thumb to 5<sup>th</sup> nail side by side by wet cotton ball. One cotton ball is used for one nail finger.</li> <li>Shape the fingernails with a file, rounding the corners and wipe both hands by a sponge towel.</li> </ul>	Special orders are required before cutting the nails or cuticles of a client with diabetes to avoid accidental injury to soft tissues.
8. Replace Equipment's and discard dirty.	To prepare Equipment's for the next procedure
9. Perform hand hygiene.	To prevent the spread of infection

### Procedure: Caring for Toenails

Follow the same procedure as for the fingernails with some exceptions:

Care Action	Rationale
Cutting <ul style="list-style-type: none"> <li>Cut toenails straight across and do not round off the corners.</li> <li>Do not shape corners.</li> </ul>	<ul style="list-style-type: none"> <li>Cutting into the corners may cause ingrown nails. If the nails tend to grow inward at the corners, place a wisp of cotton under the nail to prevent toe pressure.</li> <li>A notch cut in the center will pull in edges and corners. Sometimes, very thick, hard toenails require surgical removal.</li> </ul>

### ❖ NURSING ALERT ❖

Never cut the toenails of the clients with diabetes or hemophilia. These clients are particularly susceptible to injury.

## BOWELCARE

### A. ENEMA

#### DEFINITION

Enema is the introduction of plain or medicated fluid into the rectum.

Enema means introduction of solution into the large intestine for removing faeces and cleaning the bowel.

#### PURPOSES

- To relieve constipation, flatulence or distension.
- To prevent involuntary escape of fecal matter during surgical procedure and delivery.
- To promote visualization of the intestinal tract during a radiographic or instrumental examination like proctoscopy.
- To stimulate peristalsis
- Pre- operative preparation for bowel surgeries.
- To sooth or treat irritated mucosa of the colon.
- To supply fluids, nutrients or medications like sedatives.
- To induce labour.
- To relieve the retention of urine by reflex stimulation of bladder.
- To diagnose disease conditions of the colon such as ulcer, tumors or new growth.
- To established regular bowel functions during bowel training program.

## **TYPES**

- A. Irrigating enema
- B. Retention enema

## **IRRIGATING ENEMA**

### **DEFINITION**

This types of enema is expel completely up to 30min after instillation

### **ARTICLE REQUIRED:**

A tray containing:

- Enema container with attached rectal tube and clamp
- Lubricant for the rectal tube
- Small mackintosh
- A small green sheet
- Cotton swabs
- Screen for privacy
- Prescribed amount of ordered lukewarm solution
- Gloves
- Kidney tray
- Bed pan with cover
- Enema stand

### **PROCEDURE**

1. Explain the procedure to the patient.
2. Provide privacy for the patient.
3. Wash hands.
4. Take all the Equipment's to the bed side.
5. Place the mackintosh under the patient.
6. Apply green sheet above the mackintosh.

7. Remove the pillow from the patients bed.
8. Position the patient in left lateral position with their knee flexed.
9. Gently examine the rectal tube about 4 inch into the patient's rectum. Unclamp the rectal tube and allow the fluid to flow into the patient.
10. If the patient feel any discomfort, lower the enema container.
11. When the enema container is nearly empty, clamp the rectal tube and withdraw the rectal tube gently from the patient's rectum.
12. Place the rectal tube into the kidney tray.
13. Tell the patient to hold the fluid inside for 20-30 min.
14. Place the bed pan in position.
15. Once the enema has taken effect, assist in cleaning the patient.
16. Assist the patient to take a comfortable position.
17. Remove and replace the article after cleaning.
18. Wash hands.
19. Record the effectiveness of the enema in the patients chart.

## **RETENTION ENEMA**

### **DEFINITION**

Retention enemas are retained in the bowel for a prolonged period for different reasons.

### **PURPOSE:**

- To use an emollient by softening the tissue
- To replace electrolytes
- To administer medications

### **ARTICLES REQUIRED:**

A tray containing

- IV set with clamp for the rectal tube
- Water-soluble lubricant
- Small mackintosh
- Small green sheet
- Kidney dish
- Rectal tube
- Funnel and small container
- Ordered solution e.g : olive oil
- Syringe for administering medication
- Adhesive tape

### **PROCEDURE**

1. Explain the procedure to the patient
2. Provide privacy for the patient
3. Wash hands
4. Take all the Equipment's to the bed side
5. Place the mackintosh under the patient
6. Apply green sheet above the mackintosh.



7. Remove the pillow from the patient's bed.
8. Position the patient in left lateral position with knee flexed
9. Gently insert the rectal tube about 4inchs into the patient's rectum. Unclamp the rectal tube and allow the fluid to flow into the patient.
10. Lubricate the rectal tube and gently insert it about four inches into the patient's rectum.
11. Instillation of medication: attach a syringe filled with ordered medication to the rectal tube and slowly instill the medication.  
 Instillation of olive oil: attach the funnel to the rectal tube and slowly pour the olive oil into the funnel.  
 Instillation of replacement solution: attach the solution to IV tubing so that it is attached to the rectal tube. Unclamp the IV tubing and install the ordered solution.
12. After instilling the fluid, hold the patient's buttocks together
13. Instruct the patient to avoid defecation for 30min
14. Assist the patient to take a comfortable position
15. Remove and replace articles after cleaning
16. Wash hands
17. Record the effectiveness of the enema in the patient's chart.

### **NURSING ALERT**

- Check the temperature of the solution before administering to prevent burning the patient
- Always place the patient in left lateral position unless contraindicated.
- Infant dose: 250ml or less, children dose: 250-500ml, adult dose 500-1000ml
- Always check the doctor's order for the correct medication or solution.

## **B. RECTAL SUPPOSITORY**

### **DEFINITION**

A suppository is a conical or oval solid substance shaped for easy insertion into a body cavity and designed to melt at body temperature.

### **PURPOSE**

To soften the stool.

To stimulate the defecation and treat constipation

To clean bowels

### **ARTICLES REQUIRED**

A tray containing

- Gloves
- Suppository as required
- Bed pan if necessary
- Warm water

## **PROCEDURE**

1. Explain the procedure to the patient and position the patient
2. Keep the patient in left lateral position
3. Wear gloves
4. Prepare medicine/ pill out the suppository
5. Push the suppository inside the rectum gently
6. Allow to retain suppository for at least 20min, then allow to toilet or provide bed pan
7. Wash hands
8. Record the result of procedure

## **NURSING ALERT**

Patient should not allow defecating for 20mins after application of suppository.

## **BLADDER CARE**

### **A. URINARY CATHETERIZATION**

#### **Definition:**

Urinary catheterization is the process of introduction of a catheter through the urethra into the bladder by maintaining aseptic technique for the purpose of withdrawing urine.

#### **Purposes:**

- To relieve urinary retention.
- To obtain a sterile urine specimen.
- To measure the amount of residual urine in the bladder.
- To obtain a urine specimen when a specimen cannot secure satisfactory by other means.
- To empty bladder before and during surgery and before certain diagnostic examinations.

#### **Equipment's Required:**

- Dressing trolley
- Catheterization set containing:
  - ✓ Kidney tray
  - ✓ Sponge forceps
  - ✓ Gauze pieces
  - ✓ Peri sheet
  - ✓ Cotton ball
  - ✓ Sterile bottle (for specimen)
- Lubricant(Xylocaine jelly/KY jelly)
- Sterile urinary catheter according to the size of the lumen. (Number 14/16 French for adult female, 18/20 French for adult male, number 8 /10 French catheters are commonly used for children.)
- Syringe with 10cc of sterile water
- Urobag
- Rubber mackintosh or draw sheet

- Sterile gloves
- Betadine
- Adhesive tape
- Screen for privacy
- Flash light or lamp

**Preparation of the Patient:**

1. **Adequate exploration:** On some instances, catheterization is the last resort, use other techniques first for drawing out the urine before proceeding to catheterization.
2. **Position:** Dorsal recumbent for the female and supine for the male using a firm mattress or treatment table, Sim's or lateral position can be an alternate for the female patient
3. **Provision for privacy**

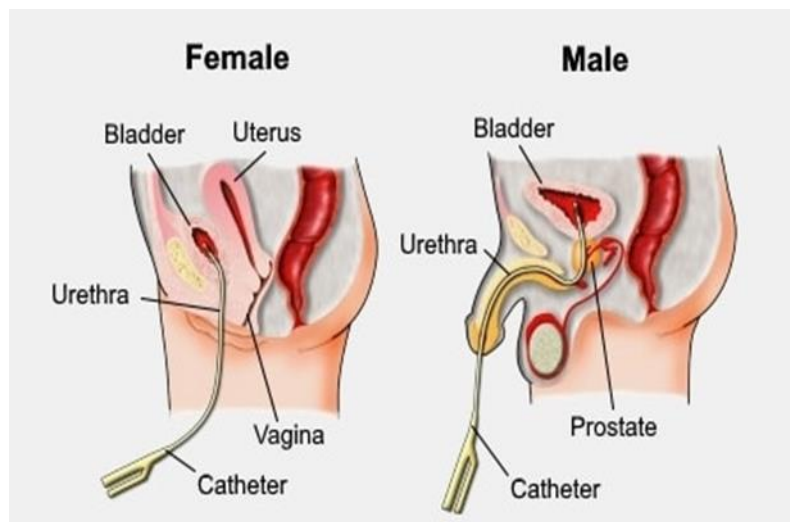


Figure: Placement of urinary catheter

**Procedure:**

S.N.	Care action	Rationale
1.	Explain to the patient and family about the procedure while maintaining privacy.	Explanation encourages patient cooperation and reduces apprehension.
2.	Place the patient in the lithotomy position. Provide for good light.	Proper positioning allows adequate visualization of the urinary meatus. Good lighting is necessary to see the meatus clearly.
3.	Bring the necessary Equipment's to the bedside. Place the mackintosh and draw sheet under the hip and place the kidney dish between the patient's legs.	Prevents spoilage in the bed.
4.	Open the catheterization set (by the assistant if available).	Placement of equipment near worksite increases efficiency.

5.	Wash hands with soap and water. Open the sterile tray and wear sterile gloves.	Hand hygiene reduces the spread of microorganisms. Gloves reduce the risk of exposure to blood and body fluids.
6.	Clean the vagina/penis with betadine swabs. Move from the inside to the outside starting at the top to downward.	Cleaning reduces microorganisms near the urethral meatus and provides opportunity to visualize perineum and landmarks prior to procedure.
7.	Take Xylocaine/KY Jelly in one piece of gauze and hold the catheter. Then apply Xylocaine/KY Jelly on the tip of the catheter.	Lubrication facilitates catheter insertion and reduces tissue trauma.
8.	Insert the catheter gently into the meatus 4 to 5 cm for females and 17 to 20 cm for males. Once urine starts to flow, hold the catheter in place with the left hand to prevent the catheter from slipping out.	Bladder or sphincter contraction could push the catheter out.
9.	Collect the urine in the specimen bottle, if needed.	
10.	Connect the Urobag to the Foley's catheter, if continuous drainage is needed. Expand the balloon with sterile water (according to the capacity of the balloon). Apply tape to secure the catheter to the inner thigh.	This facilitates connection of the catheter to the drainage system and provides for easy access. Closed drainage system minimizes the risk for microorganisms being introduced into the bladder. Improper inflation can cause patient discomfort and mal-positioning of catheter.
11.	Remove equipment and dispose of according to facility policy Wash and dry the perineal area as needed.	Proper disposal prevents the spread of microorganisms. Cleaning promotes comfort and appropriate personal hygiene.
12.	Place the patient in a comfortable position	Positioning and covering provide warmth and promote comfort.
13.	Measure and observe the urine output.	Provides baseline data.
14.	Clean all Equipment's and replace them. Remove gloves and wash hands.	Hand hygiene deters the spread of microorganisms.
15.	Record and report the following about the procedure:  Date and time. Amount of urine output	Provide evidence for future.

	Any abnormality of colour, odor, sedimentation Signature of nursing staff.	
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**\*Nursing Alert\***

1. Label the specimen clearly.
2. Send the specimen to the laboratory for testing if needed.
3. Instruct the patient to report if burning and discomfort occurs.

**B. APPLYING A CONDOM CATHETER**

**Definition:**

To allow for urinary drainage externally while maintaining skin integration and preventing Urinary Tract Infection (UTI).

**Purpose:**

- To prevent soiling from urinary incontinence.
- To collect urinary specimen.
- To prevent and treat skin irritation.

**Articles Required:**

A tray containing:

- Disposal condom
- Hypoallergic tape
- Urinary drainage bag and tubing
- Clean disposable gloves
- Soap and sponge towel
- Towel
- Tincture Benzoin/Betadine

**Procedure:**

S.N.	Care action	Rationale
1.	Explain to the patient and family about the procedure while maintaining privacy.	Explanation encourages patient cooperation and reduces apprehension.
2.	Position the patient in supine position. Provide for good light.	Proper positioning allows adequate visualization of the urinary meatus. Good lighting is necessary to see the meatus clearly.

3.	Bring the necessary equipment to the bedside. Place the mackintosh and draw sheet under the hip and place the kidney dish between the patient's legs.	Prevents spoilage in the bed.
4.	Open the catheterization set (by the assistant if available).	Placement of equipment near worksite increases efficiency.
5.	Wash hands with soap and water. Open the sterile tray and wear sterile gloves.	Hand hygiene reduces the spread of microorganisms. Gloves reduce the risk of exposure to blood and body fluids.
6.	Clean the genital area; retract the foreskin and clean glans of penis, tip of penis first in circular motion from the meatus outward. Clean the shaft of the penis using downward strokes toward the pubic area. Rinse and dry. Remove gloves and perform hand hygiene again.	Cleaning removes urine, secretions and microorganisms. Cleaning and drying helps to minimize skin irritation.  Hand hygiene reduces the spread of microorganisms.
7.	Place the condom sheath outward onto itself over the Glans penis and roll along with the penis shaft. Leave 1" to 2"(2.5-5cm) of space between tip of penis and end of condom sheath.	Allows for easier application. Space prevents irritation to tip of penis and allows free drainage of urine.
8.	Attach the condom catheter to the drainage system. Check catheter and tubing to ensure drainage.	This facilitates connection of the catheter to the drainage system and provides for easy access. Closed drainage system minimizes the risk for microorganisms being introduced into the bladder
9.	Make patient comfortable	Positioning and covering provide warmth and promote comfort.
10.	Remove the gloves and replace articles. Wash hands.	Hand hygiene deters the spread of microorganisms.
11.	Document the procedure.	Provide evidence for future.



## **C. CATHETER CARE**

### **C.1 CARING FOR THE PATIENT WITH AN INDWELLING CATHETER**

#### **\*Nursing Alert\***

- Be sure to wash hands before and after caring for a patient with an indwelling catheter.
- Clean the perineal area thoroughly, especially around the meatus, twice a day and after each bowel movement. This helps prevent organisms for entering the bladder
- Use soap or detergent and water to clean the perineal area and rinse the area well
- Make sure that the patient maintains a generous fluid intake. This helps prevent infection and irrigates the catheter naturally by increasing urinary output
- Encourage the patient to be up and about as ordered
- Record the patient's intake and output
- Note the volume and character of urine and record observations carefully
- Teach the patient the importance of personal hygiene, especially the importance of careful cleaning after having bowel movement and thorough washing of hands frequently
- Report any signs of infection promptly. These include a burning sensation and irritation at the meatus, cloudy urine, a strong odor to the urine, an elevated temperature and chills
- Plan to change indwelling catheters only as necessary. The usual length of time between catheter changes varies and can be anywhere from 5 days to 2 weeks. The less often a catheter is changed, the less the likelihood than an infection will develop

### **C.2.REMOVING THE INDWELLING CATHETER AND AFTERCARE OF THE PATIENT**

#### **\*Nursing Alert\***

- Be sure the balloon is deflated before attempting to remove the catheter. This may be done by inserting a syringe into the balloon valve and withdrawing the distilled water.
- Have the patient take several deep breaths to help him relax while gently removing the catheter. Wrap the catheter in a towel or disposable, waterproof drape.



- Clean the area at the meatus thoroughly with antiseptic swabs after the catheter is removed.
- See to it that the patient's fluid intake is generous and record the patient's intake and output. Instruct the patient to void into the bedpan or urinal.
- Observe the urine carefully for any signs of abnormality.
- Record and report any usual signs such as discomfort, a burning sensation when voiding, bleeding and changes in vital signs, especially the patient's temperature. Be alert to any signs of infection and report them promptly.

## **COLLECTING BLOOD SPECIMEN**

### **A. PERFORMING VENIPUNCTURE**

#### **Definition**

Venipuncture is using a needle to withdraw blood from a vein, often from the inside surface of the forearm near the elbow.

#### **Purpose**

- To examine the condition of client and assess the present treatment.
- To diagnose disease

#### **Equipment required**

- Laboratory form
- Sterilized syringe
- Sterilized needles
- Tourniquet (1)
- Blood collection tubes or specimen vials as ordered
- Spirit swabs
- Dry gauze
- Disposable Gloves if available (1)
- Adhesive tape or bandages
- Sharps Disposal Container (1)
- Steel Tray (1)
- Ball point pen (1)

#### **Procedure:**

<b>S.N.</b>	<b>Care action</b>	<b>Rationale</b>
1.	<ul style="list-style-type: none"> <li>• Identify the patient.</li> </ul>	<ul style="list-style-type: none"> <li>• This information must match</li> </ul>

	<ul style="list-style-type: none"> <li>• Outpatient are called into the phlebotomy area and asked their name and date of birth.</li> <li>• Inpatients are identified by asking their name and date of birth.</li> </ul>	the requisition.
2.	<ul style="list-style-type: none"> <li>• Reassure the client that the minimum amount of blood required for testing will be drawn</li> </ul>	<ul style="list-style-type: none"> <li>• To perform once properly without any unnecessary venipuncture</li> </ul>
3.	<ul style="list-style-type: none"> <li>• Assemble the necessary equipment appropriate to the client's physical characteristics.</li> </ul>	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance</li> </ul>
4.	<ul style="list-style-type: none"> <li>• Explain to the client about the purpose and the procedure.</li> </ul>	<ul style="list-style-type: none"> <li>• Providing explanation fosters his/her cooperation and allays anxiety.</li> </ul>
5.	<ul style="list-style-type: none"> <li>• Perform hand hygiene and put on gloves if available.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the infection of spreading.</li> </ul>
6.	<p><u>Positioning</u></p> <ul style="list-style-type: none"> <li>• Make the client to be seated comfortably or supine position.</li> <li>• Assist the client with the arm extended to form a straight-line from shoulder to wrist.</li> <li>• Place a protective sheet under the arm.</li> </ul>	<ul style="list-style-type: none"> <li>• To make the position safe and comfortable is helpful to success venipuncture at one try.</li> <li>• To prevent the spread of blood</li> </ul>
7.	<ul style="list-style-type: none"> <li>• Check the client's requisition form, blood collection tubes or vials and make the syringe-needle ready.</li> </ul>	<ul style="list-style-type: none"> <li>• To assure the doctor's order with the correct client and to make the procedure smoothed</li> </ul>
8.	<ul style="list-style-type: none"> <li>• Select the appropriate vein for venipuncture.</li> </ul>	<ul style="list-style-type: none"> <li>• The larger median cubital, basilica and cephalic veins are most frequently used, but other may be necessary and will become more prominent if the client closes his/her fist tightly.</li> </ul>
9.	<p><u>Applying the tourniquet:</u></p> <ul style="list-style-type: none"> <li>• Apply the tourniquet 3-4 inches (8 - 10 cm) above the collection site. Never leave the tourniquet on for</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the venipuncture site from touching the tourniquet and keep clear vision</li> </ul>

	<p>over 1 minute.</p> <ul style="list-style-type: none"> <li>• If a tourniquet is used for preliminary vein selection, release it and reapply after two minutes.</li> </ul>	<ul style="list-style-type: none"> <li>• Tightening of more than 1 minute may bring erroneous results due to the change of some blood composition.</li> </ul>
10.	<p><u>Selection of the vein:</u></p> <ul style="list-style-type: none"> <li>• Feel the vein using the tip of the finger and detect the direction, depth and size of vein.</li> <li>• Massage the arm from wrist to elbow. If the vein is not prominent, try the other arm.</li> </ul>	<ul style="list-style-type: none"> <li>• To assure venipuncture at one try.</li> </ul>
11.	<p><u>Disinfect the selected site:</u></p> <ul style="list-style-type: none"> <li>• Clean the puncture site by making a smooth circular pass over the site with the spirit swab, moving in an outward spiral from the zone of penetration.</li> <li>• Allow the skin to dry before proceeding.</li> <li>• Do not touch the puncture site after cleaning.</li> <li>• After blood is drawn the desired amount, release the tourniquet and ask the client to open his/her fist</li> <li>• Place dry gauze over the puncture site and remove the needle.</li> <li>• Immediately apply slight pressure. Ask the client to apply pressure for at least 2 minutes.</li> <li>• When bleeding stops, apply a fresh bandage or gauze with tape.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the infection from venipuncture site</li> <li>• Disinfectant has the effect on drying</li> <li>• To prevent the site from contaminating.</li> <li>• To avoid making ecchymoma.</li> <li>• The normal coagulation time is 2-5 minutes.</li> </ul>
12.	<ul style="list-style-type: none"> <li>• Transfer blood drawn into appropriate blood specimen bottles or tubes as soon as possible using a needles syringe.</li> <li>• The container or tube containing an additive should be gently inverted 5-8 times or shaking the specimen container by making figure of 8.</li> </ul>	<ul style="list-style-type: none"> <li>• A delay could cause improper coagulation.</li> <li>• Do not shake or mix vigorously.</li> </ul>

13.	<ul style="list-style-type: none"> <li>Dispose of the syringe and needle as a unit into an appropriate sharps container.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the spread of infection</li> </ul>
14.	<ul style="list-style-type: none"> <li>Label all tubes or specimen bottles with client name, age, sex, inpatient no., date and time.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the blood tubes or bottles from misdealing.</li> </ul>
15.	<ul style="list-style-type: none"> <li>Send the blood specimen to the laboratory immediately along with the laboratory order form.</li> </ul>	<ul style="list-style-type: none"> <li>To avoid misdealing and taking erroneous results.</li> </ul>
16.	<ul style="list-style-type: none"> <li>Replace Equipment's and disinfects materials if needed.</li> </ul>	<ul style="list-style-type: none"> <li>To prepare for the next procedure and prevent the spread of infection.</li> </ul>
17.	<ul style="list-style-type: none"> <li>Put off gloves and perform hand hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the spread of infection</li> </ul>

**\*Nursing Alert\***

❖ Factors to consider in site selection:

- Extensive scarring or healed burn areas should be avoided.
- Specimens should not be obtained from the arm on the same side as a mastectomy.
- Avoid areas of hematoma.
- If an I.V. is in place, samples may be obtained below but NEVER above the I.V. site.
- Do not obtain specimens from an arm having a cannula, fistula, or vascular graft.
- Allow 10-15 minutes after a transfusion is completed before obtaining a blood sample.

❖ Safety

- Observe universal (standard) precaution safety precautions. Observe all applicable isolation procedures.
- Needle are never recapped, removed, broken or bent after phlebotomy procedure.
- Gloves are to be discarded in the appropriate container immediately after the procedure.
- Contaminated surfaces must be cleaned with freshly prepared 10 % bleach solution. All surfaces are cleaned daily with bleach.
- In the case of an accidental needle-stick, immediately wash the area with an antibacterial soap, express blood from the wound, and contact your supervisor.

- ❖ If a blood sample is not available,
  - Reposition the needle.
  - Loosen the tourniquet
  - Probing is not recommended.
  - A patient should never be stuck more than twice unsuccessfully by a same staff. The supervisor or a senior staff should be called to assess the client.

## **B. ASSISTING IN OBTAINING BLOOD FOR CULTURE**

### **Definition**

Collecting of blood specimen for culture is a sterile procedure to obtain blood specimen. Sterile techniques are used in whole of the procedure.

### **Purpose**

- To identify s disease-causing organisms
- To detect the right antibiotics to kill the particular microorganisms

### **Equipment Required**

- Laboratory form
- Sterilized syringes (10 mL): (2-3)
- Sterilized needles: (2-3)
- Tourniquet (1)
- Blood culture bottles or sterile tubes containing a sterile anticoagulant solution as required
- Disinfectant : Povidone-iodine or spirit swabs
- Dry gauze
- Disposable gloves if available (1)
- Adhesive tape or bandages
- Sharps Disposal Container (1)
- Steel Tray (1)
- Ball point pen (1)

### **Procedure**

**\*Nursing Alert\*:** You are responsible to notify the proper client when the culture is to be done. Use the following actions in assisting with blood cultures:

S.N.	Care Action	Rationale
1.	<ul style="list-style-type: none"> <li>Identify the patient.</li> </ul>	<ul style="list-style-type: none"> <li>This information must match the requisition.</li> </ul>
2.	<ul style="list-style-type: none"> <li>Reassure the client that the minimum amount of blood required for testing will be drawn.</li> </ul>	<ul style="list-style-type: none"> <li>To perform once properly without any unnecessary collecting of blood</li> </ul>
3.	<ul style="list-style-type: none"> <li>Assemble the necessary equipment appropriate to the client's physical characteristics.</li> </ul>	<ul style="list-style-type: none"> <li>Organization facilitate accurate skill performance</li> </ul>
4.	<ul style="list-style-type: none"> <li>Explain to the client about the purpose and the procedure.</li> </ul>	<ul style="list-style-type: none"> <li>Providing explanation fosters his/her cooperation and allays anxiety.</li> </ul>
5.	<ul style="list-style-type: none"> <li>Label all tubes or specimen bottles with client name, age, sex, inpatient number, date and time.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the blood tubes or bottles from misdealing.</li> </ul>
6.	<ul style="list-style-type: none"> <li>Perform hand hygiene and put on gloves if available.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the infection of spreading.</li> </ul>
7.	<ul style="list-style-type: none"> <li>Protect the bed with a pad under the client's arm.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the bed of escaping or wetting the disinfectant and blood.</li> </ul>
8.	<ul style="list-style-type: none"> <li>Place the arm with proper position and disinfect around the injection site approximate 2-3 inches</li> </ul>	<ul style="list-style-type: none"> <li>To prevent unnecessary injury and protect of entering organisms from the skin surfaces</li> </ul>
9.	<p><u>While puncturing:</u></p> <ul style="list-style-type: none"> <li>Assist the person who is drawing blood</li> <li>Confirm the amount</li> <li>After obtaining sufficient blood specimen, receive and place the specimen into the specimen container with strict sterile technique.</li> <li>Close the container promptly and tightly</li> </ul>	<ul style="list-style-type: none"> <li>Sometimes the blood may be placed into two or more tubes or bottles.</li> <li>To secure the sterilized condition of container</li> </ul>
10.	<p><u>After puncturing:</u></p>	

	<ul style="list-style-type: none"> <li>Place a sterile gauze pad and folded into a compress tightly over the site.</li> <li>Secure firmly with tape.</li> <li>Check the stop of bleeding a few minutes later.</li> </ul>	<ul style="list-style-type: none"> <li>To make sure all bleeding has stopped</li> </ul>
11.	<ul style="list-style-type: none"> <li>Dispose of the syringe and needle as a unit into an appropriate sharps container.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the spread of infection</li> </ul>
12.	<ul style="list-style-type: none"> <li>Send the specimen to the laboratory immediately along with the laboratory order form.</li> </ul>	<ul style="list-style-type: none"> <li>To avoid misdealing and taking erroneous results.</li> </ul>
13.	<ul style="list-style-type: none"> <li>Replace Equipment's and disinfects materials if needed.</li> </ul>	<ul style="list-style-type: none"> <li>To prepare for the next procedure and prevent the spread of infection.</li> </ul>
14.	<ul style="list-style-type: none"> <li>Put off gloves and perform hand hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the spread of infection.</li> </ul>
15.	<ul style="list-style-type: none"> <li>Document the procedure in the designated place and mark it off on the Cardex.</li> </ul>	<ul style="list-style-type: none"> <li>To avoid duplication</li> <li>Documentation provides coordination of care.</li> </ul>

### C. COLLECTING URINE SPECIMEN

#### Definition

Urinalysis, in which the components of urine are identified, is part of every client assessment at the beginning and during an illness.

#### Purpose

- To diagnose illness.
- To monitor the disease process
- To evaluate the efficacy of treatment

#### Procedure

S.N.	Care Action	Rationale
1.	<ul style="list-style-type: none"> <li>Label specimen containers or</li> </ul>	<ul style="list-style-type: none"> <li>Reduce handling after the</li> </ul>

	bottles before the client voids.	container or bottle is contaminated.
2.	<ul style="list-style-type: none"> <li>Note on the specimen label if the female client is menstruating at that time.</li> </ul>	<ul style="list-style-type: none"> <li>One of the tests routinely performed is a test for blood in the urine. If the female client is menstruating at the time a urine specimen is taken, a false-positive reading for blood will be obtained</li> </ul>
3.	<ul style="list-style-type: none"> <li>To avoid contamination and necessity of collecting another specimen, soap and water cleansing of the genitals immediately preceding the collection of the specimen is supported</li> </ul>	<ul style="list-style-type: none"> <li>Bacteria are normally present on the labia or penis and the perineum and in the anal area.</li> </ul>
4.	<ul style="list-style-type: none"> <li>Maintain body substances precautions when collecting all types of urine specimen.</li> </ul>	<ul style="list-style-type: none"> <li>To maintain safety.</li> </ul>
5.	<ul style="list-style-type: none"> <li>Wake a client in the morning to obtain a routine specimen.</li> </ul>	<ul style="list-style-type: none"> <li>If all specimens are collected at the same time, the laboratory can establish a baseline.</li> <li>And also this voided specimen usually represents that was collecting in the bladder all night.</li> </ul>
6.	<ul style="list-style-type: none"> <li>Be sure to document the procedure in the designated place and mark it off on the Cardex.</li> </ul>	<ul style="list-style-type: none"> <li>To avoid duplication.</li> </ul>

#### D. COLLECTING A SINGLE VOIDED SPECIMEN

##### Equipment required

- Laboratory form
- Clean container with lid or cover (1): wide-mouthed container is recommended



- Bedpan or urinal (1): as required
- Disposable gloves (1): if available
- Toilet paper as required

### Procedure

S.N.	Care Action	Rationale
1.	<ul style="list-style-type: none"> <li>• Explain the procedure</li> </ul>	<ul style="list-style-type: none"> <li>• Providing information fosters his/her cooperation</li> </ul>
2.	<ul style="list-style-type: none"> <li>• Assemble equipment and check the specimen form with client's name, date and content of urinalysis</li> </ul>	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance.</li> <li>• Ensure that the specimen collecting is correct.</li> </ul>
3.	<ul style="list-style-type: none"> <li>• Label the bottle or container with the date, client's name, department identification, and doctor's name.</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure correct identification and avoid mistakes.</li> </ul>
4.	<ul style="list-style-type: none"> <li>• Perform hand hygiene and put on gloves</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection</li> </ul>
5.	<ul style="list-style-type: none"> <li>• Instruct the client to void in a clean receptacle.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent cross-contamination</li> </ul>
6.	<ul style="list-style-type: none"> <li>• Remove the specimen immediately after the client has voided.</li> </ul>	<ul style="list-style-type: none"> <li>• Substances in urine decompose when exposed to air. Decomposition may alter the test results</li> </ul>
7.	<ul style="list-style-type: none"> <li>• Pour about 10-20 mL of urine into the labeled specimen bottle or container and cover the bottle or container</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure the client voids enough amount of the urine for the required tests.</li> <li>• Covering the bottle retards decomposition and it prevents added contamination.</li> </ul>
8.	<ul style="list-style-type: none"> <li>• Dispose of used equipment or clean them</li> <li>• Remove gloves and perform hand hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection</li> </ul>
9.	<ul style="list-style-type: none"> <li>• Send the specimen bottle or container to the laboratory immediately with the specimen form.</li> </ul>	<ul style="list-style-type: none"> <li>• Organisms grow quickly at room temperature.</li> </ul>

10.	<ul style="list-style-type: none"> <li>Document the procedure in the designated place and mark it off on the Cardex.</li> </ul>	<ul style="list-style-type: none"> <li>To avoid duplication.</li> <li>Documentation provides coordination of care.</li> </ul>
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## E. COLLECTING A 24-HOUR URINE SPECIMEN

### Definition

Collection of a 24-hour urine specimen is defined as the collection of all the urine voided in 24 hours, without any spillage of wastage.

### Purpose

- To detect kidney and cardiac diseases or conditions
- To measure total urine component

### Equipment Required

- Laboratory form
- Bedpan or urinal (1)
- 24 hours collection bottle with lid or cover (1)
- Clean measuring jar (1)
- Disposable gloves if available (1)
- Paper issues if available
- Ballpoint pen (1)

### Procedure:

S.N.	Care Action	Rationale
1.	<ul style="list-style-type: none"> <li>Explain the procedure.</li> </ul>	<ul style="list-style-type: none"> <li>Providing information fosters his/her cooperation.</li> </ul>
2.	<ul style="list-style-type: none"> <li>Assemble equipment and check the specimen form with client's name, date and content of urinalysis</li> </ul>	<ul style="list-style-type: none"> <li>Organization facilitates accurate skill performance.</li> <li>Ensure that the specimen collecting is correct.</li> </ul>
3.	<ul style="list-style-type: none"> <li>Label the bottle or container with the date, client's name, department identification, and Doctor's name.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure correct identification and avoid mistakes.</li> </ul>
4.	<u>Instruct the client:</u>	

	<ul style="list-style-type: none"> <li>• Before beginning a 24 hour urine collection, ask the client to void completely.</li> <li>• Document the starting time of a-24 hour urine collection on the specimen form and nursing record.</li> <li>• Instruct the client to collect all the urine into a large container for the next 24 hours.</li> <li>• In the exact 24 hours later, ask the client to void and pour into the large container.</li> <li>• Measure total amount of urine and record it on the specimen form and nursing record.</li> <li>• Document the time when finished the collection.</li> </ul>	<ul style="list-style-type: none"> <li>• To measure urinal component and assess the function of kidney and cardiac function accuracy.</li> <li>• The entire collected urine should be stored in a covered container in a cool place</li> </ul>
5.	<p>Sending the specimen:</p> <ul style="list-style-type: none"> <li>• Perform hand hygiene and put on gloves if available.</li> <li>• Mix the urine thoroughly.</li> <li>• Collect some urine as required or all the urine in a clean bottle with lid.</li> <li>• Transfer it to the laboratory with the specimen form immediately</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the contamination</li> <li>• Ensure the client voids enough amount of the urine for the required tests.</li> <li>• Covering the bottle retards decomposition and it prevents added contamination.</li> <li>• Substances in urine decompose when exposed to air.</li> <li>• Decomposition may alter the test results</li> </ul>
6.	<ul style="list-style-type: none"> <li>• Dispose of used equipment or clean them.</li> <li>• Remove gloves and perform hand hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> </ul>
7.	<ul style="list-style-type: none"> <li>• Document the procedure in the designated place and mark it off on the cardex.</li> </ul>	<ul style="list-style-type: none"> <li>• To avoid duplication.</li> <li>• Documentation provides coordination of care</li> </ul>

## F. COLLECTING A URINE SPECIMEN FROM A RETENTION CATHETER

### Equipment Required

- Laboratory form
- Disposable gloves if available (1)
- Container with label as required
- Spirit swabs or disinfectant swabs
- 10-20-mL syringe with 21-25-gauge needle
- Clamp or rubber band (1)
- Ballpoint pen (1)

### Procedure

S.N.	Care Action	Rationale
1.	<ul style="list-style-type: none"> <li>• Assemble equipment.</li> <li>• Label the container.</li> </ul>	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance</li> </ul>
2.	<ul style="list-style-type: none"> <li>• Explain the procedure to the client.</li> </ul>	<ul style="list-style-type: none"> <li>• Providing information fosters his/her cooperation</li> </ul>
3.	<ul style="list-style-type: none"> <li>• Perform hand hygiene and put on gloves if available.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> </ul>
4.	<p><u>Clamp the tubing:</u></p> <p>1) Clamp the drainage tubing or bend the tubing</p> <p>2) Allow adequate time for urine collection</p> <p>*Nursing Alert*</p> <p>You should not clamp longer than 15 minutes.</p>	<ul style="list-style-type: none"> <li>• Collecting urine from the tubing guarantees fresh urine.</li> <li>• Long-time clamp can lead back flow of urine and is able to cause urinary tract infection</li> </ul>
5.	<ul style="list-style-type: none"> <li>• Cleanse the aspiration port with a spirit swab or another disinfectant swab (e.g., Betadine swab)</li> </ul>	<ul style="list-style-type: none"> <li>• Disinfecting the port prevents organisms from entering the catheter.</li> </ul>
6.	<p><u>Withdrawing the urine:</u></p> <p>1) Insert the needle into the aspiration port</p> <p>2) Withdraw sufficient amount of urine gently into the syringe.</p>	<ul style="list-style-type: none"> <li>• This technique for uncontaminated urine specimen, preventing contamination of the client's bladder.</li> </ul>
7.	<ul style="list-style-type: none"> <li>• Transfer the urine to the labeled specimen container</li> </ul> <p>*Nursing Alert*</p>	<ul style="list-style-type: none"> <li>• Careful labeling and transfer prevents contamination or confusion of the urine specimen</li> </ul>

	The container should be clean for a routine urinalysis and be sterile for a culture	<ul style="list-style-type: none"> <li>• Appropriate container brings accurate results of urinalysis.</li> </ul>
8.	<ul style="list-style-type: none"> <li>• Unclamp the catheter</li> </ul>	<ul style="list-style-type: none"> <li>• The catheter must be unclamped to allow free urinary flow and to prevent urinary stasis.</li> </ul>
9.	<ul style="list-style-type: none"> <li>• Prepare and pour urine to the container for transport.</li> </ul>	<ul style="list-style-type: none"> <li>• Proper packaging ensures that the specimen is not an infection risk.</li> </ul>
10.	<ul style="list-style-type: none"> <li>• Dispose of used equipment and disinfect if needed.</li> <li>• Remove gloves and perform hand hygiene</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> </ul>
11.	<ul style="list-style-type: none"> <li>• Send the container to the laboratory immediately.</li> </ul>	<ul style="list-style-type: none"> <li>• Organisms grow quickly at room temperature</li> </ul>
12.	<ul style="list-style-type: none"> <li>• Document the procedure in the designated place and mark it off on the Cardex.</li> </ul>	<ul style="list-style-type: none"> <li>• To avoid duplication.</li> <li>• Documentation provides coordination of care.</li> </ul>

## G. COLLECTING A URINE CULTURE

### Definition

Collecting a urine culture is a process in which urine specimen is obtained with sterile technique.

### Purpose

- To collect uncontaminated urine specimen for culture and sensitivity test.
- To detect the microorganisms causes urinary tract infection (UTI).
- To diagnose and treat with specific antibiotic

### Equipment Required

- Laboratory form
- Sterile gloves (1)
- Sterile culture bottle with label as required

- Sterile kidney tray or sterile container with wide mouthed if needed
- Bed pan if needed (1)
- Paper tissues if needed
- Ballpoint pen (1)

### Procedure

S.N.	Care action	Rationale
1.	<ul style="list-style-type: none"> <li>• Assemble equipment and check the specimen form with client's name, date and content of urinalysis.</li> </ul>	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance.</li> <li>• Ensure that the specimen collecting is correct.</li> </ul>
2.	<ul style="list-style-type: none"> <li>• Label the bottle or container with the date, Client's name, department identification, and Doctor's name.</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure correct identification and avoid mistakes.</li> </ul>
3.	<ul style="list-style-type: none"> <li>• Explain the procedure to the client.</li> </ul>	<ul style="list-style-type: none"> <li>• Providing information fosters his/her cooperation.</li> </ul>
4.	<p><u>Instruct the client:</u></p> <ul style="list-style-type: none"> <li>• Instruct the client to clean perineum with soap and water</li> <li>• Open sterilized container and leave the cover facing inside up.</li> <li>• Instruct the client to void into sterile kidney tray or sterilized container with wide mouth.</li> <li>• If the client is needed bed-rest and needs to pass urine more, put bed pan after you collected sufficient amount of sterile specimen.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the contamination of specimen from perineum area.</li> <li>• The cover should be kept the state sterilized.</li> <li>• To secure the specimen kept in sterilized container surely.</li> </ul>
5.	<ul style="list-style-type: none"> <li>• Remove the specimen immediately after the client has voided. Obtain 30-50 mL at midstream point of voiding</li> </ul>	<ul style="list-style-type: none"> <li>• Substances in urine decompose when exposed to air.</li> <li>• Decomposition may alter the test results.</li> <li>• Ensure the client voids enough amount of the urine for the required tests.</li> <li>• Emphasize first and last</li> </ul>

		portions of voiding to be discarded.
6.	<ul style="list-style-type: none"> <li>• Close the container securely without touching inside of cover or cap.</li> </ul>	<ul style="list-style-type: none"> <li>• Covering the bottle retards decomposition and it prevents added contamination.</li> </ul>
7.	<ul style="list-style-type: none"> <li>• Dispose of used equipment or clean them.</li> <li>• Remove gloves and perform hand hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection</li> </ul>
8.	<ul style="list-style-type: none"> <li>• Send the specimen bottle or container to the laboratory immediately with the specimen form.</li> </ul>	<ul style="list-style-type: none"> <li>• Organisms grow quickly at room temperature</li> </ul>
9.	<ul style="list-style-type: none"> <li>• Document the procedure in the designated place and mark it off on the Cardex.</li> </ul>	<ul style="list-style-type: none"> <li>• To avoid duplication.</li> <li>• Documentation provides coordination of care</li> </ul>

## H. COLLECTING A STOOL SPECIMEN

### Definition

Collection of stool specimen deters a process which is aimed at doing chemical bacteriological or parasitological analysis of fecal specimen.

### Purpose:

- To identify specific pathogens
- To determine presence of ova and parasites.
- To determine presence of blood and fat.
- To examine for stool characteristics such as color, consistency and odor

### Equipment Required

- Laboratory form
- Disposable gloves if available (1)
- Clean bedpan with cover (1)
- Closed specimen container as ordered
- Label as required

- Wooden tongue depressor (1-2)
- Kidney tray or plastic bag for dirt (1)

**Procedure**

<b>S.N</b>	<b>Care Action</b>	<b>Rationale</b>
1.	<ul style="list-style-type: none"> <li>• Assemble equipment.</li> <li>• Label the container.</li> </ul>	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance.</li> <li>• Careful labeling ensures accuracy of the report and alerts the laboratory personnel to the presence of a contaminated specimen.</li> </ul>
2.	<p><u>Explanation:</u></p> <ul style="list-style-type: none"> <li>• Explain the procedure to the client.</li> <li>• Ask the client to tell you when he/she feels the urge to have a bowel movement.</li> </ul>	<ul style="list-style-type: none"> <li>• Providing information fosters his/her cooperation.</li> <li>• Most of clients cannot pass on command.</li> </ul>
3.	<ul style="list-style-type: none"> <li>• Perform hand hygiene and put on gloves if available.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> </ul>
4.	<p><u>Placing bedpan:</u></p> <ul style="list-style-type: none"> <li>• Close door and put curtains/ a screen.</li> <li>• Give the bedpan when the client is ready.</li> <li>• Allow the client to pass feces</li> <li>• Instruct not to contaminate specimen with urine</li> </ul>	<ul style="list-style-type: none"> <li>• To provide privacy.</li> <li>• You are most likely to obtain a usable specimen at this time.</li> <li>• To gain accurate results.</li> </ul>
5.	<p><u>Collecting a stool specimen:</u></p> <ul style="list-style-type: none"> <li>• Remove the bedpan and assist the client to clean if needed.</li> <li>• Use the tongue depressor to transfer a portion of the feces to the container without any touching.</li> <li>• Take a portion of feces from three different areas of the stool specimen.</li> <li>• Cover the container</li> </ul>	<ul style="list-style-type: none"> <li>• It is grossly contaminated</li> <li>• To gain accurate results.</li> <li>• It prevents the spread of odor.</li> </ul>
6.	<ul style="list-style-type: none"> <li>• Remove and discard gloves.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of</li> </ul>



	<ul style="list-style-type: none"> <li>• Perform hand hygiene.</li> </ul>	infection
7.	<ul style="list-style-type: none"> <li>• Send the container immediately to the laboratory.</li> </ul>	<ul style="list-style-type: none"> <li>• Stools should be examined when fresh.</li> <li>• Examinations for parasites, ova, and organisms must be made when the stool is warm.</li> </ul>
8.	<ul style="list-style-type: none"> <li>• Document the procedure in the designated place and mark it off on the Cardex.</li> </ul>	<ul style="list-style-type: none"> <li>• To avoid duplication</li> <li>• Documentation provides coordination of care.</li> </ul>

**\*Nursing Alert\***

The procedure is exact same in routine test of stool and culture. But when you collect stool specimen you should caution on the next point;

- Collect stool specimen with clean wooden tongue depressor or spatula for routine stool test.
- Collect stool specimen with sterile wooden tongue depressor or spatula for culture.

**I. COLLECTING A SPUTUM SPECIMEN**  
**A. ROUTINE TEST**

**Definition**

Collecting a sputum specimen is defined as a one of diagnostic examination using sputum

**Purpose**

- To diagnose respiratory infection.
- To assess the efficacy of treatment to diseases such as TB.

**Equipment Required**

- Laboratory form
- Disposable gloves if available (1)
- Sterile covered sputum container (1)
- Label as required
- Sputum mug or cup (1)

- Kidney tray or plastic bag for dirt (1)
- Paper tissues as required
- Ballpoint pen (1)

**Procedure**

<b>S.N.</b>	<b>Care Action</b>	<b>Rationale</b>
1.	<ul style="list-style-type: none"> <li>• Assemble equipment.</li> <li>• Label the container.</li> </ul>	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance.</li> <li>• Careful labeling ensures accuracy of the report and alerts the laboratory personnel to the presence of a contaminated specimen.</li> </ul>
2.	<ul style="list-style-type: none"> <li>• Explain the procedure to the client.</li> </ul>	<ul style="list-style-type: none"> <li>• Providing information fosters his/her cooperation.</li> </ul>
3.	<ul style="list-style-type: none"> <li>• Perform hand hygiene and put on gloves if available.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> <li>• The sputum specimen is considered highly contaminated, so you should treat it with caution.</li> </ul>
4.	<p><u>Collecting the specimen:</u></p> <ul style="list-style-type: none"> <li>• Instruct the client to cough up secretions from deep in the respiratory passage.</li> <li>• Have the client expectorate directly into the sterile container.</li> <li>• Instruct the client to wipe around mouth if needed.</li> <li>• Discard it properly.</li> <li>• Close the specimen immediately</li> </ul>	<ul style="list-style-type: none"> <li>• A sputum specimen should be from the lungs and bronchi. It should be sputum rather than mucous.</li> <li>• Avoid any chance of outside contamination to the specimen or any contamination of other objects.</li> <li>• Paper tissues used by any client are considered contaminated.</li> <li>• To prevent contamination.</li> </ul>
5.	<ul style="list-style-type: none"> <li>• Remove and discard gloves. Perform hand hygiene</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent contamination of other objects, including the label</li> </ul>
6.	<ul style="list-style-type: none"> <li>• Send specimen to the laboratory immediately.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the increase of organisms.</li> </ul>
7.	<ul style="list-style-type: none"> <li>• Document the procedure in the</li> </ul>	<ul style="list-style-type: none"> <li>• To avoid duplication.</li> </ul>

	designated place and mark it off on the Cardex.	<ul style="list-style-type: none"> <li>Documentation provides coordination of care</li> </ul>
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## B. COLLECTING A SPUTUM CULTURE

### Definition

Collection of coughed out sputum for culture is a process to identify respiratory pathogens.

### Purpose

- To detect abnormalities.
- To diagnose disease condition.
- To detect the microorganisms causes respiratory tract infections.
- To treat with specific antibiotics.

### Equipment Required

- Laboratory form
- Disposable gloves if available (1)
- Sterile covered sputum container (1)
- Label as required
- Kidney tray or plastic bag for dirt (1)
- Paper tissues as required
- Ballpoint pen (1)

### \*Nursing Alert\*

Provide proper and understandable explanation to the client:

1. Give specimen container on the previous evening with instruction how to treat.
2. Instruct to raise sputum from lungs by coughing, not to collect only saliva.
3. Instruct the client to collect the sputum in the morning
4. Instruct the client not to use any antiseptic mouth washes to rinse his/her mouth before collecting specimen.

### Procedure

S.N.	Care Action	Rationale
1.	<ul style="list-style-type: none"> <li>Assemble equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Organization facilitates accurate</li> </ul>

	<ul style="list-style-type: none"> <li>Label the container.</li> </ul>	<p>skill performance.</p> <ul style="list-style-type: none"> <li>Careful labeling ensures accuracy of the report and alerts the laboratory personnel to the presence of a contaminated specimen.</li> </ul>
2.	<ul style="list-style-type: none"> <li>Explain the procedure to the client.</li> </ul>	<ul style="list-style-type: none"> <li>Providing information fosters his/her cooperation</li> </ul>
3.	<ul style="list-style-type: none"> <li>Perform hand hygiene and put on gloves if available.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the spread of infection. The sputum specimen is considered highly contaminated, so you should treat it with caution.</li> </ul>
4.	<p><u>Instruct the client:</u></p> <ul style="list-style-type: none"> <li>Instruct the client to collect specimen early morning before brushing teeth.</li> <li>Instruct the client to remove and place lid facing upward.</li> <li>Instruct the client to cough deeply and expectorate directly into specimen container.</li> <li>Instruct the client to expectorate until you collect at least 10 mL of sputum.</li> <li>Close the container immediately when sputum was collected.</li> <li>Instruct the client to wipe around mouth if needed. Discard it properly</li> </ul>	<ul style="list-style-type: none"> <li>To obtain overnight accumulated secretions.</li> <li>To maintain the inside of lid as well as inside of container.</li> <li>A sputum specimen should be from the lungs and bronchi. It should be sputum rather than mucous.</li> <li>To obtain accurate results.</li> <li>To prevent contamination.</li> <li>Paper tissues used by any client are considered contaminated.</li> </ul>
5.	<ul style="list-style-type: none"> <li>Remove and discard gloves.</li> </ul>	<ul style="list-style-type: none"> <li>Perform hand hygiene .</li> <li>To prevent contamination of other objects, including the label.</li> </ul>
6.	<ul style="list-style-type: none"> <li>Send specimen to the laboratory immediately.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the increase of organisms.</li> </ul>
7.	<ul style="list-style-type: none"> <li>Document the procedure in the designated place and mark it off on the Cardex.</li> </ul>	<ul style="list-style-type: none"> <li>To avoid duplication.</li> <li>Documentation provides coordination of care.</li> </ul>

## ADMINSTRATION OF MEDICATION

### A.ORAL MEDICATION

#### Definition

Oral medication is defined as the administration of medication by mouth.

#### Purposes

- To prevent the disease and take supplement in order to maintain health
- To cure the disease
- To promote the health
- To give palliative treatment
- To give as a symptomatic treatment

#### Equipment Required

- Steel tray (1)
- Drinking water in jug (1)
- Doctor's prescription
- Medicine prescribed
- Medicine cup (1)
- Pill crusher/ tablet cutter if needed
- Kidney tray/ paper bag (to discard the waste) (1)

#### Procedure

S.N.	Care Action	Rationale
1.	<ul style="list-style-type: none"><li>• Perform hand hygiene</li></ul>	<ul style="list-style-type: none"><li>• To prevent the spread of infection</li></ul>
2.	<ul style="list-style-type: none"><li>• Assemble all Equipment's</li></ul>	<ul style="list-style-type: none"><li>• Organization facilitates accurate skill performances</li></ul>
3.	<ul style="list-style-type: none"><li>• Verify the medication order using the client's Cardex.</li><li>• Check any inconsistencies with Doctor before administration</li></ul>	<ul style="list-style-type: none"><li>• To reduce the chance of medication errors</li></ul>
4.	<ul style="list-style-type: none"><li>• Prepare one client's medication at a time.</li></ul>	<ul style="list-style-type: none"><li>• Lessen the chances for medication errors</li></ul>

5.	<ul style="list-style-type: none"> <li>• Proceed from top to bottom of the Cardex when preparing medications</li> </ul>	<ul style="list-style-type: none"> <li>• This ensures that you do not miss any medication orders.</li> </ul>
6.	<ul style="list-style-type: none"> <li>• Select the correct medication from the shelf or drawer and compare the label to the medication order on the Cardex.</li> <li>a. <u>From the multidose bottle:</u> <ul style="list-style-type: none"> <li>• Pour a pill from the multidose bottle into the container lid and transfer the correct amount to a medicine cup.</li> </ul> </li> <li>b. <u>In the case of unit packing:</u> <ul style="list-style-type: none"> <li>• Leave unit dose medication in wrappers and place them in a medication cup</li> </ul> </li> <li>c. <u>Liquid medications:</u> <ul style="list-style-type: none"> <li>• Measure liquid medications by holding the medicine cup at eye level and reading the level at the bottom of the meniscus. Pour from the bottle with the label uppermost and wipe the neck if necessary</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Comparing medication to the written order is a check that helps to prevent errors</li> <li>• Pouring medication into the lid eliminates handling it.</li> <li>• Unit dose wrappers keep medications clean and safe.</li> <li>• Holding a cup at eye level to pour a liquid gives the most accurate measurement.</li> <li>• Pouring away from the label and wiping the lip helps keep the label readable</li> </ul>
7.	<ul style="list-style-type: none"> <li>• Recheck each medication with the Cardex.</li> </ul>	<ul style="list-style-type: none"> <li>• To ensure preparation of the correct dose</li> </ul>
8.	<ul style="list-style-type: none"> <li>• When you have prepared all medications on a tray, compare each one again to the medication order.</li> </ul>	<ul style="list-style-type: none"> <li>• To check all medications three times to prevent errors.</li> </ul>
9	<ul style="list-style-type: none"> <li>• Crush pills if the client is unable to swallow them:       <ol style="list-style-type: none"> <li>1. Place the pill in a pill crusher and crush the pill until it is in powder form. (Do not crush time-release capsules or enteric-coated tablets)</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• Crushed medications are often easier to swallow.</li> </ul>

	<ol style="list-style-type: none"> <li>2. Dissolve substance in water or juice, or mix with apple sauce to mask the taste.</li> <li>3. If no need to crush, cut tablets at score mark only.</li> </ol>	<ul style="list-style-type: none"> <li>• Enteric-coated tablets that are crushed may irritate the stomach's mucosal lining.</li> <li>• Opening and crushing the contents of a time-release capsule may interfere with its absorption</li> </ul>
10.	<ul style="list-style-type: none"> <li>• Bring medication to the client you have prepared</li> </ul>	<ul style="list-style-type: none"> <li>• Hospital agency policy considers 30 minutes before after the ordered time as an acceptable variation</li> </ul>
11.	<p><u>Identify the client before giving the medication:</u></p> <ol style="list-style-type: none"> <li>a. Ask the client his/her name.</li> <li>b. Ask a staff member to identify the client.</li> <li>c. Check the name on the identification bracelet if available</li> </ol>	<ul style="list-style-type: none"> <li>• To abide by twelve rights to prevent medication errors.</li> <li>• Checking the identification bracelet is the most reliable</li> </ul>
12.	<ul style="list-style-type: none"> <li>• Complete necessary assessments before giving medications.</li> </ul>	<ul style="list-style-type: none"> <li>• Additional checking includes taking vital signs and allergies to medications, depending on the medication's action.</li> </ul>
13.	<ul style="list-style-type: none"> <li>• Assist the client to a comfortable position to take medications.</li> </ul>	<ul style="list-style-type: none"> <li>• Sitting as upright as possible makes swallowing medication easier and less likely to cause aspiration.</li> </ul>
14.	<p><u>Administer the medication:</u></p> <ul style="list-style-type: none"> <li>• Offer water or fluids with the medication.</li> <li>• Open unit dose medication package and give the medication to the medicine cup.</li> <li>• Review the medication's name and purpose.</li> <li>• Discard any medication that falls on the floor.</li> <li>• Mix powder medications with fluids at the bedside if needed.</li> </ul>	<ul style="list-style-type: none"> <li>• You should be aware of any fluid restrictions that exist.</li> <li>• Powdered forms of drugs may thicken when mixed with fluid. You should give them</li> </ul>

	<ul style="list-style-type: none"> <li>Record fluid intake on the balance sheet</li> </ul>	<p>immediately.</p> <ul style="list-style-type: none"> <li>Recording fluid taken with medications maintains accurate documentation.</li> </ul>
15.	<ul style="list-style-type: none"> <li>Remain with the client until he/she has taken all medication.</li> <li>Confirm the client's mouth if needed.</li> </ul>	<ul style="list-style-type: none"> <li>Be sure that the client takes the medication.</li> <li>Leaving medication at the bedside is unsafe.</li> </ul>
16.	<ul style="list-style-type: none"> <li>Perform hand hygiene</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the spread of infection</li> </ul>
17.	<p><u>Record medication administration on the appropriate form:</u></p> <ul style="list-style-type: none"> <li>Sign after you have given the medication.</li> <li>If a client refused the medication, record according to your hospital/agency policy on the record.</li> <li>Document vital sign's or particular assessments according to your hospital's form.</li> <li>Sign in the narcotic record for controlled substances when you remove them from the locked area (e.g, drawer or shelf).</li> </ul>	<ul style="list-style-type: none"> <li>Documentation provides coordination of care and giving signature maintains professional accountability.</li> <li>To verify the reason medications were omitted as well as the specific nursing assessments needed to safely administer medication.</li> <li>To confirm medication's action.</li> <li>Hospital policy regulates special documentation for controlled narcotic substances.</li> </ul>
18.	<ul style="list-style-type: none"> <li>Check the client within 30 minutes after giving medication.</li> </ul>	<ul style="list-style-type: none"> <li>To verify the client's response to the medication.</li> <li>Particularly, you should check the response after administered pain killer whether if the medication relieves pain or not.</li> </ul>



## B. ADMINISTERING ORAL MEDICATIONS THROUGH A NASO-GASTRIC TUBE

### Purpose

- To reduce the risk of aspiration.
- To administer medication in patient with dysphagia, esophageal trauma.

### Equipment's Required

- Client's cardex and chart
- Prescribed Medications
- Medicine cup -1
- Water or other fluids as needed
- Mortar and pestle or pill crusher if an order to crush medications has been obtained
- Disposable gloves-1pair (if available)
- Large syringe (50 mL) (1)
- Small syringe (3-5 mL)(1)
- Stethoscope (1)

### Procedure

S.N.	Care Action	Rationale
1.	<u>Confirmation of the medication:</u> <ul style="list-style-type: none"> <li>• Check the name, dosage, type, time of medication with the client's cardex.</li> <li>• If you are going to give more than one medication, make sure they are compatible.</li> </ul>	<ul style="list-style-type: none"> <li>• Ensures administration of correct medication and dosage to the correct client.</li> </ul>
2.	<ul style="list-style-type: none"> <li>• Check the cardex and the client's record for allergies to medications.</li> </ul>	<ul style="list-style-type: none"> <li>• You cannot administer a medication to which the client previously experienced an allergic reaction.</li> </ul>
3.	<ul style="list-style-type: none"> <li>• Perform hand hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> </ul>
4.	<ul style="list-style-type: none"> <li>• Assemble all equipment.</li> </ul>	<ul style="list-style-type: none"> <li>• Organization helps to eliminate the possibility of medication errors.</li> </ul>
5.	<ul style="list-style-type: none"> <li>• Set up medication following the twelve rights of administration.</li> </ul>	<ul style="list-style-type: none"> <li>• To decrease the possibility of errors.</li> </ul>

6.	<ul style="list-style-type: none"> <li>• Explain the procedure</li> </ul>	<ul style="list-style-type: none"> <li>• It fosters client's cooperation and understanding.</li> </ul>
7.	<ul style="list-style-type: none"> <li>• Put on gloves if available</li> </ul>	<ul style="list-style-type: none"> <li>• To reduce the risk of infection.</li> </ul>
8.	<p><u>Check the placement of the naso-gastric tube:</u></p> <ul style="list-style-type: none"> <li>• Connect a small syringe to the end of tube</li> <li>• Gently aspirate the gastric juice or endogastric substances with a syringe.</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure that medication will be delivered into the stomach.</li> </ul>
9.	<p>After checking for the placement of the gastric tube, pinch or clamp the tubing and remove the syringe.</p> <ol style="list-style-type: none"> <li>1. Flush the tube with 30 ml water.</li> <li>2. Administering medications: <ul style="list-style-type: none"> <li>• Pour required liquid medication into the medicine cup. (Pills must be crushed and capsules opened.)</li> <li>• Add 15-20 ml of water and stir thoroughly.</li> <li>• Remove the plunger from the syringe and insert the syringe tip in the NG tube.</li> <li>• Release the clamp and pour the medication into the syringe.</li> <li>• If the medication does not flow freely down the tube, insert the plunger and gently apply a slight pressure.</li> <li>• After you have administered the medication, flush the tube with 15 to 30 ml of water.</li> <li>• Clamp the tubing and remove the syringe.</li> </ul> </li> </ol>	<ul style="list-style-type: none"> <li>• Prevents endogastric c substances from escaping through the tubing.</li> <li>• Ensure that no air enters the stomach, causing discomfort for the client.</li> <li>• To ensure tube patency.</li> <li>• Allows medication to flow into the NG tube.</li> <li>• Pressure helps start the flow.</li> <li>• To prevent tube blockage.</li> </ul>

	<ul style="list-style-type: none"> <li>• Replace the tubing plug. If feeding is continued, reconnect the tubing to the feeding tubing.</li> <li>3. Assist the patient in a comfortable position.</li> <li>4. Document time, medication type and amount, and the amount of water on the I/O chart.</li> </ul>	<ul style="list-style-type: none"> <li>• To promote comfort.</li> <li>• Documentation provides continuity of care and giving signature maintains professional accountability.</li> </ul>
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\*Note:

- Never crush a mixture of tablets together.
- Never combine drugs in the syringe.
- Never mix liquid formulations.
- Flush with an appropriate volume of water (usually 10 ml) before administering another drug.

### C. LOADING MEDICATIONS FROM AN AMPOULE

#### Purpose

- To prepare medication for the administration by sterile method

#### Equipment required

- Medication chart
- Sterile syringe (1)
- Sterile needle (1)
- Second needle (optional)
- Spirit swab
- Ampoule of medication prescribed
- Ampoule cutter if available (1) Kidney tray (1)
- Steel Tray (1)
- Container for discarding if possible (1)

#### Procedure

S.N.	Care Action	Rationale
1.	<ul style="list-style-type: none"> <li>• Gather equipment.</li> <li>• Check the medication order against the original Doctor's order according to hospital/ agency policy.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent medication error.</li> </ul>
2.	<ul style="list-style-type: none"> <li>• Perform hand hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of</li> </ul>

		infection.
3.	<ul style="list-style-type: none"> <li>• Tap the stem of the ampoule or twist your wrist quickly while holding the ampoule vertically.</li> </ul>	<ul style="list-style-type: none"> <li>• This facilitates movement of medication in the stem to the body of the ampoule.</li> </ul>
4.	<ul style="list-style-type: none"> <li>• Wipe the neck around of the ampoule by spirit swab.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent entering of dust and microorganisms.</li> </ul>
5.	<ul style="list-style-type: none"> <li>• After drying spirit, put and round a ampoule cutter to the neck of the ampoule roundly.</li> </ul>	<ul style="list-style-type: none"> <li>• To cut smoothly and avoid making any shattered glass fragments</li> </ul>
6.	<ul style="list-style-type: none"> <li>• Put spirit swab to the neck of the ampoule.</li> <li>• Use a snapping motion to break off the top of the ampoule along the pre-scored line at its neck.</li> <li>• Always break away from your body.</li> </ul>	<ul style="list-style-type: none"> <li>• This protects the nurses' face and finger from any shattered glass fragments.</li> </ul>
7.	<ul style="list-style-type: none"> <li>• Remove the cap from the needle by pulling it straight off.</li> <li>• Hold the ampoule by your non-dominant hand and insert the needle into the ampoule, being careful not to touch the rim.</li> </ul>	<ul style="list-style-type: none"> <li>• The rim of the ampoule is considered contaminated use of a needle prevents the accidental withdrawing of small glass particles with the medication.</li> </ul>
8.	<ul style="list-style-type: none"> <li>• Withdraw medication in the amount ordered plus a small amount more. <b>Do not inject air into solutions.</b></li> <li>a. Insert the tip of the needle into the ampoule.</li> <li>b. Withdraw fluid into the syringe Touch the plunger at the knob only</li> </ul>	<ul style="list-style-type: none"> <li>• By withdrawing a small amount more of medication, any air bubbles in the syringe can be displaced once the syringe is removed.</li> </ul>
9.	<ul style="list-style-type: none"> <li>a. Do not expel any air bubbles that may form in the solution.</li> <li>b. Wait until the needle has been withdrawn to tap the syringe and expel the air carefully.</li> </ul>	<ul style="list-style-type: none"> <li>• .</li> </ul> <p>Handling the plunger at the knob only</p>

	c. Check the amount of medication in the syringe and discard any surplus.	will keep the shaft of the plunger sterile.  Ejecting air into the solution increases pressure in the ampoule and can force the medication to spill out over the ampoule. Careful measurement ensures that the correct dose is withdrawn. -If not all of the medication has been removed from the ampoule, it must be discarded because there is no way to maintain the sterility of the contents in an unopened ampoule.
10.	<ul style="list-style-type: none"> <li>Discard the ampoule in a kidney tray or a suitable container after comparing with the medication chart.</li> </ul>	
11.	<ul style="list-style-type: none"> <li>Dispose the syringe by sterile method and keep the syringe in safe and clean tray. If the medication is to be given IM or if agency policy requires the use of a needle to administer medication, attach the selected needle to the syringe.</li> </ul>	
12.	<ul style="list-style-type: none"> <li>Perform hand hygiene.</li> </ul>	

#### **D. LOADING OF MEDICATION FROM VIAL**

**Definition**

To remove medication from a vial defines that you prepare medication from an ampoule for IV, IM or another administration of medication.

**Purpose**

- To prepare medication for administration of medication by sterilized method.

**Equipment's required**

- Medication chart
- Sterile syringe (1)
- Sterile needle (1)

Size depends on medication being administration and client

- Vial of medication prescribed
- Spirit swabs
- Second needle (optional)

Size depends on medication being administration and client

- Kidney Tray (1)
- Steel Tray (1)

**Procedure**

<b>S.N.</b>	<b>Care Action</b>	<b>Rationale</b>
1.	<ul style="list-style-type: none"> <li>• Gather Equipment's.</li> <li>• Check medication order against the original doctor's order according to agency policy.</li> </ul>	<ul style="list-style-type: none"> <li>• This comparison helps to identify errors that may have occurred when orders were transcribed.</li> </ul>
2.	<ul style="list-style-type: none"> <li>• Perform hand hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> </ul>
3.	<ul style="list-style-type: none"> <li>• Remove the metal or plastic cap on the vial that protects the rubber stopper</li> </ul>	<ul style="list-style-type: none"> <li>• The metal or plastic cap prevents contamination of the rubber top.</li> </ul>
4.	<ul style="list-style-type: none"> <li>• Swab the rubber top with the spirit swab.</li> </ul>	<ul style="list-style-type: none"> <li>• Sprit removes surface bacteria contamination.</li> <li>• This should be done the first the rubber stopper is entered, and with any subsequent re-entries into the vial.</li> </ul>
5.	<ul style="list-style-type: none"> <li>• Remove the cap from the needle by pulling it straight off.. Draw back an amount of air into the syringe that is equal to the specific dose of medication to be withdrawn.</li> </ul>	<ul style="list-style-type: none"> <li>• Before fluid is removed, injection of an equal amount of air is required to prevent the formation of a partial vacuum because a vial is a sealed container. If not enough air is injected, the negative pressure makes it difficult to withdraw the medication</li> </ul>
6.	<ul style="list-style-type: none"> <li>• Pierce the rubber stopper in the center with the needle tip and inject the measured air into the space above the solution. The vial may be</li> </ul>	<ul style="list-style-type: none"> <li>• Air bubbled through the solution could result in withdrawal of an inaccurate amount of medication.</li> </ul>

	positioned upright on a flat surface or inverted	
7.	<ul style="list-style-type: none"> <li>Invert the vial and withdraw the needle tip slightly so that it is below the fluid level.</li> </ul>	<ul style="list-style-type: none"> <li>This prevents air from being aspirated into the syringe.</li> </ul>
8.	<ul style="list-style-type: none"> <li>Draw up the prescribed amount of medication while holding the syringe at eye level and vertically.</li> </ul> <p><b>Nursing Alert</b> Be careful to touch the plunger at the knob.</p>	<ul style="list-style-type: none"> <li>Holding the syringe at eye level facilitates accurate reading, and vertical position makes removal of air bubbles from the syringe easy.</li> <li>Handling the plunger at the knob only will keep the shaft of the plunger sterile.</li> </ul>
9.	<p><u>Removal of air:</u></p> <ul style="list-style-type: none"> <li>If any bubbles accumulate in the syringe, tap the barrel of the syringe sharply and move the needle past the fluid into the air space to re-inject the air bubble into the vial.</li> <li>Return the needle tip to the solution and continue withdrawing the medication.</li> </ul>	<ul style="list-style-type: none"> <li>Removal of air bubbles is necessary to ensure that the dose of medication is accurate.</li> </ul>
10.	<ul style="list-style-type: none"> <li>After the correct dose is withdrawn, remove the needle from the vial and carefully replace the cap over the needle.</li> </ul> <p><b>Nursing Alert</b> Some agencies recommended changing needles, if needed to administer the medication, before administering the medication.</p>	<ul style="list-style-type: none"> <li>This prevents contamination of the needle and protects the nurse against accidental needle sticks.</li> <li>This method can decrease possibility of contamination by the first needle and maintain sharp of the tip on needle.</li> </ul>
11.	If a multi-dose vial is being used, label the vial with the date and time opened, and store the vial containing the remaining medication according to agency policy.	<ul style="list-style-type: none"> <li>Because the vial is sealed, the medication inside remains sterile and can be used for future injections.</li> </ul>
12.	Perform hand hygiene.	<ul style="list-style-type: none"> <li>To prevent the spread of infection.</li> </ul>

**E. PREVENTION OF THE NEEDLE-STICK INJURIES:  
ONE-HANDED NEEDLE RECAPPING TECHNIQUE**

**Definition**

One-handed needle recapping is a method that places the cap to needle on clean and safe place such as inside a big tray.

**Purpose**

To prevent own finger or another person by needle from sticking accidentally

**Procedure**

S.N.	Care Action	Rationale
1.	<u>Until giving injection:</u> <ul style="list-style-type: none"> <li>• Before giving the injection, place the needle cover on a solid, immovable object such as the rim of a bedside table or big tray.</li> <li>• The open end of the cap should face the nurse and be within reach of the nurse's dominant, or injection hand.</li> <li>• Give the injection</li> </ul>	<ul style="list-style-type: none"> <li>• Plan safe handling and disposal if needles before beginning the procedure.</li> </ul>
2.	<u>Recapping:</u> <ul style="list-style-type: none"> <li>• Place the tip of the needle at the entrance of the cap.</li> <li>• Gently slide the needle into the needle cover.</li> </ul>	<ul style="list-style-type: none"> <li>• This method can allow time.</li> </ul>
3.	<ul style="list-style-type: none"> <li>• Once the needle is inside the cover, use the object's resistance to completely cover the needle.</li> </ul>	<ul style="list-style-type: none"> <li>• Confirm that the needle is covered by the cap.</li> </ul>
4.	<ul style="list-style-type: none"> <li>• Dispose of the needle at the first opportunity</li> </ul>	<ul style="list-style-type: none"> <li>• This can reduce the risk of needle-sticking.</li> </ul>
5.	<ul style="list-style-type: none"> <li>• Perform hand hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection.</li> </ul>

**\*Nursing Alert\***

This procedure should be used only when a sharps disposal box is unavailable and the nurse cannot leave the client's room.



## F. GIVING AN INTRA-MUSCULAR INJECTION

### **Definition:**

Intra-muscular injection is the injection of medicine into muscle tissue. To produce quick action an patient as the medicine given by injection is rapidly absorbed. Intramuscular injections are often given in the deltoid, vastus laterals, ventrogluteal and dorsogluteal muscles.

### **Purpose**

- To administer medication deeply into muscle tissue, without injury to the patient.
- To administer a medication with absorption and onset of action quicker than the oral and that may be irritating to the subcutaneous tissues.
- To promote and prevent from disease.

### **Equipment's required**

- Client's chart and Cardex
- Prescribed medication
- Sterile syringe (3-5 mL) (1)
- Sterile needle in appropriate size: commonly used 21 to 23 G with 1.5”(3.8cm) needle (1)
- Spirit swabs
- Kidney tray (1)
- Disposable container (1)
- Ampoule cutter if available (1)
- Steel Tray (1)
- Disposable gloves if available (1)
- Pen

### **\*Nursing Alert\***

- The needle may be packaged separately or already attached to the sterile syringe. Prepackaged loaded syringes usually have a needle that is 1” long. BUT! Check the package with care before opening it.
- The needles used for IM injections are longer than subcutaneous needles (Rationale: Needles must reach deep into the muscle.)
- Needle length also depends on the injection site, client's size, and amount of subcutaneous fat covering the muscle.
- The needle gauge for IM injections should be larger to accommodate viscous solutions and suspensions.

## Procedure

S.N.	Care Action	Rationale
1.	<ul style="list-style-type: none"> <li>Assemble Equipment's and check the doctor's instructions.</li> </ul>	<ul style="list-style-type: none"> <li>This ensures that the client receives the right medication at the right time by the proper route.</li> </ul>
2.	<ul style="list-style-type: none"> <li>Explain the procedure to the client.</li> </ul>	<ul style="list-style-type: none"> <li>Explanation fosters his/her cooperation and allays anxiety.</li> </ul>
3.	<ul style="list-style-type: none"> <li>Perform hand hygiene and put on gloves if available.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the spread of infection.</li> <li>Gloves act as a barrier and protect the nurse's hands from accidental exposure to blood during the injection procedure</li> </ul>
4.	<ul style="list-style-type: none"> <li>Withdraw medications from an ampoule or a vial as described in the procedure "Removing medication from an ampoule" or "Removing medication from a vial"</li> </ul> <p><b>*Nursing Alert*</b> Do not add any air to the syringe</p>	<ul style="list-style-type: none"> <li>To prepare correct medication safely before using.</li> <li>Addition of air bubble to the syringe is unnecessary and potentially dangerous because it could result in an overdose of medication as well as transfer microorganism of surrounding to syringe..</li> </ul>
5.	<p><u>Identify the client carefully using the following way:</u></p> <ul style="list-style-type: none"> <li>Check the name in the identification bracelet/patient chart.</li> <li>Ask the client his/her name</li> <li>Verify the client's identification with a staff member/ visitors who knows the client.</li> </ul>	<ul style="list-style-type: none"> <li>You should not rely on the name on the door, on the board or over the bed. It is sometimes inaccurate.</li> <li>This is the most reliable method if available.</li> <li>This requires an answer from the client. In the elderly and/or illness the method may causes confusion.</li> <li>This is double-checked identify.</li> </ul>
6.	<ul style="list-style-type: none"> <li>Close the door and put a screen</li> </ul>	<ul style="list-style-type: none"> <li>To provide for privacy.</li> </ul>
7.	<ul style="list-style-type: none"> <li>Assist the client to a</li> </ul>	<ul style="list-style-type: none"> <li>Collect site identification</li> </ul>

	<p>comfortable position.</p> <ul style="list-style-type: none"> <li>• Select the appropriate injection site using anatomic landmarks.</li> <li>• Locate the site of choice</li> </ul> <p><b>*Nursing Alert*</b> Ensure that the area is not tender and is free of lumps or nodules.</p>	<p>decreases the risk of injury.</p> <ul style="list-style-type: none"> <li>• God visualization is necessary to establish the correct location of the site and avoid damage to tissues.</li> <li>• Nodules or lumps may indicate a previous injection site where absorption was inadequate.</li> </ul>
8.	<p><u>Cleanse the skin with a spirit swab:</u></p> <ul style="list-style-type: none"> <li>• Start from the injection site and move outward in a circular motion to a circumference of about 2” (5 cm) from the injection site.</li> <li>• Allow the area to dry.</li> <li>• Place a small, dry gauze or spirit swab on a clean, nearby surface or hold it between the fingers of your non-dominant hand.</li> </ul>	<ul style="list-style-type: none"> <li>• Cleansing the injection site prepares it for the injection.</li> <li>• This method removes pathogen away from the injection site.</li> <li>• Alcohol or spirit gives full play to disinfect after dried.</li> <li>• To prepare a dry gauze or spirit swab to give light pressure immediately after I.M.</li> </ul>
9.	<ul style="list-style-type: none"> <li>• Remove the needle cap by pulling it straight off.</li> </ul>	<ul style="list-style-type: none"> <li>• This technique lessens the risk of accidental needle-stick and also prevents inadvertently unscrewing the needle from the barrel of the syringe.</li> </ul>
10.	<ul style="list-style-type: none"> <li>• Spread the skin at the injection site using your non-dominant hand.</li> </ul>	<ul style="list-style-type: none"> <li>• This makes the tissue taut and facilitates needle entry. You may minimize his/her discomfort.</li> </ul>
11.	<ul style="list-style-type: none"> <li>• Hold the syringe in your dominant hand like a pencil.</li> </ul>	<ul style="list-style-type: none"> <li>• This position keeps your fingers off the plunger, preventing accidental medication loss while inserting the needle.</li> </ul>
12.	<ul style="list-style-type: none"> <li>• Insert the needle quickly into the tissue at a 90 degree angle.</li> </ul>	<ul style="list-style-type: none"> <li>• A quick insertion is less painful.</li> <li>• This angle ensures you will enter muscle tissue.</li> </ul>
13.	<ul style="list-style-type: none"> <li>• Release the skin and move your non-dominant hand to steady the syringe’s lower end.</li> </ul>	<ul style="list-style-type: none"> <li>• To prevent movement of the syringe.</li> </ul>

14.	<u>Aspiration blood:</u> <ul style="list-style-type: none"> <li>Aspirate gently for blood return by pulling back on the plunger with your dominant hand.</li> <li>If blood enters the syringe on aspiration, withdraw the needle and prepare a new injection with a new sterile set-up</li> </ul>	<ul style="list-style-type: none"> <li>A blood return indicates IV needle placement.</li> <li>Possibly a serious reaction may occur if a drug intended for intramuscular use is injected into a vein.</li> <li>Blood contaminates the medication, which must be redrawn.</li> </ul>
15.	<ul style="list-style-type: none"> <li>If no blood appears, inject the medication at a slow and steady rate(; 10 seconds/ mL of medication)</li> </ul>	<ul style="list-style-type: none"> <li>Rapid injection may be painful for the client. Injecting slowly reduces discomfort by allowing time for the solution to disperse in the tissues.</li> </ul>
16.	<ul style="list-style-type: none"> <li>Remove the needle quickly at the same angle you inserted it.</li> </ul>	<ul style="list-style-type: none"> <li>Slow needle withdrawal may be uncomfortable for the client.</li> </ul>
17.	<ul style="list-style-type: none"> <li>Massage the site gently with a small, dry gauze or spirit swab, unless contraindicated for specific Medication.</li> <li>If there are contraindications to massage, apply gentle pressure at the site with small, dry gauze or a spirit swab.</li> </ul>	<ul style="list-style-type: none"> <li>Massaging the site promotes medication absorption and increases the client's comfort.</li> <li>Do not massage a heparin site because of the medication's anticoagulant action.</li> <li>Light pressure causes less trauma and irritation the tissues. Massage can force medication into the subcutaneous tissues in some medications.</li> </ul>
18.	<u>Discard the needle:</u> <ul style="list-style-type: none"> <li>Do not recap the needle.</li> <li>Discard uncapped needle and syringe in appropriate container if available.</li> </ul>	<ul style="list-style-type: none"> <li>Most accidental needle-sticks occur while recapping needles.</li> <li>Proper disposal prevents injury.</li> </ul>
19.	<ul style="list-style-type: none"> <li>Assist the client to a position of comfort.</li> </ul>	<ul style="list-style-type: none"> <li>To facilitate comfort and make him/her relax.</li> </ul>
20.	<ul style="list-style-type: none"> <li>Remove your gloves and perform hand hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>To prevent the spread of infection.</li> </ul>

21.	<u>Recording:</u> <ul style="list-style-type: none"> <li>Record the medication administered, dose, date, time, route of administration, and IM site on the appropriate form.</li> </ul>	<ul style="list-style-type: none"> <li>Documentation provides coordination of care.</li> <li>Site rotation prevents injury to muscle tissue</li> </ul>
22.	<u>Evaluation the client's response:</u> <ul style="list-style-type: none"> <li>Check the client's response to the medication within an appropriate time.</li> <li>Assess the site within 2 to 4 hours after administration.</li> </ul>	<ul style="list-style-type: none"> <li>Drugs administered parenterally have a rapid onset.</li> <li>Assessment of the site deters any untoward effects</li> </ul>

**\*Nursing Alert\***

- No more than 5 mL should be injected into a single site for an adult with well-developed muscles.
- If you must inject more than 5 mL of solution, divide the solution and inject it at two separate sites.
- The less developed muscles of children and elderly people limit the intramuscular injection to 1 to 2 ml.
- Special considerations for pediatric: The gluteal muscles can be used as the injection site only after a toddler has been walking for about 1 year.
- Special considerations for elder: IM injection medications can be absorbed more quickly than expected because elder clients have decreased muscle mass.

## G. STARTING AN INTRA-VENOUS INFUSION

**Definition:**

Starting intra-venous infusion is a process that gives insertion of Intra-venous catheter for IV therapy

**Purpose:**

- To give nutrient instead of oral route
- To provide medication by vein continuously
- To prevent and treat shock and collapse.
- To administer blood product to establish therapeutic blood level.

**Equipment's required:**

- Prescribed I.V. solution
- I.V. infusion set/ IV. tubing (1)
- IV. catheter or butterfly needle in appropriate size (1)
- Spirit swabs
- Adhesive tape
- Disposable gloves if available (1)
- IV. stand (1)
- Arm board, if needed, especially for infant
- Steel Tray (1)
- Kidney tray (1)

**Procedure**

Action	Rational
1. Assemble all Equipment's and bring to bedside.	• Having equipment available saves time and facilitates accurate skill performance
2. Check I.V. solution and medication additives with Dr.'s order	• Ensures that the client receives the correct I.V. solution and medication as ordered by Dr
3. Explain procedure to the client	• Explanation allays his/her anxiety and fosters his/her cooperation
4. Perform hand hygiene	• To prevent the spread of infection
5. Prepare I.V. solution and tubing: a) Maintain aseptic technique when opening sterile packages and I.V. solution	• This prevents spread of microorganisms
b) Clamp tubing, uncap spike, and insert into entry site on bag as manufacturer directs.	• This punctures the seal in the I.V. bag
c) Squeeze drip chamber and allow it to fill at least one-third to half way.	• Suction effects cause to move into drip chamber. Also prevents air from moving down the tubing

d) Remove cap at end of tubing, release clamp, allow fluid to move through tubing. Allow fluid to flow until all air bubbles have disappeared.	<ul style="list-style-type: none"> <li>• This removes air from tubing that can, in larger amounts, act as an air embolus</li> </ul>
e) Close clamp and recap end of tubing, maintaining sterility of set up.	<ul style="list-style-type: none"> <li>• To maintain sterility</li> </ul>
f) If an electric device is to be used, follow manufacturer's instructions for inserting tubing and setting infusion rate	<ul style="list-style-type: none"> <li>• This ensures correct flow rate and proper use of equipment</li> </ul>
g) Apply label if medication was added to container	<ul style="list-style-type: none"> <li>• This provides for administration of correct solution with prescribed medication or additive.</li> <li>• Pharmacy may have added medication and applied label.</li> </ul>
h) Place time-tape (or adhesive tape) on container as necessary and hang on I.V. stand	<ul style="list-style-type: none"> <li>• This permits immediate evaluation of I.V. according to schedule.</li> </ul>
6. Preparation the position: a) Have the client in supine position or comfortable position in bed. b) Place protective pad under the client's arm.	<ul style="list-style-type: none"> <li>• Mostly the supine position permits either arm to be used and allows for good body alignment</li> </ul>
7. Selection the site for venipuncture: a) Select an appropriate site and palpate accessible veins	<ul style="list-style-type: none"> <li>• The selection of an appropriate site decreases discomfort for the client and possible damage to body tissues</li> </ul>
b) Apply a tourniquet 5-6 inches above the venipuncture site to obstruct venous blood flow and distend the vein.	<ul style="list-style-type: none"> <li>• Interrupting the blood flow to the heart causes the vein to distend.</li> <li>• Distended veins are easy to see</li> </ul>
c) Direct the ends of the tourniquet away from the site of injection  d) Check to be sure that the radial pulse is still present	<ul style="list-style-type: none"> <li>• The end of the tourniquet could contaminate the area of injection if directed toward the site of injection.</li> <li>• Too much tight the arm makes the client discomfort.</li> <li>• Interruption of the arterial flow impedes venous filling.</li> </ul>
8. Palpation the vein a) Ask the client to open and close his/her fist.	<ul style="list-style-type: none"> <li>• Contraction of the muscle of the forearm forces blood into the veins, thereby distending them further</li> </ul>
b) Observe and palpate for a suitable vein	<ul style="list-style-type: none"> <li>• To reduce several puncturing</li> </ul>
c) If a vein cannot be felt and seen, do the following:	

<ul style="list-style-type: none"> <li>• Release the tourniquet and have the client lower his/her arm below the level of the heart to fill the veins. Reapply tourniquet and gently over the intended vein to help distend it</li> <li>• Tap the vein gently</li> <li>• Remove tourniquet and place warmed-moist compress over the intended vein for 10-15 minutes.</li> </ul>	<ul style="list-style-type: none"> <li>• Lowering the arm below the level of the heart, tapping the vein, and applying warmth help distend veins by filling them with blood.</li> </ul>
<p>9. Put on clean gloves if available.</p>	<ul style="list-style-type: none"> <li>• Care must be used when handling any blood or body fluids to prevent transmission of HIV and other blood-borne infectious disease</li> </ul>
<p>10. Cleanse the entry site with an antiseptic solution (such as spirit) according to hospital policy.</p> <ol style="list-style-type: none"> <li>a) <u>Use a circular motion</u> to move from the center to outward for several inches</li> <li>b) Use several motions with same direction as from the upward to the downward around injection site approximate 5-6 inches</li> </ol>	<ul style="list-style-type: none"> <li>• Cleansing that begins at the site of entry and moves outward in a circular motion carries organisms away from the site of entry</li> <li>• Organisms on the skin can be introduced into the tissues or blood stream with the needle</li> </ul>
<p>11. Holding the arm with un-dominant hand</p> <ol style="list-style-type: none"> <li>a) Place an un-dominant hand about 1 or 2 inches below entry site to hold the skin taut against the vein.</li> <li>b) Place an un-dominant hand to support the forearm from the back side</li> </ol> <p>❖Nursing Alert❖ Avoid touching the prepared site</p>	<ul style="list-style-type: none"> <li>• Pressure on the vein and surrounding tissues helps prevent movement of the vein as the needle or catheter is being inserted.</li> <li>• The needle entry site and catheter must remain free of contamination from un-sterile hands.</li> </ul>
<p>12. Puncturing the vein and withdrawing blood:</p> <ol style="list-style-type: none"> <li>a) Enter the skin gently with the catheter held by the hub in the dominant hand, bevel side up, at a 15-30degree angle.</li> <li>b) The catheter may be inserted from directly over the vein or the side of the vein.</li> <li>c) While following the course of the vein, advance the needle or catheter into the vein.</li> <li>d) A sensation can be felt when the needle enters the vein.</li> </ol>	<ul style="list-style-type: none"> <li>• This technique allows needle or catheter to enter the vein with minimum trauma and deters passage of the needle through the vein.</li> </ul>



<p>e) When the blood returns through the lumen of the needle or the flashback chamber of the catheter, advance either device 1/8 to 1/4 inch farther into the vein.</p> <p>f) A catheter needs to be advanced until hub is at the venipuncture site</p>	<ul style="list-style-type: none"> <li>• The tourniquet causes increased venous pressure resulting in automatic backflow.</li> <li>• Having the catheter placed well into the vein helps to prevent dislodgement</li> </ul>
<p>13. Connecting to the tube and stabilizing the catheter on the skin:</p> <p>a) Release the tourniquet.</p> <p>b) Quickly remove protective cap from the I.V. tubing</p> <p>c) Attach the tubing to the catheter or needle</p> <p>d) Stabilize the catheter or needle with non-dominant hand</p>	<ul style="list-style-type: none"> <li>•The catheter which immediately is connected to the tube causes minimum bleeding and patency of the vein is maintained</li> </ul>
<p>14.Starting flow</p> <p>a) Release the clamp on the tubing</p> <p>b) Start flow of solution promptly</p> <p>c) Examine the drip of solution and the issue around the entry site for sign of infiltration</p>	<ul style="list-style-type: none"> <li>• If catheter accidentally slips out of vein, solution will accumulate and infiltrate into surrounding tissue</li> </ul>
<p>15.Fasten the catheter and applying the dressing:</p> <p>a) Secure the catheter with narrow non-allergenic tape</p> <p>b) Place strictly sided-up under the hub and crossed over the top of the hub.</p> <p>c) Loop the tubing near the site of entry</p>	<ul style="list-style-type: none"> <li>•Non-allergenic tape is less likely to tear fragile skin.</li> <li>•The weight of tubing is enough to pull it out of the vein if it is not well anchored.</li> <li>•There is various way to anchor the hub. You should follow agency /hospital policy.</li> <li>•To prevent the catheter from removing accidentally</li> </ul>
<p>16. Bring back all Equipment's and dispose in proper manner</p>	<ul style="list-style-type: none"> <li>• To prepare for the next procedure</li> </ul>
<p>17.Remove gloves and perform hand hygiene</p>	<ul style="list-style-type: none"> <li>• To prevent the spread of infection</li> </ul>
<p>18. If necessary, anchor arm to an arm board for support</p>	<ul style="list-style-type: none"> <li>• An arm board helps to prevent change in the position of the catheter in the vein. Site protectors also will be used to protect the I.V. site.</li> </ul>

19. Adjust the rate of I.V. solution flow according to Dr.'s order.	<ul style="list-style-type: none"> <li>• Dr. prescribed the rate of flow or the amount of solution in day as required to the client's condition</li> <li>• Some medications are given very less amount. You may use infusion pump to maintain the flow rate</li> </ul>
20. Document the procedure including the time, site, catheter size, and the client's response	<ul style="list-style-type: none"> <li>• This ensures continuity of care</li> </ul>
21. Return to check the flow rate and observe for infiltration	<ul style="list-style-type: none"> <li>• To find any abnormalities immediately</li> </ul>

### ❖ Nursing Alert ❖

You should have special consideration for the elderly and infant.

#### To Older adults

- Avoid vigorous friction at the insertion site and using too much alcohol. (Rationale: Both can traumatize fragile skin and veins in the elderly)

#### To Infant and Children

- Hand insertion sites should not be the first choice for children. (Rationale: Nerve endings are more very close to the surface of the skin and it is more painful).

## H. MAINTENANCE OF I.V. SYSTEM

### **Definition:**

Maintenance of I.V. system is defined as routine care to keep well condition of I.V. therapy.

### **Purpose:**

- To protect injection site from infection
- To provide safe IV therapy
- To make the patient comfort with IV therapy
- To distinguish any complications as soon as possible

### **Equipment's required:**

- Steel Tray (1)
- Spirit swab
- Dry gauze or cotton

- Adhesive tape
- IV infusion set if required
- Kardex, patient's record
- Kidney tray (1)

**Maintenance of I.V. system: General caring for the patient with an I.V.**

Care Action	Rationale
1. Make at least hourly checks of the rate, tubing connections, and amount and type of solution present. If using an electronic infusion device (pump or controller), check that all settings are correct.	<ul style="list-style-type: none"> <li>• Regular checking gives proper amount</li> </ul>
2. Watch for adverse reactions. One such problem is infiltration, in which the I.V. solution infuses into tissues instead of the vein. Check the insertion site for redness, swelling, or tenderness hourly. Document that you have checked the site.	<ul style="list-style-type: none"> <li>• Keen observation prevents any complications with I.V.</li> </ul>
3. Report any difficulty at once. The doctor may order the I.V. line to be discontinued or to be irrigated.	
4. Safeguard the site and be aware of tubing and pump during transfers, ambulation, or other activities.	<ul style="list-style-type: none"> <li>• If a controller is being used, remember this system works on the principle of gravity.</li> <li>• If the bag of solution is too low, blood will flow up the tubing and may cause complications.</li> </ul>
5. Change the I.V. dressing every 72 hours and if it becomes wet or contaminated with drainage.	<ul style="list-style-type: none"> <li>• Change of the dressing with wet or contamination of drainage prevents infection in the I.V. insertion site.</li> </ul>
6. Wear gloves when changing dressings or tubing.	<ul style="list-style-type: none"> <li>• Wear gloves prevents from infection.</li> <li>• The few times that nurse handle dressings, the lower the patient's risk of infection.</li> </ul>
7. Be sure to double-check all clamps when changing tubing, adding medications, or removing I.V. tubing (from a pump or controller).	<ul style="list-style-type: none"> <li>• Double-check system prevents from medical error.</li> </ul>

8. If the rate of flow is not regulated properly, it could result in the patient receiving a bolus of medication.	<ul style="list-style-type: none"> <li>• The rate of flow regulated prevent the patient from overdose.</li> </ul>
9. Always check to make sure medications, solutions, or additives are compatible before adding them to existing solutions.	<ul style="list-style-type: none"> <li>• Checking before adding avoid having incompatibility.</li> </ul>
10. Protect the I.V. site from getting wet or soiled.	<ul style="list-style-type: none"> <li>• Protection of the I.V. site reduces the possibility of infection.</li> </ul>
11. If the patient will be away from the nursing unit for tests or procedures, be sure there is adequate solution to be infused while he/she is gone.	<ul style="list-style-type: none"> <li>• It will avoid having shortage of IV. or making coagulation while having tests or procedures.</li> </ul>

### Maintenance of I.V. system: Changing of I.V. system

Care Action	Rationale
1. Check I.V. solution.	<ul style="list-style-type: none"> <li>• Ensure that correct solution will be used.</li> </ul>
2. Determine the compatibility of all I.V. fluids and additives by consulting appropriate literature.	<ul style="list-style-type: none"> <li>• Incompatibilities may lead to precipitate formation and can cause physical, chemical, and therapeutic patient changes.</li> </ul>
3. Determine patient's understanding of need for continued I.V. therapy.	<ul style="list-style-type: none"> <li>• Reveals need for patient instruction.</li> </ul>
4. Assess patency of current I.V. access site.	<ul style="list-style-type: none"> <li>• If patency is occluded, a new I.V. access site may be needed. Notify a doctor.</li> </ul>
5. Have next solution prepared and accessible (at least 1 hour) before needed. Check that solution is correct and properly labeled. Check solution expiration date and for presence of precipitate and discoloration.	<ul style="list-style-type: none"> <li>• Adequate planning reduces risk of clot formation in vein caused by empty I.V. bag.</li> <li>• Checking prevents medication error.</li> </ul>
6. Prepare to change solution when less than 50 ml of fluid remains in bottle or bag or when a new type of solution is ordered.	<ul style="list-style-type: none"> <li>• Preparation ahead of time prevents air from entering tubing and vein from clotting from lack of flow.</li> </ul>
7. Prepare patient and family by explaining the procedure, its purpose, and what is expected of patient.	<ul style="list-style-type: none"> <li>• Appropriate explanation decreases his/her anxiety and promote cooperation.</li> </ul>
8. Be sure drip chamber is at least half full.	<ul style="list-style-type: none"> <li>• Half full in Chamber provides fluids to vein while bags are changed.</li> </ul>

9 Perform hand hygiene.	<ul style="list-style-type: none"> <li>• Hand hygiene reduces transmission of microorganisms.</li> </ul>
10. Prepare new solution for changing. If using plastic bag, remove protective cover from I.V. tubing port. If using glass bottle, remove metal cap.	<ul style="list-style-type: none"> <li>• It permits quick, smooth and organized change from old to new solution.</li> </ul>
11. Move roller clamp to stop flow rate.	<ul style="list-style-type: none"> <li>• It Prevents solution removing in drip chamber from emptying while changing solutions.</li> </ul>
12. Remove old I.V. fluid container from I.V. stand.	<ul style="list-style-type: none"> <li>• Brings work to nurse's eye level.</li> </ul>
13. Quickly remove spike from old solution bag or bottle and, without touching tip, insert spike into new bag or bottle.	<ul style="list-style-type: none"> <li>• Reduces risk of solution in drip chamber running dry and maintains sterility.</li> </ul>
14. Hang new bag or bottle of solution on I.V. stand.	<ul style="list-style-type: none"> <li>• Gravity assists delivery of fluid into drip chamber.</li> </ul>
15. Check for air in tubing. If bubbles form, they can be removed by closing the roller clamp, stretching the tubing downward, and tapping the tubing with the finger.	<ul style="list-style-type: none"> <li>• Reduces risk of air embolus.</li> </ul>
16. Make sure drip chamber is one-third to one-half full. If the drip chamber is too full, pinch off tubing below the drip chamber, invert the container, squeeze the drip chamber, hang, hang up the bottle, replace the tubing.	<ul style="list-style-type: none"> <li>• Reduces risk of air entering tubing.</li> </ul>
17. Regulate flow to prescribed rate.	<ul style="list-style-type: none"> <li>• Deliver I.V. fluid as ordered.</li> </ul>
18. Place on bag. (Mark time on label tape or on glass bottle).	<ul style="list-style-type: none"> <li>• Ink from markers may leach through polyvinylchloride containers.</li> </ul>
19. Observe patient for signs of overhydration or dehydration to determine response to I.V. fluid therapy.	<ul style="list-style-type: none"> <li>• Provides ongoing evaluation of patient's fluid and electrolyte status.</li> </ul>
20. Observe I.V. system for patency and development of complications.	<ul style="list-style-type: none"> <li>• Provides ongoing evaluation of I.V. system.</li> </ul>

## I. ADMINISTERING MEDICATIONS BY HEPARIN LOCK

### **Definition:**

A heparin lock is an IV catheter that is inserted into a vein and left in place either for intermittent administration of medication or as open line in the case of an emergency. Administering medications by heparin lock is defined as one of IV therapy which can allow to be freedom clients while he/she has not received IV therapy.

### **Purpose:**

- To provide intermittent administration of medication
- To administer medication under the urgent condition

### **Equipment's required:**

- Patient's chart and cardex
- Prescribed medication
- Spirit swabs
- Disposable gloves if available (1)
- Kidney tray (1)
- Steel Tray (1)

### For flush

- Saline vial or saline in the syringe (1)
- Heparin flush solution (1)
- Syringe (3-5 mL) with 21–25-gauge needle (1)

### For Intermittent infusion

- IV bag or bottle with 50-100 solution (1)
- IV tubing set (1)
- IV stand (1)
- 21–23-gauge needle (1)
- Adhesive tape

### **❖Nursing Alert**

- A heparin lock has an adapter which is attached to the hub(end)of the catheter.
- An anticoagulant, approximately 2 mL heparin, is injected into the heparin lock.
- To reduce the possibility of clotting, flush the heparin lock with 2-3 mL of saline 8 hourly (or once a everyduty); Saline lock.
- Choose heparin lock or saline lock to decrease the possibility of making coagulation according to your facility's policy or Dr.'s order.

## **J. NEBULIZATION THERAPY**

### **Definition**

Nebulization is the process of medication administration via inhalation. It utilizes a nebulizer which transport medications to the lung by means of mist inhalation.

### **Purposes**

- To administer medications directly into respiratory tract for sputum expectoration.
- To liquefy and remove retained thick secretion from the lower respiratory tract.
- To increase vital capacity.
- To relive dyspnea
- To reduce inflammatory and allergic responses of upper respiratory tract.
- To prevent post- operative complication.

### **Equipment required**

- Medication and saline solution
- Face mask
- Sputum cup with disinfectant
- Cotton ball
- Disposable syringe 5ml
- Kidney tray
- Nebulizer and nebulizer connecting tubes.

### **Procedure**

1. Identify the patient and check physician's instructions and nursing care plan.
2. Monitor heart rate before and after treatment for patient using bronchodilator drugs. Bronchodilators may cause tachycardia, palpitation dizziness, nausea and nervousness.
3. Explain the procedure to the patient.
4. Assemble equipment at bedside.
5. Place the patient in a comfortable sitting or a semi flower's position.
6. Wash hands.
7. Add the prescribed amount of medication and saline or sterile water to the nebulizer. Connect the tubing to the compressor.
8. Position the patient appropriately, allowing optimal ventilation.
9. Place mask on the patient's face to cover his mouth and nose and instruct him to inhale deeply and slowly through mouth, hold breath and then exhale several times.

10. Instruct the patient to breath slowly and deeply until all the medication is nebulized. Continue until medication is consumed. Medication usually nebulized within 5minutes.
11. Reassess patient status from breath sounds, respiratory status, pulse rate and other significant respiratory functions needed. Compare and record significant changes and improvement. Refer if necessary.
12. On completion of the treatment, encourage the patient to cough after several deep breaths. The medication may dilate airways facilitating expectoration of secretions.
13. Make the patient comfortable.
14. Observe the patient for any adverse reaction to the treatment.
15. Record medication used and description of secretion expectorant.
16. Disassemble and clean nebulizer after each used.
17. Wash hands.

## **11. CLEANING A WOUND AND APPLYING A STERILE DRESSING**

### **Definition:**

Sterile protective covering applied to a wound/incision, using aseptic technique with or without medication

### **Purpose:**

- To promote wound granulation and healing
- To prevent micro-organisms from entering wound
- To decrease purulent wound drainage
- To absorb fluid and provide dry environment
- To immobilize and support wound
- To assist in removal of necrotic tissue
- To apply medication to wound
- To provide comfort

### **Equipment required:**

- Sterile gloves (1)
- Gauze dressing set containing scissors and forceps (1)
- Cleaning disposable gloves (1)
- Cleaning basin (optional) (1) as required
- Plastic bag for soiled dressings or bucket (1)
- Waterproof pad or mackintosh (1)
- Tape (1)



- Surgical pads as required
- Additional dressing supplies as ordered, e.g., antiseptic ointments, extra dressings
- Acetone or adhesive remover (optional)
- Sterile normal saline (Optional)

**Procedure:**

Action	Rationale
1. Explain the procedure to the patient.	<ul style="list-style-type: none"> <li>• Providing information fosters his/her cooperation and allays anxiety.</li> </ul>
2. Assemble equipment	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance.</li> </ul>
3. Perform hand hygiene	<ul style="list-style-type: none"> <li>• To prevent the spread of infection</li> </ul>
4. Check Dr's order for dressing change. Note whether drain is present.	<ul style="list-style-type: none"> <li>• The order clarifies type of dressing</li> </ul>
5. Close door and put screen or pull curtains.	<ul style="list-style-type: none"> <li>• To provide privacy</li> </ul>
6. Position waterproof pad or mackintosh under the patient if desired.	<ul style="list-style-type: none"> <li>• To prevent bed sheets from wetting body substances and disinfectant.</li> </ul>
7. Assist patient to comfortable position that provides easy access to wound area.	<ul style="list-style-type: none"> <li>• Proper positioning provides for comfort.</li> </ul>
8. Place opened, cuffed plastic bag near working area.	<ul style="list-style-type: none"> <li>• Soiled dressings may be placed in disposal bag without contamination outside surfaces of bag.</li> </ul>
9. Loosen tape on dressing. Use adhesive remover if necessary. If tape is soiled, put on gloves.	<ul style="list-style-type: none"> <li>• It is easier to loosen tape before putting in gloves.</li> </ul>
10. <ol style="list-style-type: none"> <li>Put on disposable gloves</li> <li>Removed soiled dressings carefully in a clean to less clean direction.</li> <li>Do not reach over wound.</li> <li>If dressing is adhering to skin surface, it may be moistened by pouring a small amount of sterile saline or NS onto it.</li> <li>Keep soiled side of dressing away from patient's view.</li> </ol>	<ul style="list-style-type: none"> <li>• Using clean gloves protect the nurse when handling contaminated dressings.</li> <li>• Cautious removal of dressing(s) is more comfortable for patient and ensures that drain is not removed if it is present.</li> <li>• Sterile saline provides for easier removal of dressing.</li> </ul>

11. Assess amount, type, and odor of drainage.	<ul style="list-style-type: none"> <li>• Wound healing process or presence of infection should be documented.</li> </ul>
12. a) Discard dressings in plastic disposable bag. b) Pull off gloves inside out and drop it in the bag when your gloves were contaminated extremely by drainage.	<ul style="list-style-type: none"> <li>• Proper disposal dressings prevent the spread of microorganisms by contaminated dressings.</li> </ul>
13. Cleaning wound:  <u>When you clean wearing sterile gloves:</u>  a) Open sterile dressings and supplies on work area using aseptic technique.  b) Open sterile cleaning solution  c) Pour over gauze sponges in place container or over sponges placed in sterile basin.  d) Put on gloves. e) Clean wound or surgical incision: <ul style="list-style-type: none"> <li>• Clean from top to bottom or from center outward</li> <li>• Use one gauze square for each wipe, discarding each square by dropping into plastic bag. Do not touch bag with gloves.</li> <li>• Clean around drain if present, moving from center outward in a circular motion.</li> <li>• Use one gauze square for each circular</li> </ul> <u>When you clean using sterile forceps:</u> a) Open sterile dressings and supplies on work area using aseptic technique. b) Open sterile cleaning solution c) Pour over gauze sponges or cottons in place container or over sponges or cottons placed in sterile basin. d) Clean wound or surgical incision: Follow the former procedure using sterile gloves.	<ul style="list-style-type: none"> <li>• Supplies are within easy reach, and sterility is maintained.</li> <li>• Sterility of dressings and solution is maintained.</li> <li>• Cleaning is done from least to most contaminated area.</li> <li>• Previously cleaned area is re-contaminated.</li> <li>• Do not touch bag with sterile forceps to prevent contamination</li> </ul>
14. Dry wound or surgical incision using gauze sponge and same motion.	<ul style="list-style-type: none"> <li>• Moisture provides microorganisms.</li> </ul>

15. Apply antiseptic ointment by forceps if ordered.	<ul style="list-style-type: none"> <li>• Growth of microorganisms may be retarded and healing process improved.</li> </ul>
16. Apply a layer of dry, sterile dressing over wound using sterile forceps.	<ul style="list-style-type: none"> <li>• Primary dressing serves as a wick for drainage.</li> </ul>
17. If drainage is present: Use sterile scissors to cut sterile 4 X 4 gauze square to place under and around drain.	<ul style="list-style-type: none"> <li>• Drainage is absorbed, and surrounding skin areas protected.</li> </ul>
18. Apply second gauze layer to wound site.	<ul style="list-style-type: none"> <li>• Additional layers provide for increased absorption of drainage.</li> </ul>
19. Place surgical pad over wound as outermost layer if available.	<ul style="list-style-type: none"> <li>• Wound is protected from microorganisms in environment.</li> </ul>
20. Remove gloves from inside out and discard them in plastic bag if you wore.	<ul style="list-style-type: none"> <li>• To prevent cross-infection</li> </ul>
21. Apply tape or existing tape to secure dressings	<ul style="list-style-type: none"> <li>• Tape is easier to apply after gloves have been removed.</li> </ul>
22. a) Perform hand hygiene. b) Remove all equipment's and disinfect them as needed. Make him/her comfortable.	<ul style="list-style-type: none"> <li>• To prevent the spread of infection</li> </ul>
23. Document the following: a) Record the dressing change b) Note appearance of wound or surgical incision including drainage, odor, redness, and presence of pus and any complication. c) Sign the chart	<ul style="list-style-type: none"> <li>• Documentation provides coordination of care.</li> <li>• Giving signature maintains professional accountability.</li> </ul>
24. Check dressing and wound site every shift.	<ul style="list-style-type: none"> <li>• Close observation can find any complication as soon as possible.</li> </ul>

## 12. SUPPLYING OXYGEN INHALATION

### **Definition:**

Method by which oxygen is supplemented at higher percentages than what is available in atmospheric air.

### **Purpose:**

- To relieve dyspnea.
- To reduce or prevent hypoxemia and hypoxia.
- To alleviate associated with struggle to breathe.

### **Sources of Oxygen:**

Therapeutic oxygen is available from two sources

1. Wall Outlets (; Central supply)
2. Oxygen cylinders

### **❖Nursing Alert**

- Explain to the patient the dangers of lighting matches or smoking cigarettes, cigars, pipes. Be sure the patient has no matches, cigarettes, or smoking materials in the bedside table.
- Make sure that warning signs (oxygen- no smoking) are posted on the patient's door and above the patient's bed.
- Do not use oil on oxygen equipment. (Rationale: Oil can ignite if exposed to oxygen.)
- With all oxygen delivery systems, the oxygen is turned on before the mask is applied to the client.
- Make sure the tubing is patent at all times and that the equipment is working properly.
- Maintain a constant oxygen concentration for the patient to breathe; monitor equipment at regular intervals.
- Give pain medications as needed, prevent chilling and try to ensure that the patient gets needed rest. Be alert to cues about hunger and elimination. (Rationale: The patient's physical comfort is important.)
- Watch for respiratory depression or distress.
- Encourage or assist the patient to move about in bed. (Rationale: To prevent hypostatic pneumonia or circulatory difficulties.) Many clients are reluctant to move because they are afraid of the oxygen apparatus.
- Provide frequent mouth care. Make sure the oxygen contains proper humidification. (Rationale: Oxygen can be drying to mucous membrane.)
- Discontinue oxygen only after a physician has evaluated the client. Generally, you should not abruptly discontinue oxygen given in medium-to-high concentrations (above 30%). Gradually decrease it in stages, and monitor

the patient's arterial blood gases or oxygen saturation level. (Rationale: These steps determine whether the patient needs continued support.)

- Always be careful when you give high levels of oxygen to a patient with COPD. The elevated levels of oxygen in the patient's body can depress their stimulus to breathe.
- Never use oxygen in the hyperventilation patient.
- Wear gloves any time you might come into contact with the patient's respiratory secretions. (Rationale: To prevent the spread of infection).

**Equipment required:**

- Patient's chart and Kardex
- Oxygen connecting tube (1)
- Flow meter (1)
- Humidifier filled with sterile water (1)
- Oxygen source: Wall Outlets or Oxygen cylinder
- Tray with nasal cannula of appropriate size or oxygen mask (1)
- Kidney tray (1)
- Adhesive tape
- Scissors (1)
- Oxygen stand (1)
- Gauze pieces, Cotton swabs if needed
- "No smoking" sign board
- Globes if available (1)

Note:

**Characteristics of low flow system of oxygen administration**

Method	Flow rate (L/min)	Oxygen concentration delivered	Advantages	Disadvantages
Nasal cannula	1	22-24 %	<ul style="list-style-type: none"> <li>• Convenient</li> <li>• Comfortable more than facemask</li> <li>• bring less anxiety</li> <li>• Allows patient to talk and eat</li> <li>• Mouth breathing does not affect the concentration of delivered oxygen</li> </ul>	<ul style="list-style-type: none"> <li>• Assumes an adequate breathing pattern</li> <li>• Unable to deliver concentrations above 44 %</li> </ul>
	2	26-28 %		
	3	28-30 %		
	4	32-36 %		
	5	36-40 %		
	6	40-44 %		

Simple face mask	5-6	40 %	<ul style="list-style-type: none"> <li>• Can deliver high concentration of oxygen more than nasal cannula</li> </ul>	<ul style="list-style-type: none"> <li>• May cause anxiety</li> <li>• Able to lead hotness and claustrophobic</li> <li>• May cause dirty easier, so cleansing is needed frequently</li> <li>• Should be removed while eating and talking</li> <li>• Tight seal or long wearing can cause skin irritation on face</li> </ul>
	6-7	50 %		
	7-8(-10)	60 %		

High flow devices such as venture mask, oxygen hood and tracheostomy mask. You should choose appropriate method of oxygen administration with Dr's prescription and nursing assessment.

**Procedure: a. Nasal Cannula Method**

Action	Rationale
1. Check doctor's prescription including date, time, flow liter/minute and methods	<ul style="list-style-type: none"> <li>• To avoid medical error</li> </ul>
2. Perform hand hygiene and wear gloves if available	<ul style="list-style-type: none"> <li>• To prevent the spread of infection</li> </ul>
3. Explain the purpose and procedures to the Patient	<ul style="list-style-type: none"> <li>• Providing information fosters the patient's cooperation and allays his/her anxiety</li> </ul>
4. Assemble equipment's	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill performance</li> </ul>
5. Prepare the oxygen equipment: <ol style="list-style-type: none"> <li>Attach the flow meter into the wall outlet or oxygen cylinder</li> <li>Fill humidifier about 1/3 with sterile water or boiled water</li> <li>Blow out dusts from the oxygen cylinder</li> <li>Attach the cannula with the connecting tubing to the adapter on the humidifier</li> </ol>	<ul style="list-style-type: none"> <li>• Humidification prevents drying of the nasal mucosa</li> <li>• To prevent entering dust from exist of cylinder to the nostril</li> </ul>
6. Test flow by setting flow meter at 2-3L/minute and check the flow on the hand.	<ul style="list-style-type: none"> <li>• Testing flow before use is needed to provide prescribed oxygen to the client</li> </ul>

7. Adjust the flow meter's setting to the ordered flow rate.	<ul style="list-style-type: none"> <li>•The flow rate via the cannula should not exceed 6L/m. Higher rates may cause excess drying of nasal mucosa.</li> </ul>
8. Insert the nasal cannula into patient's nostrils, adjust the tubing behind the patient's ears and slide the plastic adapter under the patient's chin until he or she is comfortable.	<ul style="list-style-type: none"> <li>•Proper position allows unobstructed oxygen flow and eases the patient's respirations</li> </ul>
9. Maintain sufficient slack in oxygen tubing	<ul style="list-style-type: none"> <li>•To prevent the tubing from getting out of place accidentally</li> </ul>
10. Encourage the patient to breathe through the nose rather than the mouth and expire from the mouth.	<ul style="list-style-type: none"> <li>•Breathing through the nose inhales more oxygen into the trachea, which is less likely to be exhaled through the mouth</li> </ul>
11. Initiate oxygen flow	<ul style="list-style-type: none"> <li>•To maintain doctor's prescription and avoid oxygen toxicity</li> </ul>
12. Assess the patient's response to oxygen and comfort level.	<ul style="list-style-type: none"> <li>•Anxiety increases the demand for oxygen</li> </ul>
3. Dispose of gloves if you wore and perform hand hygiene	<ul style="list-style-type: none"> <li>•To prevent the spread of infection</li> </ul>
4. Place "No Smoking" signboard at entry into the room	<ul style="list-style-type: none"> <li>• The sign warns the patient and visitors that smoking is prohibited because oxygen is combustible</li> </ul>
5. Document the following: Date, time, method, flow rate, respiratory condition and response to oxygen	<ul style="list-style-type: none"> <li>• Documentation provides coordination of care</li> <li>• Sometimes oxygen inhalation can bring oxygen intoxication.</li> </ul>
6. Sign the chart	<ul style="list-style-type: none"> <li>• To maintain professional accountability</li> </ul>
7. Report to the senior staff	<ul style="list-style-type: none"> <li>• To provide continuity of care and confirm the patient's condition</li> </ul>
8. Check the oxygen setup including the water level in the humidifier. Clean the cannula and assess the patient's nares at least every 8 hours.	<ul style="list-style-type: none"> <li>• Sterile water needs to be added when the level falls below the line on the humidification container.</li> <li>• Nares may become dry and irritated and require the use of a water-soluble lubricant.</li> <li>• In long use cases, evaluate for pressure sores over ears, cheeks and nares.</li> </ul>

❖ **Nursing Alert** ❖

After used the nasal cannula, you should cleanse it as follows:

1. Soak the cannula in clean water for an hour
2. Dry it properly
3. Cleanse the tip of cannula by spirit swab before applying to client

### 13. CARE OF NASO-GASTRIC TUBE

#### A. INSERTING A NASO-GASTRIC TUBE

**Definition:**

Method of introducing a tube through the nose into the stomach

**Purpose:**

- To feed client with fluids when oral intake is not possible
- To dilute and remove consumed poison
- To instill ice-cold solution to control gastric bleeding
- To prevent stress on operated site by decompressing stomach of secretions and gas
- To relieve vomiting and distention

**Equipment:**

**Nasogastric tube in the appropriate size (1)**

- Syringe 10 ml (1)
- Lubricant
- Cotton balls
- Kidney tray (1)
- Adhesive tape
- Stethoscope (1)
- Clamp (1)
- Marker (1)
- Tray (1)
- Disposable gloves if available (1 pair)

**Procedure:**

Action	Rationale
1. Check the Doctor's order for the insertion of the Naso-gastric tube.	• This clarifies the procedure and type of equipment required.
2. Explain the procedure to the client.	• Explanation facilitates client cooperation.
3. Gather the equipment	• Organization provides accurate skill performance.



4. Assess client's abdomen	<ul style="list-style-type: none"> <li>• Assessment determines the presence of bowel sounds and the amount of abdominal distention.</li> </ul>
5. Perform hand hygiene. Wear disposable gloves if available.	<ul style="list-style-type: none"> <li>• Hand hygiene deters the spread of microorganisms. But sterile technique is not needed because the digestive tract is not sterile.</li> <li>• Gloves protect from exposure to blood or body fluids.</li> </ul>
6. Assist the client to high Fowler's position, or 45 degrees, if unable to maintain the upright position.	<ul style="list-style-type: none"> <li>• Upright position is more natural for swallowing and protects against aspiration if the client should vomit.</li> </ul>
7. Checking the nostril: a. Check the nares for patency by asking the client to occlude one nostril and breathe normally through the other. b. Clean the nares by using cotton balls c. Select the nostril through which air passes more easily.	<ul style="list-style-type: none"> <li>• Tube passes more easily through the nostril with the largest opening.</li> </ul>
8. Measure the distance to insert the tube by placing: a. Place the tip of tube at client's nostril extending to tip of earlobe b. Extend it to the tip of xiphoid process c. Mark tube with a marker pen or a piece of tape	<ul style="list-style-type: none"> <li>• Measurement ensures that the tube will be long enough to enter the client's stomach.</li> </ul>
9. Lubricant the tip of the tube (at least 1-2 inches) with a water-soluble lubricant	<ul style="list-style-type: none"> <li>• Lubricant reduces friction and facilitates the passage of the tube into the stomach.</li> <li>• Xylocaine jelly may not be recommended to use as a lubricant due to the risk of xylocaine shock.</li> <li>• Water-soluble lubricant will not cause pneumonia if the tube accidentally enters the lungs.</li> </ul>

<p>10. Inserting the tube:</p> <ol style="list-style-type: none"> <li>Insert the tube into the nostril while directing the tube downward and backward.</li> <li>The client may gag when the tube reaches the pharynx.</li> <li>Instruct the client to touch his chin to his chest.</li> <li>Encourage him/her to swallow even if no fluids are permitted.</li> <li>Advance the tube in a downward and backward direction when the client swallows.</li> <li>Stop when the client breathes.</li> <li>If gagging and coughing persist, check the placement of tube with a tongue depressor and flashlight if necessary.</li> <li>Keep advancing the tube until the marking or the tape marking is reached.</li> </ol> <p>❖ Nursing Alert ❖</p> <ul style="list-style-type: none"> <li>Do not use force. Rotate the tube if it meets resistance.</li> <li>Discontinue the procedure and remove the tube if there are signs of distress, such as gasping, coughing, cyanosis, and the inability to speak or hum.</li> </ul>	<ul style="list-style-type: none"> <li>Following the normal contour of the nasal passage while inserting the tube reduces irritation and the likelihood of mucosal injury</li> <li>The gag reflex stimulated by the tube</li> <li>Swallowing helps advance the tube, causes the epiglottis to cover the opening of the trachea, and helps to eliminate gagging and coughing</li> <li>Excessive coughing and gagging may occur if the tube has curled in the back of the throat.</li> <li>Forcing the tube may injure mucous membranes.</li> <li>The tube is not in the esophagus if the client shows signs of distress and is unable to speak or hum.</li> </ul>
<p>11. While keeping one hand on the tube, verify the tube's placement in the stomach.</p> <ol style="list-style-type: none"> <li><u>Aspiration of a small amount of stomach contents:</u> Attach the syringe to the end of the tube and aspirate a small amount of stomach contents. Visualize aspirated contents, checking for color and consistency</li> <li><u>Auscultation:</u> Inject a small amount of air (10- 15 ml) into the nasogastric tube while you listen with a stethoscope approximately 3 inches (about 8 cm) below the sternum.</li> <li>Obtain radiograph of placement of</li> </ol>	<ul style="list-style-type: none"> <li>The tube is in the stomach if its contents can be aspirated.</li> <li>If the tube is in the stomach, you will be able to hear the air enter (a whooshing sound) If the tube is in the esophagus, injecting the air will be difficult or impossible. In addition, injection of air often causes the client to belch</li> </ul>

tube (as ordered by doctor.)	immediately. If the tube is in the larynx, the client usually is unable to speak
12. Secure the tube with tape to the client's nose. ❖Nursing Alert❖ • Be careful not to pull the tube too tightly against the nose.	• Constant pressure of the tube against the skin and mucous membranes causes tissue injury.
13. Clamp the end of the nasal-gastric tube while you bend the tube by fingers not to open	• Bending tube prevents the inducing of secretion
14. Putt off and dispose the gloves, perform hand hygiene	• To prevent the spread of infection
15. Replace and properly dispose of equipment	• To prepare for the next procedure
16. Record the date and time, the size of the nasal-gastric tube, the amount and color of drainage aspirated, relevant client reactions and sign the chart	• Documentation provides coordination of care

## B. REMOVING A NASO-GASTRIC TUBE

### Procedure

Action	Rationale
1. Assemble the appropriate equipment, such as kidney tray, tissues or gauze, and disposable gloves, at the client's bedside.	• Organization facilitates accurate performance
2. Explain to the client what you are going to do.	• Providing explanation fosters cooperation
3. Put on the gloves	• To prevent the spread of infection
4. Remove the tube a) Take out the adhesive tape holding the naso-gastric tube to the client's nose b) Simply pulling it out, slowly at first and then rapidly when the client begins to cough. c) Conceal the tube. d) Be sure to remove any tapes from the client's face. Acetone may be necessary.	• Do not remove the tube if you encounter any resistance not to harm any membranes or organs. Do another attempt in an hour. • Continuous slow pulling it out can lead to coughing or discomfort  • Acetone helps any adhesive substances from the face. You should also wipe acetone out after removing tapes because the remaining acetone may irritate the skin.
6. Provide oral care if needed.	• To provide comfort
7. Take off gloves and perform hand hygiene.	• To prevent the spread of infection

8. Record the date, time and the client's condition on the chart. Be alert for complaints of discomfort, distension, or nausea after removal. Sign the chart.	<ul style="list-style-type: none"> <li>• Documentation provides coordination of care</li> <li>• Giving signature maintains professional accountability.</li> </ul>
9. Dispose the equipment and replace them.	<ul style="list-style-type: none"> <li>• To prepare for the next procedure</li> </ul>
10. Report to the senior staff.	<ul style="list-style-type: none"> <li>• To provide continuity of care</li> </ul>

## 14. PERSONAL PROTECTIVE EQUIPMENT

### Definition

Personal protective equipment (PPE) refers to specialized clothing or equipment worn by an employee for protection against infection materials. PPE is used in health care setting to improve personal safety in health care environment through the appropriate use of PPE (CDC, 2004)

### Equipment's

- Gloves
- Mask (surgical or particulate respirator)
- Impervious gown
- Protective eye wear (does not include eye glasses)

### Donning on PPE

Action	Rational
1. Check medical record and nursing plan of care for type of precautions and review precautions in infection control manual	<ul style="list-style-type: none"> <li>• Mode of transmission of organism determines types of precautions required</li> </ul>
2. Plan nursing activities before entering patient room	<ul style="list-style-type: none"> <li>• Organization facilitates performance of task and adherence to precautions</li> </ul>
3. Perform hand hygiene	<ul style="list-style-type: none"> <li>• Prevents the spread of micro-organism.</li> </ul>
4. Provide instruction about precautions to patient, family members and visitors	<ul style="list-style-type: none"> <li>• Encourages co-operation of patient and family</li> </ul>
5. Put on gown gloves, mask and protective eyewear based on the type of exposure anticipated and category of isolation precautions	<ul style="list-style-type: none"> <li>• Use of PPE interrupts chain of infection and protects patient and nurse. Gown should protect entire uniform. Gloves protects hands and wrist from micro-organism. Mask protect droplet nuclei and large particles aerosols. Eye wears protects</li> </ul>

<p>a. Put on the gown with opening the back. Tie gown securely at neck and waist.</p> <p>b. Put on the mask or respirator over your nose, mouth, and chin. Secure ties or elastic band at the middle of head and neck. If respirator is used, perform a fit check. Inhale the respirator should collapse. Exhale: air should not leak out.</p> <p>c. Put on goggles. Place over eyes and adjust to fit. Alternately a face shield could be used to take the place of mask and goggles.</p> <p>d. Put on clean disposable gloves. Extend gloves to cover the cuffs of the gown.</p>	<p>mucous membrane in the eye from splashes.</p> <ul style="list-style-type: none"> <li>• Gown should fully cover the torso from the neck to knees, arm to the end of wrists, and wrap around the back</li> <li>• Mask protect droplet nuclei and large particles aerosols. A mask fit securely to provide protection.</li> <li>• Eye wears protects mucous membrane in the eye from splashes. A fit securely to provide protection.</li> <li>• Gloves protects hands and wrist from micro-organism.</li> </ul>
<p>6. Identify the patient. Explain the procedure. Continue with patient care as appropriate</p>	<ul style="list-style-type: none"> <li>• It validates the correct patient and correct procedure which may reduce anxiety and prepare the patient what to expect.</li> </ul>

### Donning off PPE

Action	Rational
<p>1. Remove PPE: Except for respirator, remove PPE at the doorway or in an anteroom and closing door</p> <p>a. If impervious gown has been tied in front of the body at the waist line, untie waist string before removing gloves</p> <p>b. Grasp the one hand of glove with the opposite glove hand and peel off. Turning the gloves inside out as you pull it off. Hold the removed glove in the remaining gloved hand.</p> <p>c. Slide fingers of ungloved hand under the remaining glove at the wrist, taking care not to touch the counter surface of the glove.</p> <p>d. Peel off the glove over the first glove, containing one glove inside the other. Discard in appropriate container</p>	<ul style="list-style-type: none"> <li>• Proper removal prevents contact with, and the spread of micro-organism.</li> <li>• Front of gown, includes waist strings, are contaminated. If tied in front of body, the tie must be untied before removing gloves</li> <li>• Outside of gloves are contaminated</li> <li>• Ungloved hand is clean and should not touch contaminated areas</li> <li>• Proper disposal prevents transmission of micro-organism</li> </ul>

<p>e. To remove the face shield or goggles: handle by the head band or earpieces. Lift away from the face place in designated receptacle for reprocessing or in an appropriate waste container</p> <p>f. To remove gown: unfasten ties, if at the neck and back. Allow the gown to fall away from shoulders. Touching only the inside of the gown, pull away from the torso. Keeping hands on the inner surface of the gown, pull from arms. Turn gown inside out. Fold or roll into a bundle and discard</p> <p>g. To remove mask or respirator: grasp the neck ties or elastic, then top ties or elastic and remove. to care to avoid touching front of mask or respirator, save for future use in designated area.</p>	<ul style="list-style-type: none"> <li>• Prevents transmission of infection.</li> <li>• Gown front and sleeves are contaminated. Touching only the inside of the gown and pull it away from the torso prevents transmission of organism. Proper disposal prevents transmission of micro-organism</li> <li>• Front of mask or respirator is contaminated; do not touch, prevents transmission of micro-organism</li> </ul>
<p>2. Perform hand hygiene immediately after removing all PPE</p>	<ul style="list-style-type: none"> <li>• Prevents transmission of infection</li> </ul>

### Evaluation

1. Transmission of microorganism is prevented
2. Patient and staff remain free from exposure to potential infection

## 16. GLASSGLOW COMA SCALE

### Definition

A tool used to assess a patient level of consciousness by grading the patient's best response to stimuli using a numerical scale.

### Purposes

- To determine a change in a patient's condition based on changes in their level of consciousness.

### Equipment's

- Neurological head chart
- Torch light
- Scale to measure pupil size

SN	Category	Response
1	Eye Opening Response <ul style="list-style-type: none"> <li>• Spontaneous--open with blinking at baseline</li> <li>• To verbal stimuli, command, speech</li> <li>• To pain only (not applied to face)</li> <li>• No response</li> </ul>	4 point 3 point 2 point 1 point
2	Verbal Response <ul style="list-style-type: none"> <li>• Oriented</li> <li>• Confused conversation, but able to answer questions</li> <li>• Inappropriate words</li> <li>• Incomprehensible speech</li> <li>• No response</li> </ul>	5 point 4 point 3 point 2 point 1 point
3	Motor Response <ul style="list-style-type: none"> <li>• Obeys commands for movement</li> <li>• Purposeful movement to painful stimulus</li> <li>• Withdraws in response to pain</li> <li>• Flexion in response to pain (decorticate posturing)</li> <li>• Extension response in response to pain (decerebrate posturing)</li> <li>• No response</li> </ul>	6 point 5 point 4 point 3 point 2 point 1 point

### Procedures

- Rate the patient level of consciousness in each of the three categories by using the criteria
- Add the patient scores in each category to determine the total score
- If the record is different from the previous record inform the doctor

### Nursing alert

- 3-7 the patient is in coma
- 8-14 the patient level of consciousness is decreased
- 15 the patient is fully conscious

### Head injury classification:

- Severe Head Injury-: GCS score of 8 or less
- Moderate Head Injury-: GCS score of 9 to 12
- Mild Head Injury-: GCS score of 13 to 15

## 17. CARE OF DEAD BODY

### Definition

Dead body care means cleansing and preparation of the body following declaration of death by the physician.

### Purposes:

- To prepare the body for postmortem examination or funeral at home.
- To ensure proper identification of the patient.
- To maintain hygiene and prevent from spread of infection.
- To show respect for dead person.
- To facilitate transportation to mortuary/residence.

### Equipment's:

- Gloves
- Plastic apron
- Tray/ Trolley
- Soap, towel, water, bowl
- Bucket
- Bandage, cotton
- Patient's cloth
- Identification level, tape, comb

### Procedure:

1. As the physician attending the patient has declared the death, inform and express sympathy to the family members.
2. Ask if they wish to view the body, observe their response and offer them the opportunity to ask questions.
3. Ask about religious preference and cultural rituals.
4. Explain to the family that the body will be first care by the nurse before the body is given to the family.
5. Determine if patient was on isolation precautions for the infectious disease as precautions must be taken to prevent spread of disease to others.
6. Wash hands and collect articles.
7. Place the body in dorsal/flat position with only a small pillow under the head to prevent pooling of blood in the face and subsequent discoloration.
8. Remove all appliances used for the care of the patient e.g, IV lines/catheter, NG tube, urinary catheter, drainage tube, O<sub>2</sub> line etc.
9. Clean and close the eyes gently.
10. Clean the body thoroughly and plug the body opening such as nose, mouth, vagina, rectum with cotton swabs.



11. Put a clean gown on. Place an absorbent pad under the patient's buttocks.
12. Straighten legs, bring feet together and tie big toes.
13. Comb the person's hair neatly remove any clips, hair pins or rubber bands.
14. Dress the patient in own clean clothes.
15. Complete the identification tags and attaches one to patient's ankle.
16. Ensure all the documentation is completed including death certificate.
17. Handover the body to relatives after the bill has been settled and get the relative to sign in register.
18. In case of medico-legal case, notify to concerned/legal authorities before handing over the body to relatives.
19. Carefully transfer the body to a stretcher keeping the body aligned and covered with a clean sheet.
20. Remove remaining soiled linen, dressing, gown from room. Clean and disinfect all the articles properly.

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## 1. MONITORING CENTRAL VENOUS PRESSURE (CVP)

### Definition

**Central venous pressure (CVP)** describes the pressure of blood in the thoracic vena cava, near the right atrium of the heart. CVP reflects the amount of blood returning to the heart and the ability of the heart to pump the blood into the arterial system. **Central Venous pressure monitoring** means measurement of pressure within the right atrium of the heart either by fluid filled manometer connected to central venous catheter or transducer.

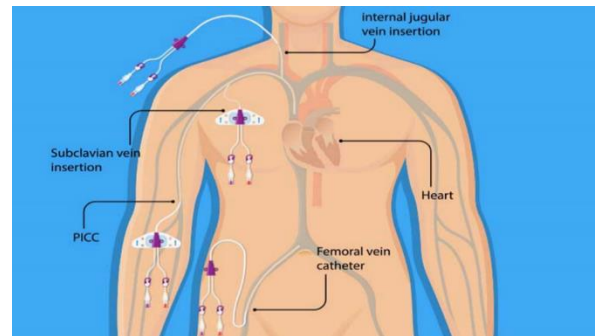
The normal central venous pressure is **2-6 mm of Hg**

A **CVP greater than 6mm of Hg** indicates elevated right ventricular preload and the common cause of an elevated CVP are hypovolemia or right sided heart failure.

A **CVP less than 2mm of Hg** indicates reduced right ventricular preload and the common cause of low CVP are hypovolemia, excessive blood loss, dehydration, vomiting or diarrhea.

The common insertion sites are:

- Internal jugular vein
- Subclavian vein
- Axillary vein
- Femoral vein
- Veins of the arm (also known as peripherally inserted central catheter)



### Purpose

- To serve as a guide for fluid replacement in seriously ill patients.
- To estimate blood volume deficits.
- To determine pressures in the right atrium and central veins.
- To evaluate for circulatory failure (in context with total clinical picture of a patient)

### Articles

- Venous pressure tray
- Cut-down tray
- Infusion solution and infusion set
- 3-way or 4-way stopcock (a pressure transducer may also be used)
- IV pole attached to bed
- Arms board
- Adhesive tape
- ECG monitor
- Carpenter's level (for establishing zero point)

## Procedure

Action	Rationale
<ol style="list-style-type: none"> <li>1. Assemble equipment according to manufacture directions.</li> <li>2. Explain that the procedure is similar to an IV and that the patient may move in bed as desired after passage of the CVP catheter.</li> <li>3. Place the patient in a position of comfort. This is the baseline used for subsequent readings.</li> <li>4. Attached manometer to the IV pole. The zero point of the manometer should be on a level with the patient's right atrium.</li> <li>5. Mark the mid- axillary line on the patient with an indelible pencil.</li> <li>6. The CVP catheter is connected to a 3-way stopcock that communicates to an open IV and to a manometer.</li> <li>7. Start the IV flow and fill the manometer 10 cm above anticipated reading (or until the level of 20cm, HOH is reached). Turn the stopcock and fill the tubing with fluid.</li> <li>8. The CVP site is surgically cleansed. The physician, introduces the CVP catheter</li> </ol>	<p>Serial CVP readings should be made with the patient in the same position. Inaccuracies in CVP readings can be produced by changes in positions, coughing, or straining during the reading.</p> <p>The right atrium is at the mid- axillary line, which is about 1/3 of the distance from the anterior to the posterior chest wall.</p> <p>The maxillary line is an external reference point for the zero level of the manometer (which coincides with level of the right atrium).</p> <p>Or, the CVP catheter may be connected to a transducer and an electric monitor CVP wave either digital or calibrated CVP wave read out.</p> <p>If the catheter is inserted through the subclavian or internal jugular vein, place patient in a head-down position to increase</p>

<p>percutaneously or by direct venous cut down and threaded through an antecubital, subclavian, or internal or external jugular vein into the superior vena cava just before it enters the right atrium.</p> <p>9. When the catheter enters the thorax an inspiratory fall and expiratory rise in venous pressure are observed.</p> <p>10. The patient may be monitored by ECG during catheter insertion.</p> <p>11. The catheter may be sutured and taped in place. A sterile dressing is applied.</p> <p>12. The infusion is adjusted to flow into the patient's vein by a slow continuous drip.</p>	<p>venous filling and reduced risk of air embolism. The correct catheter placement can be confirmed by fluoroscopy or chest x-ray.</p> <p>The fluid level fluctuates with respiration. If rises sharply with coughing/straining.</p> <p>When the tip of the catheter contacts the wall of the right atrium it may produce aberrant impulses and disturb cardiac rhythm.</p> <p>Label dressing with time and date of catheter insertion.</p> <p>The infusion may cause a significant increase in venous pressure if permitted to flow too rapidly.</p>
--	---

### Measuring Central Venous Pressure

Care Action	Rationale
<p>1. Place the patient in the identified position and confirm zero point. Intravascular pressures are measured to the atmospheric pressure at the middle of the right atrium; this is the zero point or external reference point.</p>	<p>The zero point or baseline for the manometer should be on level with the patient's right atrium. The middle of the right atrium is the mid-axillary line in the fourth intercostal space.</p>
<p>2. Position the zero point of the manometer at the level of the right atrium.</p>	<p>All personal taking the CVP measurement use the same zero point.</p>
<p>3. Turn the stopcock so that the IV solution</p>	<p>The column of fluid will fall until it meets an equal pressure (i.e., the patient's central</p>

flows into the manometer filling to about the 20-25cm level. Then turn the stopcock so that the solution in manometer flows into the patient. Observe the fall in the height of the column of fluid in the manometer. Record the level at which the solution stabilizes or stops moving downward. This is the central venous pressure. Record CVP and the position of the patient.

4. The CVP may range from 5-12cm. HOH.

5. Assess patient's clinical condition. Frequent changes in measurements (interpreted within the context of the clinical situation) will serve as a guide to detect whether the heart can handle its fluid load and whether hypovolemia or hypervolemia is present.

6. Turn the stopcock again to allow IV solution to flow from solution bottle into the patient's veins.

venous pressure). The reading is reflected by the height of a column of fluid in the manometer when there's open communication between the catheter and the manometer. The fluid in the manometer will fluctuate slightly with the patient's respirations. This confirms that the CVP is not obstructed by clotted blood.

The change in CVP is a more useful indication of adequacy of venous blood volume and alterations of cardiovascular function. CVP is a dynamic measurement. The normal values may change from patient to patient. The management of the patient's not based on one reading but on repeated serial readings in correlation with patient's clinical status.

CVP is interpreted by considering the patient's entire clinical picture, hourly urine output, heart rate, blood pressure, cardiac output measurements.

- A CVP zero indicates that patient is hypovolemia (verified if rapid infusion causes patient to improve)
- A CVP above 15-20cm. HOH may be due to either hypervolemic or poor cardiac contractility.

	When readings are not being made, flow is from a very slow micro drip to the catheter, bypassing the manometer.
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## 2. ASSISTING FOR EMERGENCY TRACHEOSTOMY

### **Definition**

Assisting in making surgical opening into anterior wall of trachea and inserting tube to maintain a patient airway.

### **Purpose**

- To bypass upper airway obstruction and trauma.
- To remove tracheobronchial secretions.
- To promote long term use of mechanical ventilation
- To prevent aspiration of oral or gastric secretion in unconscious or paralysed patients.
- To replace an endotracheal tube when long term mechanical ventilation is required.

### **Equipment**

- Tracheostomy set containing:
  - Toothed dissecting forceps (1)
  - Curved mosquito forceps (2)
  - Straight mosquito forceps (2)
  - Artery forceps (2)
  - Alice forceps (2)
  - Needle holder
  - Double hook retractors (2)
  - Blunt hook
  - Cricoids hook
  - Sharp scissor
  - Tracheal dilator
  - Dressing cups(2)
  - Suction catheter with connection
  - Cutting edge suture needle with thread
  - Dressing forceps
  - Hand towel
  - Kidney tray
  - Scalpel blade
  - Gloves
  - Mask
  - Apron
  - Antiseptic solution : Betadine or spirit



- Local anesthetic xylocaine 2%
- Disposable syringes
- Sand bag
- Soot light
- Tracheostomy tube

**Procedure:**

1. Explain procedure to patient if conscious and get consent from patient or relatives.
2. Place patient in supine position with full extension of neck and head.
3. Remove gown and expose neck.
4. Keep suction and oxygen ready for use.
5. Assist in preparing skin and administering anesthesia.
6. Assist and support patient as incision is made and provide suitable tracheostomy tube for insertion.
7. Assist in securing tracheostomy tube to neck by tying with tape.
8. Assist while the tube is being sutured.
9. Place Vaseline gauze around tube to provide lubrication.
10. Assist patient to a comfortable position.
11. Replace equipment.
12. Document time, tube size, purpose of tracheostomy and patient's condition.

**Post procedure care**

1. Connect to ventilator (if needed)
2. Place patient in semi- fowler position.
3. Check vital signs.
4. Administer analgesic as per order.
5. Watch for complication like bleeding, respiratory failure, blockage of tracheostomy tube with secretions e.g. pneumothorax, subcutaneous emphysema etc for 24 hours.
6. If metal tube is inserted, secure stilet at end of bed.
7. Place suction apparatus and suction tube ready at bedside.

### 3. TRACHEAL/ENDOTRACHEAL SUCTIONING

**Definition**

Endotracheal suctioning is defined as the procedure to remove pulmonary secretion mechanically from patient's airway passages via nose or mouth where ETT (endotracheal tube) is in place.

**Purpose**

- To maintain patient airway by removing accumulated secretions using sterile technique.
- To improve oxygenation and reduce the work of breathing.
- Stimulate the cough reflex.

- Prevent infection and atelectasis from retained secretion.

### **Equipment**

- Suction tray
- Suction catheter
- Sterile water for irrigation
- Normal saline
- Ambu bag
- Suction apparatus
- Face mask
- Gloves
- Kidney tray

### **Procedure:**

1. Explain procedure to patient if conscious/relative.
2. Wear mask
3. Give nebulizer and chest physio if secretions are thick.
4. Open suction tray.
5. Place sterile catheter in tray.
6. Fill cup with sterile water
7. Hyper oxygenate patient with Ambu bag.
8. Wear sterile gloves.
9. Fix catheter to suction tube.
10. Turn on suction source (keep one hand sterile throughout procedure).
11. Pinch and insert suction catheter into tracheostomy tube/endotracheal tube.
12. Releases suction tube, take out catheter in rotator movements (each suction should not exceed 10-15 sec).
13. Repeat same step till tracheostomy/ET tube is clear.
14. Rinse catheter in sterile water.
15. Discard suction catheter and replace equipment.
16. Document time, colour, amount and consistency of secretions patient's condition and cooperation.

## **4. TRACHEOSTOMY CARE**

### **Definition**

A tracheostomy is an opening through the neck into the trachea. A tracheostomy opens the airway and aids breathing.

A tracheostomy may be done in an emergency, at the patient's bedside or in an operating room. Depending on the person's condition, the tracheostomy may be temporary or permanent.

**Tracheostomy care** includes changing a tracheostomy inner tube, cleaning tracheostomy site and changing dressing around the site.

### **Purpose**

- To maintain airway patency
- To prevent infection at the tracheostomy site
- To facilitate healing and prevent skin excoriation around.
- To promote comfort
- To access condition of ostomy

### Articles required

- Gallipots-3
- Sterile towel
- Sterile nylon brush/tube brush
- Sterile gauze square
- Cotton twill ties or tracheostomy tie tapes
- A clean tray containing
  - Hydrogen peroxide
  - Normal saline
  - Sterile gloves – 1 pair
  - Face mask and eye shield
  - Waterproof pad

### Procedure

Action	Rationale
1. Asses condition of stoma: redness, swelling, character of secretions, presence of purulence all bleeding.	Presence of any of these indicates infection and culture examination may be warranted
2. Examine neck for subcutaneous emphysema evidenced by crepitus around the ostomy site.	Indicates air leak into subcutaneous tissue.
3. Explain procedure to the patient and teach means of communication such as eye blinking or raising a finger to indicate pain or distress	Obtain cooperation of patient.
4. Assist patient to a fowlers position and place waterproof pad on chest	Promote lung expansion. Prevent soiling of linen.
5. Wash hand thoroughly	Prevent cross-infection
6. Assemble equipments a. Open the sterile tracheostomy kit, pour hydrogen peroxide and sterile normal saline on separate gallipots. b. Open the other sterile supplies as needed including sterile applicators, suction kit and tracheostomy care kit. c. Put on face mask and eye shield	Hydrogen peroxide and saline removes mucus and crust which promote bacterial growth. Enhance performance phase of procedure. Protect the nurse.

7. Assist patient to fowlers position and place waterproof pad on chest	Promote lung expansion. Prevents soiling of linen.
8. Unlock the inner cannula and remove it by gently pulling it out toward you in the line with its curvature. Place the inner cannula in the bowl with hydrogen peroxide suction.	Hydrogen peroxide moistens and loosens dried secretions.
9. Remove the soiled tracheostomy dressing, discard the dressing and gloves.	
10. Clean the flange of the tube using sterile applicators or gauze moistened with hydrogen peroxide and then with normal saline. Use each applicator once only.	Using the applicator or gauze once only, avoids contaminating a clean area with a soiled gauze.
11. Clean the stoma tube with the gauze half strength hydrogen peroxide may be used. Thoroughly rinse the cleaned area using gauze squares moistened with sterile normal saline.	Hydrogen peroxide help to loosen dry crusted secretions. Hydrogen peroxide is irritating to the skin and inhibits healing if not removed thoroughly.
12. Dry the stoma tube with dry sterile gauze. An infected wound may be cleaned with gauze saturated with an antiseptic solution, then dried. A thin layer of antibiotic ointment may be applied to the stoma with a cotton swab.	May help to clear the wound infection.
13. Cleaning the inner cannula <ul style="list-style-type: none"> <li>• Remove the inner cannula from the soaking solution</li> <li>• Clean the lumen and entire cannula thoroughly using the brush.</li> <li>• Rinse the clean cannula by rinsing it with sterile normal saline.</li> </ul>	Thoroughly rinsing is important to remove hydrogen peroxide from inner cannula. Removes solution adhering on the cannula.
14. Replace the inner cannula and secure it in place <ul style="list-style-type: none"> <li>• Insert the inner cannula by grasping the outer</li> <li>• Lock the cannula in place by turning the lock into position.</li> </ul>	This secures the flange of the inner cannula to the outer cannula.
15. Apply sterile dressing <ul style="list-style-type: none"> <li>• Open and refold a 4*4 gauze dressing into a 'V' shape and place under the flange on the tracheostomy tube. Do not cut gauze pieces.</li> <li>• Ensure that the tracheostomy tube is securely supported while applying dressing.</li> </ul>	Avoid using cotton-filled 4*4 gauze. Cotton Or gauze fiber can be aspirated by the patient potentially creating a tracheal abscess. Excessive movement of the tracheostomy tube irritates the trachea.
16. Change the tracheostomy ties <ul style="list-style-type: none"> <li>• Leave the soiled tape in place until the new one is applied.</li> <li>• Grasp slit end of clean tape and pull it through opening on one side of the tracheostomy tube.</li> <li>• Pull the other end of the tape securely through the slit end of tracheostomy tube on the other side.</li> </ul>	Leaving tape in place ensures that tube will not be expelled if the patient moves or coughs. This action provides a secure attachment with knot. Prevents irritation and aids in rotation of pressure site.

<ul style="list-style-type: none"> <li>• Tie the tape at the side to side of the neck in a square knot.</li> </ul>	Excessive tightness compresses jugular veins, decrease blood circulation to the skin and results in discomfort for patient.
<p>17. Document all relevant information in the chart</p> <ul style="list-style-type: none"> <li>• Tracheostomy care carried out</li> <li>• Dressing change and</li> <li>• Observations.</li> </ul>	

**Consideration:**

- Tracheostomy dressing should be done every 8 hours or whenever dressing are soiled.
- Tracheostomy tube may come with disposable inner cannula or without the inner cannula. If disposable inner cannula is present, then replace the one that is inside with a new one.
- If only single lumen is present, clean the neck plate and tracheostomy site.
- Emphasize the importance of handwashing before performing tracheostomy care.
- Proper way on how to remove, change and replace the inner cannula
- Check and clean tracheostomy stoma.
- Assess for symptoms of infection.

**5. ASSISTING FOR LUMBAR PUNCTURE**

**Definition**

Assisting in aspiration of cerebro spinal fluid (CSF) from sub arachnoid space (lumbar cistern), by puncturing the space between spinous processes of L3 –L4 or L4-L5 using aseptic technique.

**Purpose:**

- To aspirate CSF for diagnostic\ therapeutic.
- To determine pressure.
- To introduce drugs intrathecally.
- To do myelogram.
- To give spinal anesthesia.

**Articles required:**

A dressing trolley with tray containing

- Betadine
- Tr. Benzoin
- Spirit
- Lignocaine 2%
- 5cc or 2cc syringe
- 20 or 22 no. needle
- Gloves
- Mask
- Lumber puncture set containing;
  - Dressing bowl -1

- Cotton balls
- Gauze pieces
- Dressing forceps-1
- Specimen bottles-3
- Biopsy towel-1
- Surgical towel-1
- LP needle-1
- Manometer (if pressure has to be measured)

**Procedure:**

1. Obtain informal written consent.
2. Explain procedure to patient and relatives and reassure patient throughout procedure.
3. Provide privacy
4. Position patient on left side with pillow under head and between legs. patients to firm surface with spine parallel to edge of bed.
5. Place patient in knee chest position so that chin touches knee and assist patient to maintain this posture throughout procedure.
6. Cover patient with top sheet and expose only back.
7. Wash hands.
8. Provide sterile gloves to physician.
9. Open lumbar puncture set.
10. Assist physician in preparing site.
11. Open 5cc or 2cc syringe. 20no and 22no. needles and one by one into sterile tray.
12. After showing label to physician, clean top of local anesthetic bottle and assist to withdraw medication.
13. Specimen is collected in respective containers and pressure reading is obtained.
14. After collecting specimens, needle is withdrawn. Assist physician to seal puncture with Tr. Benzoin swab.

**Post procedure care:**

1. Instruct patient to lie in supine position for 6-24hours without pillow.
2. Check pulse and respiration for 4-5hours and till stable
3. Encourage liberal fluid intake.
4. Label specimens and send to lab with investigation slip.
5. Replace equipment after rinsing.
6. Wash hands.
7. Document appearance of spinal fluid, specimens, sent lab, condition and reaction of patient.
8. Observe for headache, nausea, loss of sensation or movement in limbs.
9. Check puncture site frequently for CSF leakage.

## 6. ASSISTING IN ENDOTRACHEAL INTUBATION AND EXTUBATION

### a. Endotracheal Intubation

#### Definition

Endotracheal intubation (ETI) is a rapid, simple, safe, and non-surgical technique that achieves all the goals of airway management, namely, maintaining airway patency, protecting the lungs from aspiration, and permitting leak free ventilation during mechanical ventilation, and remains the gold standard procedure for airway management.

#### Purpose

- To maintain airway patency
- To protect the lungs
- To maintain ventilation

#### Equipment

- Laryngoscope with a curved or straight blade and working light source (check batteries and bulb regularly)
- Endotracheal (ET) tube with low-pressure cuff and adapter to connect tube to ventilator or
- Adhesive tape or tube fixation system
- Sterile anesthetic lubricant jelly (water-soluble)
- 10-mL syringe
- Suction source
- Suction catheter and tonsil suction
- Resuscitation bag and mask connected to oxygen source
- Sterile towel
- Gloves
- End tidal CO<sub>2</sub> detector

#### Procedure

1. Assess the patient's heart rate, level of consciousness, and respiratory status.
2. Remove the headboard from the bed
3. Prepare equipment
  - a. Ensure function of resuscitation bag with mask and suction
  - b. Assemble laryngoscope. Make sure light bulb is tightly attached and functional
  - c. Select ET tube of appropriate size

4. Place the ET tube on a sterile towel
5. Inflate the cuff then deflate maximally to make sure it assumes symmetrical shape and holds volume without leakage.
6. Lubricate the distal end of the tube liberally with the sterile anaesthetic water-soluble jelly.
7. Insert the stylet into the tube (if oral intubation is planned). Nasal intubation does not employ the use of the stylet
8. Ventilate and oxygenate the patient with the resuscitation bag and mask before intubation
9. Elevate the bed to position the patient at the level of own lower sternum
10. Hold the handle of the laryngoscope in the left hand and hold the patient's mouth open with the right hand by placing crossed fingers on the teeth.
11. Insert the curved blade of the laryngoscope along the right side of the tongue, push the tongue to the left, and use right thumb and index finger to pull patient's lower lip away from lower teeth.
12. Hold the handle of the laryngoscope in the left hand and hold the patient's mouth open with the right hand by placing crossed fingers on the teeth.
13. Lift the laryngoscope forward (toward ceiling) to expose the epiglottis.
14. Lift the laryngoscope upward and forward at a 45-degree angle to expose the glottis and visualize vocal cords
15. As the epiglottis is lifted forward (toward ceiling), the vertical opening of the larynx between the vocal cords will come into view.
16. Once the vocal cords are visualized, insert the tube into the right corner of the mouth and pass the tube while keeping vocal cords in constant view.
17. Once the vocal cords are visualized, insert the tube into the right corner of the mouth and pass the tube while keeping vocal cords in constant view.
18. Stop insertion just after the tube cuff has disappeared from view beyond the cords.
19. Withdraw laryngoscope while holding ET tube in place. Disassemble mask from resuscitation bag, attach bag to ET tube, and ventilate the patient.
20. Inflate the cuff with the minimal amount of air required to occlude the trachea.
21. Insert a bite block if necessary.
22. Ascertain expansion of both sides of the chest by observation and auscultation of breath sounds. To ensure correct placement
23. Record distance from proximal end of tube to the point where the tube reaches the teeth.



24. Secure the tube to the patient's face with adhesive tape or apply a commercially available endotracheal tube stabilization device.
25. Obtain a chest X-ray to verify tube position.
26. Document and monitor tube distance from lips to end of ET tube.
27. Record tube type and size, cuff pressure, and patient tolerance of the procedure. Auscultate breath sounds every 2 hours or if signs and symptoms of respiratory distress occur. Assess ABGs after intubation if requested by the health care provider.

## **b. Assisting In Extubation**

### **Definition**

Extubation is the removal of an endotracheal tube (ETT), which is the last step in liberating a patient from the mechanical ventilator.

### **Purposes**

To allow patient to breath on their own once:

- the underlying condition that led to the need for an artificial airway is reversed or improved. hemodynamic stability is achieved, with no new reasons for continued artificial airway support.
- the patient is able to effectively clear pulmonary secretions.
- airway problems have resolved; minimal risk for aspiration exists.
- mechanical ventilatory support is no longer needed.

### **Equipment**

- All equipment needed for intubation
- Suction catheter of appropriate size
- Normal Saline
- Scissors
- 10cc syringe (for cuffed endotracheal tubes)
- Appropriate oxygen delivery system
- Nebulizer
- AMBU bag

## **Procedure**

1. All necessary equipment should be available for extubation management and the rest of the equipment available nearby in case extubation does not go as planned
2. Explain the procedure
3. Place the patient in an upright sitting position.
4. Preoxygenate with 100% oxygen
5. Both the ETT and oral cavity should be suctioned
6. Preoxygenate with 100% oxygen again
7. Cut or loosen the tape
8. Ask the patient to take a deep breath and exhale and then pull the ET tube as the patient exhales
9. After the removal of the ETT, suction the oral cavity and ask the patient to take a deep breath and cough out all secretions.
10. The patient should be placed on supplemental oxygen as per physician's order
11. Confirm patient can vocalize.
12. Auscultate neck first for stridor, then lung fields. Encourage the patient to take deep breath and cough
13. Monitor patient's vital signs and respiratory patterns closely
14. Document the date and time of extubation

## **7. PERFORMING CARDIO PULMONARY RESUSCITATION (CPR)**

### **Definition**

Cardiopulmonary resuscitation (CPR), also known as basic life support, is used in the absence of spontaneous respirations and heartbeat to preserve heart and brain function while waiting for defibrillation and advanced cardiac life-support care. It is a combination of chest compressions, which manually pump the heart to circulate blood to the body systems, and "mouth-to-mouth" or rescue breathing, which supplies oxygen to the lungs. The American Heart Association uses the letters C-A-B to help people remember the order to perform the steps of CPR.

C: compressions

A: airway

B: breathing

### **Purpose**

- to restore and maintain breathing and circulation and to provide oxygen and blood flow to the heart, brain, and other vital organs

**Articles**

- PPE such as a face shield or one- way valve mask and gloves, if available
- Ambu- bag and oxygen, if available.

**Procedure**

Action	Rationale
<p>1. Assess responsiveness. If the patient is not responsive, call for help, pull call bell, and call the facility emergency w response number. Call for the automated external defibrillator (AED).</p>	<p>Assessing responsiveness prevents starting CPR on a conscious victim. Activating the emergency response system initiates a rapid response.</p>
<p>2. Put on gloves, if available.com Position the patient supine on his or her back on a firm, flat surface, with arms alongside the body. If the patient is in bed, place a backboard or other rigid surface under the patient (often the footboard of the patient's bed).</p>	<p>Gloves prevent contact with blood and body fluids. The supine position is required for resuscitative efforts and evaluation to be effective. Backboard provides a firm surface on which to apply compressions. If the patient must be rolled, move as a unit so the head, shoulders, and torso move simultaneously without twisting.</p> <p>This maneuver may be sufficient to open the</p>
<p>3. Use the head tilt-chin lift maneuver to open the airway. Place one hand on the victim's forehead and apply firm, backward pressure with the palm to tilt the head back. Place the fingers of the other hand under the bony part of the lower jaw near the chin and lift the jaw upward to bring the chin forward and the teeth almost to occlusion. If trauma to the head or neck is present or suspected, use the jaw-thrust maneuver to open the airway. Place one hand on each side of the</p>	<p>airway and promote spontaneous respirations.</p>

<p>patient's head. Rest elbows on the flat surface under the patient, grasp the angle of the patient's lower jaw, and lift with both hands.</p> <p>4. Look, listen, and feel for air exchange. Take at least 5 seconds and no more than 10 seconds.</p> <p>5. If the patient resumes breathing or adequate respirations and signs of circulation are noted, place the patient in the recovery position.</p> <p>6. If no spontaneous breathing is noted, seal the patient's mouth and nose with the face shield, one-way valve mask, or Ambu-bag (handheld resuscitation bag), if available. If not available, seal patient's mouth with rescuer's mouth.</p> <p>7. Instill two breaths, each lasting 1 second, making the chest rise.</p>	<p>These techniques provide information about the patient's breathing and the need for rescue breathing.</p> <p>The recovery position maintains alignment of the back and spine while allowing for continued observation and maintains access to the patient.</p> <p>Sealing the patient's mouth and nose prevents air from escaping. Devices, such as masks, reduce the risk for transmission of infections.</p> <p>Breathing into the patient provides oxygen to the patient's lungs. Hyperventilation results in increased positive chest pressure and decreased venous return. Blood flow to the lung's during CPR is only about 25% to 33% normal; patient requires less ventilation to provide oxygen and remove carbon dioxide. Longer breaths reduce the amount of blood that refills the heart, reducing blood flow generated by compressions. Delivery of large, forceful breaths may cause gastric inflation and distension.</p> <p>Inability to ventilate indicates that the airway may be obstructed. Repositioning</p>
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<p>8. If you are unable to ventilate the patient or the chest does not rise during ventilation, reposition the patient's head and reattempt to ventilate. If still unable to ventilate, begin CPR. Each subsequent time the airway is opened to administer breaths, look for an object. If an object is visible in the mouth, remove it. If no object is visible, continue with CPR.</p> <p>9. Check the carotid pulse, simultaneously evaluating for breathing, coughing, or movement. This assessment should take at least 5 seconds and no more than 10 seconds. Place the patient in the recovery position if breathing resumes.</p> <p>10. If the patient has a pulse, but remains without spontaneous breathing, continue rescue breathing at a rate of one breathe every 5 to 6 seconds, for a rate of 10 to 12 breaths per minute.</p> <p>11. If the patient is without signs of circulation, position the heel of one hand in the center of the chest between the nipples, directly over the lower half of the sternum. Place the other hand directly on top of the first hand. Extend or interlace fingers to keep fingers above the chest. Straighten arms and position shoulders directly over hands.</p>	<p>maneuvers may be sufficient to open the airway and promote spontaneous respirations. It is critical to minimize interruptions in chest compressions, to maintain circulatory perfusion.</p> <p>Pulse and other assessments evaluate cardiac function. The femoral pulse may be used for the pulse check.</p> <p>Rescue breathing maintains adequate oxygenation.</p> <p>Proper hand positioning ensures that the force of compressions is on the sternum, thereby reducing the risk of rib fracture, lung puncture, or liver laceration.</p> <p>Direct cardiac compression and manipulation of intrathoracic pressure supply blood flow during CPR. Compressing</p>
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<p>12. Perform 30 chest compressions at a rate of 100 per minute, counting "one, two, etc." up to 30, keeping elbows locked, arms straight, and shoulders directly over the hands. Chest compressions should depress the sternum 1½ to 2 inches. Push straight down on the patient's sternum. Allow full chest recoil (re-expand) after each compression.</p>	<p>the chest 1½ to 2 inches ensures that compressions are not too shallow and provides adequate blood flow. Full chest recoil allows adequate venous return to the heart.</p> <p>Breathing and compressions simulate lung and heart function, providing oxygen and circulation.</p>
<p>13. Give two rescue breaths after each set of 30 compressions. Do five complete cycles of 30 compressions and two ventilations.</p>	<p>The interval from collapse to defibrillation is the most important determinant of survival from cardiac arrest.</p>
<p>14. Defibrillation should be provided at the earliest possible moment, as soon as AED becomes available.</p>	<p>Once started, CPR must continue until one of these conditions is met. In a hospital setting, help should arrive within a few minutes.</p>
<p>15. Continue CPR until advanced care providers take over, the patient starts to move, you are too exhausted to continue, or a physician discontinues CPR. Advanced care providers will indicate when a pulse check or other therapies are appropriate (AHA, 2006).</p>	<p>Removing PPE properly reduces the risk for infection transmission and contamination of other items. Hand hygiene prevents transmission of microorganisms.</p>
<p>16. Remove gloves, if used. Perform hand hygiene.</p>	

## 8. CARE OF PATIENTS ON HEMODIALYSIS AND PERITONEAL DIALYSIS

### a. Care of Patient on Hemodialysis

#### Definition

Hemodialysis, a method of removing fluid and wastes from the body, requires access to the patient's vascular system via the insertion of a catheter into a vein or the creation of a fistula or graft. If a catheter is used, it is cared for in the same manner as a central venous access device. An arteriovenous fistula is a surgically created passage that connects an artery and vein. An

arteriovenous graft is a surgically created connection between an artery and vein using a synthetic material. Only specially trained healthcare team members should do accessing a hemodialysis arteriovenous graft or fistula.

### **Purpose**

- To remove waste products such as urea, creatinine and others excess substances from the blood
- To maintain fluid balance
- To remove toxins in cases of poisoning
- To relieve suffering caused by excess fluid and metabolic waste products in the blood

### **Equipment**

- Reverse osmosis solution
- Hemodialysis machine
- Hemodialysis set containing:
  - Sponge holder
  - 3 Sterile towels
  - 2 liters of normal saline solution
  - 2 Forceps
  - 4 Towel clips
  - 2 Gallipots
  - Disposable syringes, (20cc, 10cc, 2cc)
  - Betadine solution
  - Haemodialyzer fluid concentrate
  - Gauze pieces
  - Cotton
  - Fistula needles
  - Dialyzer and blood line
  - Rubber sheet
  - Bucket
  - Sterile gloves
  - Dialysate solution
  - IV set
  - Transducer filters
  - Heparin (if ordered)
  - Adhesive tape and scissors

## **Procedure**

1. Perform hand hygiene and put on PPE, if indicated.
2. Identify the patient.
3. Close curtains around bed and close the door to the room, if possible. Explain what you are going to do, and why you are going to do it, to the patient.
4. Inspect the area over the access site for any redness, warmth, tenderness, or blemishes. Palpate over the access site, feeling for a thrill or vibration. Palpate pulses distal to the site. Auscultate over the access site with bell of stethoscope, listening for a bruit or vibration.
5. Ensure that a sign is placed over the head of the bed informing the healthcare team, which arm, is affected. Do not measure blood pressure, perform a venipuncture, or start an IV on the access arm. Instruct the patient not to sleep with the arm with the access site under head or body.
6. Instruct the patient not to lift heavy objects with, or put pressure on, the arm with the access site. Advise the patient not to carry heavy bags (including purses) on the shoulder of that arm.
7. Remove PPE, if used. Perform hand hygiene.

## **b. Care of Patient on Peritoneal Dialysis**

### **Definition**

Peritoneal dialysis is a method of removing fluid and wastes from the body of a patient with kidney failure. A catheter inserted through the abdominal wall into the peritoneal cavity allows a special fluid (dialysate) to be infused and then drained from the body, removing waste products and excess fluid. The exit site is not disturbed initially after insertion, to allow for healing. Generally, this time frame is 7 to 10 days post-insertion. Once the exit site has healed, exit site care is an important part of patient care. The catheter insertion site is a site for potential infection, possibly leading to catheter tunnel infection and peritonitis (inflammation of the peritoneal membrane). Therefore, meticulous care is needed. The incidence of exit site infections can be reduced through a daily cleansing regimen by the patient or caregiver. Often, in the acute care setting, catheter care is performed using aseptic technique, to reduce the risk for a hospital-acquired infection. At home, clean technique can be used by the patient and caregivers.

### **Purpose**

- To correct an imbalance of fluid or electrolytes in the blood



- To remove toxins, drugs or other wastes normally excreted by the kidneys.

### **Articles**

- Face masks (2)
- Venesection tray
- Bucket
- Peritoneal dialysis catheter, tubing and clamps (dialysate) as ordered by the doctor
- Peritoneal dialysis solution
- 4 disposable syringe 20cc, 10cc, 1% or 2% xylocaine
- Sterile gloves
- Nonsterile gloves
- Sterile drain sponge
- Suture set
- Rubber sheet
- Betadine solution and warm water
- Measuring tape
- ECG Monitor
- Scissor and measuring jug
- Topical antibiotic, such as mupirocin or gentamicin, depending on order and policy
- Additional PPE, as indicated
- Antimicrobial cleansing agent, per facility policy
- Sterile applicator
- Plastic trash bag
- Bath blanket
- Sterile gauze squares (4)
- Sterile basin
- Stethoscope

### **Procedure**

1. Bring necessary equipment to the bedside stand or over bed table.
2. Perform hand hygiene and put on PPE, if indicated, identify the patient.
3. Close curtains around bed and close the door to the room, if possible. Explain what you are going to do and why you are going to do it to the patient. Encourage the patient to observe or participate, if possible.
4. Adjust bed to comfortable working height, usually elbow height of the
5. Assist the patient to a supine position. Expose the abdomen, draping the patient's chest with the bath blanket, exposing only the catheter site.
6. Put on clean gloves. Put on one of the facemasks; have patient put on the other mask.

7. Gently remove old dressing, noting odor, amount and color of drainage, leakage, and condition of skin around the catheter. Discard dressing in appropriate container
8. Remove gloves and discard. Set up sterile field. Open packages. Using aseptic technique, place two sterile gauze squares in basin with antimicrobial agent. Leave two sterile gauze squares opened on sterile field. Alternately (based on facility's policy), place sterile antimicrobial swabs on the sterile field. Place sterile applicator on field. Squeeze a small amount of the topical antibiotic on one of the gauze squares on the sterile field.
9. Put on sterile gloves. Pick up dialysis catheter with non-dominant hand. With the antimicrobial-soaked gauze/swab, cleanse the skin around the exit site using a circular motion, starting at the exit site and then slowly going outward 3 to 4 inches. Gently remove crusted scabs if necessary.
10. Continue to hold catheter with your non-dominant hand. After skin has dried, clean the catheter with an antimicrobial-soaked gauze, beginning at exit site, going around catheter, and then moving up to end of catheter. Gently remove crusted secretions on the tube, if necessary.
11. Using the sterile applicator, apply the topical antibiotic to the catheter exit site, if prescribed.
12. Place sterile drain sponge around exit site. Then place a 4 x 4 gauze over exit site. Remove your gloves and secure edges of gauze pad with tape. Some institutions recommend placing a transparent dressing over the gauze pads instead of tape. Remove masks.
13. Coil the exposed length of tubing and secure to the dressing or the patient's abdomen with tape.
14. Assist the patient to a comfortable position. Cover the patient with bed linens. Place the bed in the lowest position.
15. Put on clean gloves. Remove or discard equipment and assess the patient's response to the procedure.
16. Remove gloves and additional PPE, if used. Perform hand hygiene

## **10. PREOPERATIVE AND POSTOPERATIVE NURSING CARE**

### **a. Preoperative Nursing Care**

#### **Definition**

The preparation of patient before surgery including the necessary teaching and physical preparation for surgical intervention and transfer of the patient to operative table.

#### **Purpose**

- To help the patient feel comfortable and relaxed about the surgery.
- To teach the patient about the surgery and what they can expect.
- To teach the patient about health exercise they may need to do after the surgery.

**Equipment:**

- Shaving set
- Soap and water
- Brush
- Enema can
- Bed Pan
- Patient gown

**Procedure:**

Action	Rationale
1. Check the patient’s chart for the type of surgery and review the medical orders. Review the nursing database, history, and physical examination. Check that the baseline data are recorded; report those that are abnormal.	These checks ensure that the care will be provided for the right patient and any specific teaching based on the type of surgery will be addressed. Also, this review helps to identify patients who are at increased surgical risk.
2. Check that diagnostic testing has been completed and results are available; identify and report abnormal results.	This check may influence the type of surgery performed and anesthetic used, as well as the timing of surgery or the need for additional consultation
3. Gather the necessary supplies and bring to the bedside stand or overbed table.	Preparation promotes efficient time management and organized approach to the task. Bringing everything to the bedside conserves time and energy. Arranging items nearby is convenient, saves time, and avoids unnecessary stretching and twisting of muscles on the part of the nurse.
4. Perform hand hygiene and put on PPE, if indicated	Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions
5. Identify the patient.	Identifying the patient ensures the right patient receives the intervention and helps prevent errors.
6. Close curtains around bed and close the door to the room, if possible. Explain what you are going to do and why you are going to do it to the	This ensures the patient’s privacy. Explanation relieves anxiety and facilitates cooperation.

patient.	
7. Explore the psychological needs of the patient related to the surgery as well as the family. a. Establish the therapeutic relationship, encouraging the patient to verbalize concerns or fears. b. Use active learning skills, answering questions and clarifying any misinformation. c. Use touch, as appropriate, to convey genuine empathy. d. Offer to contact spiritual counselor (priest, minister, rabbi) to meet spiritual needs.	Meeting the psychological needs of the patient and family before surgery can have a beneficial effect on the postoperative course.  Spiritual beliefs for some patients and family can provide a source of support over the perioperative course.
8. Identify learning needs of patient and family. Ensure that the informed consent of the patient for the surgery has been signed, witnessed, and dated. Inquire if the patient has any questions regarding the surgical procedure .	This enhances surgical recovery and allays anxiety by preparing the patient for postoperative convalescence, discharge plans, and self-care.
9. Provide teaching about deep breathing exercises.	Deep breathing exercises improve lung expansion and volume, help expel anesthetic gases and mucus from the airway, and facilitate the oxygenation of body tissues.
10. Provide teaching regarding coughing and splinting (providing support to the incision)	Coughing helps remove retained mucus from the respiratory tract. Splinting minimizes pain while coughing or moving.
11. Provide teaching regarding incentive spirometer	Incentive spirometry improves lung expansion, helps expel anesthetic gases and mucus from the airway, and facilitates oxygenation of body tissues.
12. Provide teaching regarding leg exercises, as appropriate	Leg exercises assist in preventing muscle weakness, promote venous return, and decrease complications related to venous stasis. Leg exercises may be contraindicated for patients with certain conditions, such as lower extremity fractures.
13. Assist the patient in putting on antiembolism stockings and demonstrate how the pneumatic	Antiembolism stockings and pneumatic compression devices are used postoperatively

compression device operates.	for patients who are at risk for a deep-vein thrombosis (DVT) and pulmonary embolism.
14. Provide teaching regarding turning in the bed.	Turning and repositioning of the patient is important to prevent postoperative complications and to minimize pain.
15. Provide teaching about pain management. a. Discuss past experiences with pain and interventions that the patient has used to reduce pain. b. Discuss the availability of analgesic medication postoperatively. c. Explore the use of other alternative and nonpharmacologic methods to reduce pain, such as position change, massage, relaxation/diversion, guided imagery, and meditation	Using ordered analgesics to minimize pain helps prevent postoperative complications.  Past experiences with pain can impact patient's ability to manage the pain of surgery. Pain is a subjective experience and individuals vary on what interventions are effective in reducing pain.  These measures may reduce anxiety and may decrease the amount of pain medication that is needed. Analgesic therapy should involve a multimodal approach influenced by age, weight, and comorbidity.
16. Review equipment that may be used. a. Show the patient various equipment, such as IV pumps, electronic blood pressure cuff, tubes, and surgical drains.	Knowledge can reduce anxiety about equipment. The patient may need an indwelling urinary (Foley) catheter during and after surgery to keep the bladder empty and to monitor urinary output. Drains are frequently used to remove excess fluid around the surgical incision.
17. Provide skin preparation. a. Ask the patient to bathe or shower with the antiseptic solution. Remind the patient to clean the surgical site.	An antiseptic shower may be ordered 1 or 2 days before surgery and repeated the morning of surgery to begin the process of preparing the skin before surgery and to prevent infection. Recent research advises against hair removal of the surgical site due to increased potential for infection.  The Centers for Disease Control and Prevention (CDC) recommends that if shaving is necessary,

	<p>it should be performed immediately before the surgery, using disposable supplies and aseptic technique. Follow agency policy regarding skin preparation of the surgical patient. In addition, immediately before the surgical procedure, the skin of the patient's operative site will be cleansed with a product that is compatible with the antiseptic used for showering.</p>
<p>18. Provide teaching about and follow dietary/fluid restrictions.</p> <p>a. Explain to the patient that both food and fluid will be restricted before surgery to ensure that the stomach contains a minimal amount of gastric secretions. This restriction is important to reduce the risk of aspiration. Emphasize to the patient the importance of avoiding food and fluids during the prescribed time period, because failure to adhere may necessitate cancellation of the surgery.</p>	<p>Common practice in preparation for surgery has included having the patient fast after midnight, nothing by mouth (NPO) the night before surgery. At times, this restriction involves fasting up to 10 to 12 hours when surgery was performed in the later part of the next day. Recent research on both adults and children is challenging this NPO standard or fasting practice before surgery, claiming that a less restricted fluid intake of clear fluids could be safely taken up to 2 hours before surgery for individuals who are considered low risk for aspiration or regurgitation, and depending on the type of surgery (American Society of Anesthesiologists, 1999). Follow agency policy regarding the time period when this restriction will need to be followed</p>
<p>19. Provide intestinal preparation, as appropriate. In certain situations, the bowel will need to be prepared by administering enemas or laxatives to evacuate the bowel and to reduce the intestinal bacteria.</p> <p>a. As needed, provide explanation of the purpose of enemas or laxatives before surgery.</p>	<p>This preparation will be needed when major abdominal, perineal, perianal, or pelvic surgery is planned.</p> <p>Enemas can be stressful, especially when repeated enemas are required to obtain a clear fluid return. Repeated enemas may cause fluid and electrolyte imbalance, orthostatic hypotension, and weakness. Follow safety</p>

	<p>precautions to guard against patient falls.</p> <p>Anesthetic agents and abdominal surgery can interfere with normal elimination function during the initial postoperative period.</p>
<p>20. Check administration of regularly scheduled medications. Review with the patient routine medications, over-the-counter medications, and herbal supplements that are taken regularly. Check the physician's orders and review with the patient which medications he or she will be permitted to take the day of surgery.</p>	<p>Many patients take medications for a variety of chronic medical conditions. Adjustments in taking these medications may be needed before surgery. Certain medications, such as aspirin, are stopped days before surgery due to their anticoagulant effect. Certain cardiac and respiratory drugs may be taken the day of surgery per physician's order. If the patient is diabetic and takes insulin, the insulin dosage may be reduced.</p>
<p>21. Remove PPE, if used. Perform hand hygiene</p>	<p>Removing PPE properly reduces the risk for infection transmission and contamination of other items. Hand hygiene prevents the spread of microorganisms.</p>

## **b. Post-Operative Care**

### **Definition**

Post operative nursing care is the care given to patient from time of completion of the time patient is discharged from hospital setting (which includes immediate and later post operative care).

### **Purpose:**

- To help patient to return to normal functioning condition
- To provide comfort and maintain safety of patient. To detect and manage postoperative complications.
- To plan care for patient following discharge.

### **Articles Required:**

- Sphygmomanometer Stethoscope
- Thermometer tray
- Mouth care tray
- Injection tray with needles and syringes
- IV fluids
- Oxygen inhalation articles
- Suction

- Sterile dressing set
- Emergency tray
- Hot water bag
- Extra blanket
- Kidney tray
- Urinal
- Bed pan

**Procedure:**

**Immediate Post Operative:**

From the time the operation is completed to the time when general condition of patient is stabilized.

1. Preparation of bed and unit: Keep surgical bed and unit ready to receive patient after surgery. Arrange in such a way that there is enough space on side of bed for stretcher. When patient arrives, help shift patient from stretcher to post operative bed.
2. Position: Place patient in supine position with no pillow under head, head turned to onside to prevent tongue falling back into throat and aspiration of mucus or vomiting. The patient may have plastic airway.
3. Attach any equipment that may be necessary such as oxygen,suction, intravenous infusion or urinary catheter drainage and labeled of blood pressure.
4. Collection of information: Observe patients colour, Pulse ,respiration
5. Side by side review the following:
  - a. Operation performed
  - b. Anaesthesia given
  - c. Any problemes during surgery or severe hemorrhage patient had in Operation theater that has bearing on postoperative care.
  - d. Infusions or transfusion given in the operation theatre
  - e. Any special symptoms or complications to be observed
  - f. Doctors order to be carried out immediately.
  - g. Any information to be shared with family.
6. Suction if necessary.
7. Carry out any immediate orders with regard to medication or as specified.
8. Observe-skin colour, vital signs (pulse, respiration, BP), level of consciousne general condition, every 15 minutes until stable, monitoring vital sign every 30 for 1 hour, every hour until the patient general condition normalizes, urine d wound site for drainage/bleeding, comfort level (restlessness/discomfort), Che tubes and drain for patency and proper functioning.
9. Check intravenous infusion rate frequently. Plan IV fluids for 24 hours according t order, adjust the drop/min. and check for flow. Administer IV fluids and electrolytes as orderd.



10. Maintain accurate intake and output record.
11. Administer post operative medication as ordered.
12. Give mouth care, every 4 hours.
13. If patient is on nasogastric tube, aspirate gastric contents every 15 minutes as necessary.
14. Observe patient for voiding.
15. Maintain calm and quiet environment. Maintain safety including side rails on the patient completely come out from anaesthesia.
16. Interpret data recorded continuously and report to doctor for any complication such as shock, hemorrhage and hypoxia due to respiratory obstruction.
17. Raise foot end of bed using bed wooden blocks, if shock is anticipated.

**Late post operative care:**

1. Provide later post operative care by continuing positioning according to patient's comfort.
2. Maintain IV fluids as per order.
3. Ambulating patient on same day or after 24 hours depending on type of surgery.
4. Dressing wound after wound inspection by doctor.
5. Providing post operative exercise including steam inhalation.
6. Providing health education on relevant topics each day.
7. Administering medications as per written order.
8. Assist for suture removal, drainage etc.
9. Documentation of care given.

## **10. GASTRIC DECOMPRESSION/ NASOGASTRIC ASPIRATION**

**Definition**

A method of removal of fluid, gas and other contents from the stomach and intestines through a gastrointestinal tube.

**Purpose**

- To remove fluid/gas in abdominal distention (paralytic ileus or intestinal obstruction).
- To prepare patient for surgery.
- To remove irritants from the gastrointestinal tract.
- To manage bleeding from esophageal varices.
- To aid wound healing in gastrointestinal surgeries.

**Equipment**

A tray containing:

- Gastrointestinal tube
- 20ml syringe (glass/plastic)
- Gauze pieces
- Water in bowl
- Mackintosh
- Towel

- Drainage collecting bottle/bag

**Procedure:**

<b>Action</b>	<b>Rationale</b>
1. Obtain doctor's instruction.	Helps to be on safe site.
2. Explain the procedure and its purpose to the client.	Providing information fosters his/her cooperation
3. Assemble equipment to the bedside.	Organization facilitates accurate skill performance.
4. Maintain privacy.	
5. Perform hand hygiene and put on gloves if available	To prevent the spread of infection.
6. Take a gauze piece with left hand and keep under the tube end.	To prevent contamination.
7. Take syringe with right hand and keep under the tube end.	
8. Aspirate contents into collecting device after reassuring the correct placement of the tube. Repeat aspiration until contents are completely removed or when negative pressure is felt.	Helps in emptying the gastrointestinal content.
9. Place the soiled gauze in kidney basin.	To prevent contamination of other objects To prevent the increase of organisms.
10. Rinse the used syringe.	To prevent the increase of organisms.
11. Make the patient comfortable.	Positioning and covering provide warmth and promote comfort.
12. Remove and discard gloves.	Perform hand hygiene . To prevent contamination of other objects, including the label.
13. Remove aspiration tray. 14. Wash, dry and replace articles	
15. Perform hand hygiene.	To prevent the spread of infection.
16. Document the procedure in the designated place and mark it off on the Cardex. 17. Record date and time of aspiration, amount, color, order and constituents of drainage, patient's condition.	To avoid duplication.  Documentation provides coordination of care.

## **11. TUBE FEEDING**

### **a. Naso- gastric Tube Feeding**

**Definition:**

A naso-gastric tube feeding is a means of providing liquid nourishment through a tube into the intestinal tract, when the client is unable to take food or any nutrients orally

**Purpose:**

- To provide adequate nutrition
- To give large amounts of fluids for therapeutic purpose
- To provide an alternative manner to some specific clients who have potential or acquired swallowing difficulties

**Equipment:**

- Disposable gloves (1)
- Feeding solution as prescribed
- Feeding bag with tubing (1)
- Water in jug
- Large catheter tip syringe (50 ml) (1)
- Measuring cup (1)
- Clamp if available (1)
- Paper towel as required
- Dr.'s prescription
- Stethoscope (1)

**Procedure**

1. Assemble all equipment and supplies after checking the Dr.'s prescription for tube feeding
2. Prepare formula:
  - a. Canned liquid type: Shake the can thoroughly. Check expiration date
  - b. Powder type: Mix according to the instructions on the package, prepare enough for 24 hours only and refrigerate unused formula. Label and date the container. Allow formula to reach room temperature before using.
  - c. liquid type prepared by hospital or family at a time: Make formula at a time and allow formula to reach room temperature before using.
3. Explain the procedure to the client
4. Perform hand hygiene and put on disposable gloves if available
5. Position the client with the head of the bed elevated at least 30 degree angle to 45 degree angle
6. Determine placement of feeding tube by:

Aspiration of stomach secretions

- Attach the syringe to the end of the feeding tube
- Gently pull back on the plunger

- Measure amount of residual fluid
- Return residual fluid to the stomach via tube and proceed to feed.

❖Nursing Alert❖

If the amount of the residual exceeds hospital protocol or Dr.'s order, refer to these order.

- Injecting 10- 20 mL of air into the tube:
- Attach syringe filled with air to the tube
- Inject air while listening with the stethoscope over the left upper quadrant

## **b. Gastrostomy/Jejunostomy Feeding**

### **Definition:**

Fluid/food administered through jejunostomy which is an opening stomach/jejunum.

### **Purpose:**

- To administer fluid/food to maintain nutrition.
- To prevent regurgitation/aspiration.

### **Equipment:**

- Towel
- Syringe
- Feeds
- Adhesives
- Scissors
- IV stand

### **Procedure:**

1. Explain the procedure to the patient.
2. Wash hands.
3. Connect milk drip set /IV set to a bottle containing feed.
4. Fix adhesive around cork in feeding bottle. Expel the air in IV tubing or adjust cork in milk drip set.
5. Check patency of gastrostomy/jejunostomy tube.
6. Connect IV/milk drip set to gastrostomy/jejunostomy tube.
7. Adjust drops per minute and ensure smooth flow.
8. Replace equipment.
9. Record in intake output chart, time, date, amount, feed.

10. Wash hands.

## 12. COLOSTOMY CARE

### **Definition:**

Maintenance of hygiene by regular emptying colostomy bag and cleaning colostomy site.

### **Purpose:**

- To prevent leakage
- To prevent excoriation of skin and stoma
- To observe stoma and surrounding skin.
- To teach patient and relatives about care of colostomy and collection bag

### **Equipment's required:**

- Clean tray containing:
- Rubber sheet
- Long sheet
- Towel
- Gloves (one pair)
- Cotton swabs and gauze pieces
- Wash cloth
- Water in a basin
- Mild Soap in a dish
- Disposable colostomy bag with clamp
- Stoma measuring guide
- Skin barrier
- Bedpan with cover

### **Procedure:**

1. Collect articles at bed side.
2. Explain procedure to patient.
3. Maintain privacy.
4. Position patient in semi fowler/fowler position and cover with top sheet.
5. Arrange rubber sheet and towel to protect bedding and gown.
6. Wash hands and put on clean gloves.
7. Change colostomy collection bag as follows.
  - a. If bag is full, remove, clamp and empty contents into bed pan.
  - b. Gently remove bag, remove clamp and keep in Kidney basin.
  - c. Place gauze piece over stoma to absorb any drainage.

- d. Once the appliance has been removed, the peristomal skin should be cleaned gently using warm tap water and dried with gauze pad.
- e. Soap has a drying effect on skin and should not be used on a regular basis.
- f. Patient can take bath with or without pouch. Water will not enter the stoma.
- g. Avoid any soaps with oils, perfumes, and deodorants. These can cause skin irritation or even keep your skin barrier from sticking to your skin properly.
- h. Optionally, adhesive remover wipes which can better remove adhesive residue that may have been left behind by your ostomy appliance.
- i. Rinse well to remove all soap as it can hinder adherence of bag.
- j. Pat dry thoroughly with a towel.
- k. Remove paper backing of skin barrier, center hole over stoma and press firmly. See that there are no wrinkles.
- l. Fold bottom end twice and clamp.

8. Empty colostomy collection bag as follows:

- a. Remove clamp.
- b. Unfold bottom end of bag.
- c. Allow contents to drain through opening into bedpan/Kidney basin grad container directly if to be measured.
- d. Rinse bag with water instilled from bottom opening with syringe.
- d. Instill deodorant into bag,
- e. clean bottom of bag with cotton or gauze pieces.
- g. Fold bottom end twice and clamp

9. Place patient in comfortable position.

10. Ask patient to inform any discomfort at stoma site.

11. Remove, clean, dry and replace articles.

12. Wash hands.

13. Record time of procedure, type and size of bag, observation stoma and surrounding skin.

### **Emptying the pouch**

Pouch is emptied when it is one-third or one half full.

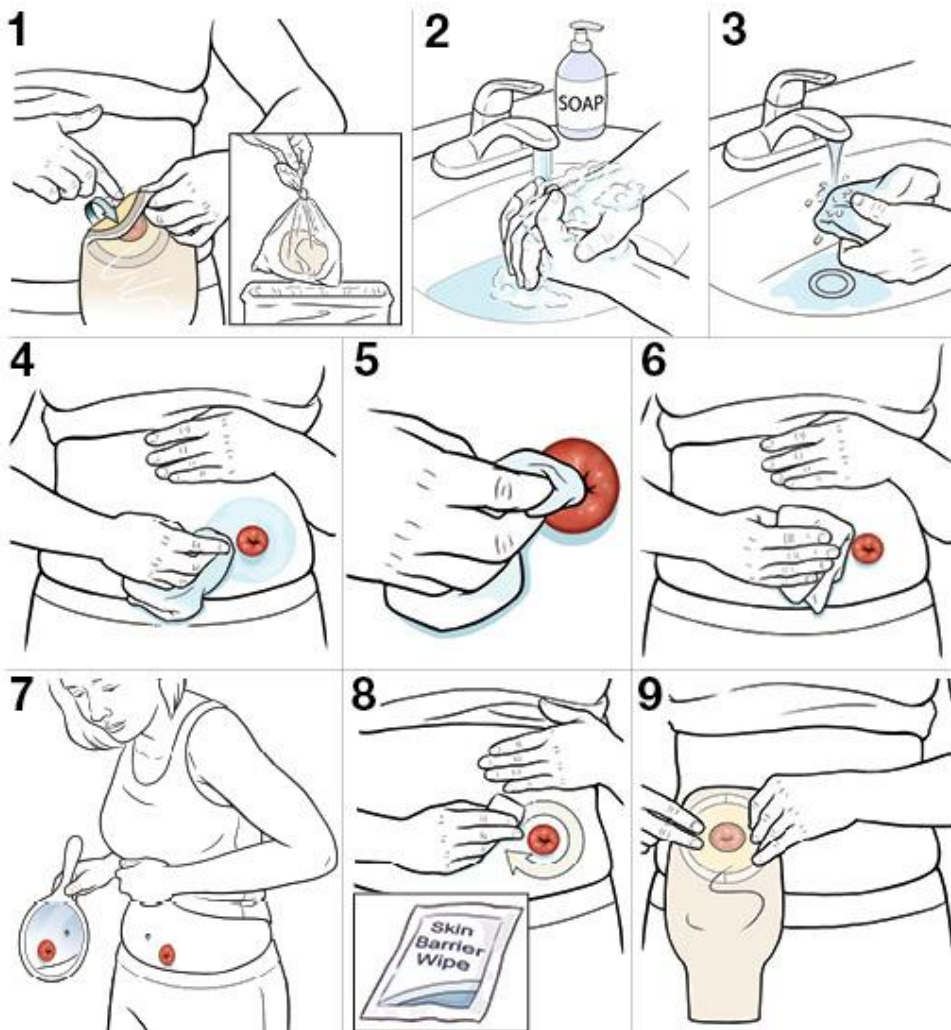
To remove it,

- Patient assumes comfortable sitting or standing position.
- Skin is gently pressed down while pulling the pouch up and down away from the stoma.
- Don't empty stoma shortly after the meal.

- Appropriate time is early in the morning.
- Pouch needs to be changed regularly – usually between one and three times a day depending on the amount of feces
- The appliance requires emptying when half full and is changed every 1–3 days.

### Applying the pouch

- Requires practice
- Firstly, gently remove the old pouch by pushing down the skin.
- Stoma is measured to determine the correct size of the pouch. The pouch opening should be  $\frac{1}{8}$ <sup>th</sup> inch larger than the stoma (3-4 millimeters).
- The size of stoma can be ascertained by type and consistency of the output.



### 13. BLADDER IRRIGATION

**Definition:**

A process of washing the urinary bladder with a continuous stream of solution through a 3-way Foley catheter.

**Purpose:**

- To prevent urinary tract obstruction.
- To remove blood clots.
- To stop bleeding inside the bladder.
- To treat an irritated, inflamed or infected bladder lining.

**Equipment Required:**

- Catheterization set
- Sterile lubricant jelly
- IV stand
- Urobag
- 10 ml sterile syringe
- Irrigation syringe
- Adhesive tape
- 3-way foley catheter
- continuous incigation set (IV set) with Y-type tubing
- irrigating solution as ordered by the doctor (e.g. normal saline, glycing, or distilled water)
- Bottles for output collection
- Spirit swab or betadine
- Gloves

**Procedure:**

1. Explain the procedure to the patient
2. Obtain the patient's written consent for the procedure.
3. Maintain privacy for the patient.
4. Bring the required articles to the patient's bedside.
5. Thoroughly wash hands with soap and water.
6. Place the patient in a lithotomy position.
7. Fix the connection of the IV set and prepare the irrigation solution
8. Open the catheterization set and set up the sterile tray with the necessary articles
9. Put on sterile gloves.
10. Check the catheter's balloon for intactness by filling the syringe with distilled water and inflating and then deflating the balloon.
11. Clean the area and insert the catheter into the urinary meatus



12. Instill the distilled water into the catheter to inflate the balloon
13. If the patient complains of discomfort, immediately deflate the balloon and advance catheter further before again inflating.
14. Tap the catheter to the patient's thigh. Connect the Y-tubing to the 2 containers irrigating solution.
15. Flush the tubing to remove the air. 17. Hang the irrigating solution on the IV stand.
16. Connect the outflow lumen of the catheter to the tubing leading to the urobag
17. Wipe the opening to the inflow lumen of the catheter with a betadine or spirit swab
18. Connect the distal end of the IV tubing into the inflow lumen of the catheter.
19. Open the clamps and set the drip rate as ordered by the doctor.
20. Empty the urobag when it is full.
21. Maintain input and output charting for the length of time the patient has a catheter,
  - a. Total calculation of output in ml (TO)
  - b. Total irrigation input in ml (TI)
  - c. Urinary output = Total output- Total irrigation input
22. Continuously check the irrigation system for any blockage.
23. Watch the patient's urine for the presence of blood (haematuria) and inform the doctor.
24. Record and report the amount, colour, consistency, and odour of the urine.
25. Decontaminate the used articles and clean them properly
26. Replace the articles to their proper places.
27. Wash hands

### **Nursing Alert**

- a) When the urine is bright red, in spite of continuous irrigation, inform to the doctor.
- b) The total fluid intake should balance with the total fluid output.

## **14. CHEST TUBE DRAINAGE**

### **Definition:**

The insertion of drainage tube into the chest cavity to drain fluid, air, pus or blood from pleural cavity by applying negative pressure.

### **Purpose:**

- To drain air, blood, pus or fluid.
- To allow for proper expansion of the lungs.

**Equipment:**

- Sterile gloves
- Mackintosh
- Betadine solution
- Local anaesthetic agent
- 10cc Disposable syringe Normal saline solution
- Spirit gauze
- Suture set
- Chest tube drainage system.
- Suction machine
- 22 gauge 1 inch needle
- 25 gauge needle
- Sterile scalpel
- Sterile drainage tubing and connector
- Sterile forceps
- 2 artery forceps (for clamp)
- Adhesive tape
- Chest tube with trocar

**Procedure:****Insertion of a chest tube:**

1. Explain the procedure to the patient
2. obtain the patient's written consent for the procedure.
3. Prepare all the equipment for the chest tube insertion.
4. Start an IV line in the patient.
5. Check the patient's vital signs and assess their respiratory function,
6. Assist the doctor and support the patient during the insertion of the chest tube
7. After the insertion of the chest tube, a chest x -ray is done to confirm its proper placement.
8. Assess the patient's vital signs and lung sounds every 15 minutes for 1 hour and then every hour.
9. Record the date, time of insertion, insertion site, presence of draining presence of bubbling, and the condition of the patient.

**Care of a chest tube:**

1. Monitor the water-seal bottle/bag for air bubbling.
2. Ensure the water-seal bottle is filled with 200 to 300 ml of distilled water.
3. Record and report the colour of the drainage (if present).
4. Milk the tubing 3 times a day by squeezing the tubing between the fingers.
5. The drainage collection bottle should be emptied when the bottle is 2/3 full.
6. Frequently monitor the patient's vital signs and respiratory condition
7. Do not allow the tubing to be twisted or kinked
8. Frequently check for leaks in the tubing or bottles.

**Nursing Alert**

- a. Frequently assess the respiratory condition and vital signs of the patient, the colour and amount of drainage fluid, and the water level in the water-seal bottle.
- b. Keep 2 artery forcep for rubber clamps at the bedside in case the airtight system is disrupted.
- c. Tell the patient not to hold the bottle above their chest level.
- d. If chest tube is accidentally removed by any mean, immediately ask the patient to hold breathe, apply pressure on the site of insertion of chest tube by dressing pad and inform doctor immediately.

**15. ASSISTING IN CARDIOVERSION****Definition**

Cardioversion is a procedure used to return an abnormal heartbeat to a normal rhythm. This involves the direct delivery of electric voltage to the heart by means of paddles placed on chest or placed directly on the heart when the chest is opened during cardiac surgery.

**Purpose**

- To restore the patient's heart rhythm to normal sinus rhythm.
- To eliminate life threatening arrhythmias (e.g. VT, SVT, VF flutter and asystole).
- To assist the patient in appropriate cardiac rehabilitation.

**Equipment**

- Defibrillator machine
- Electrode paste
- Blood pressure instrument
- Suctioning equipment

- Emergency cart
- Cardiac medications
- ECG monitor
- Oxygen with connecting tube, face and nasal mask
- Ambu-bag

### **Procedure**

1. Obtain the consent from patient /relative .
2. Explain the procedure to the patient .
3. Keep the patient in comfortable position.
4. The IV line should be checked for patency and maintained throughout the procedure.
5. Obtain a 12 lead ECG (a 12 lead ECG is needed before and after cardioversion)
6. Give the patient 100% oxygen by inhalation.
7. Apply electrode paste to the D.C paddles and rub it into the skin at the 2 paddles sites.
8. Sedate the patient if they are conscious.
9. Turn OFF the oxygen to the patient . A spark from the paddles could start the oxygen in fire
10. Set the energy level to the lowest level of electrical energy that may convert to patient's rhythm to a normal sinus rhythm.
11. Be sure " ALL CLEAR". No one should touch the patient or the bed during cardioversion.
12. Initially 25- 100 joules is applied or as per the advice of cardiologist .
13. Quick check the rhythm on the ECG monitor during and after each electric shock.
14. Observe the patient closely after cardioversion and check their ECG rhythm frequently.
15. Keep the patient in a comfortable position as they awaken from sedation and give 100% oxygen by inhalation.
16. Report and record the procedure date, time, joules( energy) conduction of the patient and ECG rhythm.
17. Clean the paddle with a spirit swab.
18. Clean the defibrillator paddles and replace the defibrillator in the proper place.

### **Nursing Alert**

- a) The ECG rhythm should be checked before and after each shock and medication.
- b) Give the patient 100% oxygen by inhalation before and after cardioversion.

## 16. ELECTROCARDIOGRAM (ECG MONITORING/ OBTAINING)

### Definition

Electrocardiogram is medical test that records the heart's electrical activity. The ECG device measure and averages the differences between the electrical potential of the electrode sites for each lead and graphs them over time, creating the standard ECG complex, called PQRST.

### Purpose

- To identify myocardial ischemia and infarction.
- To detect different types of arrhythmias.
- To assess the condition of a patient over a time period
- To evaluate the effectiveness of patient's treatment.
- To detect congenital heart disease (e.g. ASD, long QT syndromes)
- To detect pericardial effusion and pericarditis ( low voltage ECG)
- To detect acute corpulmonale or pulmonary embolism
- To detect an electrolyte imbalance.

### Equipment

- ECG machine
- Recording paper
- Disposable pre-gelled electrodes
- ECG adhesive gel
- Gauze pads

### Procedure

Action	Rationale
1. Verify the order for an ECG on the patient's medical record.	This ensures that the correct intervention is performed on the correct patient.
2. Gather all equipment and bring to bedside.	Having equipments available saves time and facilitates accomplishment of the procedure.
3. Perform hand hygiene and put on PPE, if indicated	Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.

4. Identify the patient .	Identifying the patient ensures the right patient ensures the right patient receives the intervention and helps prevent errors.
5. Close curtains around bed and close the door to the room, if possible. As you set up the machine to record a 12-lead ECG, explain the procedure to the patient. Tell the patient the test typically takes about 5 mins. Ask the patient about allergies to adhesive, as appropriate.	This ensures patient's privacy. Explanation relieves anxiety and facilitates cooperation. Possible allergies may exist related to adhesive on ECG leads.
6. Place the ECG machine close to the patient's bed , and plug the power cord into the wall outlet	Having equipment available saves time and facilitates accomplishment of the task.
7. If bed is adjustable, raise bed to comfortable working height, usually elbow height of the caregiver.	Having the bed at proper height prevents back and muscle strain of caregiver.
8. Have the patient lie supine in the center of the bed with the arms at the sides. Raise the head of the bed, if necessary, to promote comfort. Expose the patient's arms and legs, and drape appropriately. Encourage the patient to relax the arms and legs. If the bed is too narrow, place the patient's hands under the but tocks to prevent muscle tension. Also use this technique if the patient is shivering or trembling . Make sure the feet do not touch the bed's footboard.	This helps to increase patient comfort and will produce a better tracing. Having the arms and legs relaxed minimizes muscles trembling, which can cause electrical interference.
9. Select flat, fleshy areas on which to place the electrodes. Avoid muscular and bony areas. If the patient has an	Tissue conducts the current more effectively than bone, producing a better tracing.

amputated limb, choose a site on the stump.	
10. If an area is excessively hairy, clip the hair. Do not shave hair. Clean excess oil or other substances from the skin with soap and water and dry it completely.	Shaving causes micro abrasions on the chest skin. Oils and excess hair interfere with electrode contact and function. Alcohol, benzoin, and antiperspirant are not recommended to prepare the skin.
11. Apply the limb lead electrodes. The tip of each lead wire is lettered and color-coded for easy identification. The white (or RA) lead goes to the right arm; the green (or RL) lead to the right leg; the red (or LL) lead to the left leg; the black (or LA) lead to the left arm. Peel the contact paper off the self-sticking disposable electrode and apply directly to the prepared site, as recommended by the manufacturer. Position disposable electrodes on the legs with the lead connection pointing superiorly.	Having the lead connection pointing superiorly guarantees the best connection to the lead wire.
12. Connect the limb lead wires to electrodes. Make sure the metal parts of the electrodes are clean and bright.	Dirty or corroded electrodes prevent good electrical connection.
13. Expose the patient's chest. Apply the precordial lead electrodes. The tip of each lead wire is lettered and color-coded for easy identification. The brown (or V <sub>1</sub> to V <sub>6</sub> ) leads are applied to the chest. Peel the contact paper off the self-sticking disposable electrode and apply directly to the prepared site, as recommended by the manufacturer.	Proper lead placement is necessary for accurate test results.

<p>Position chest electrodes as follows</p> <p>V<sub>1</sub>: Fourth intercostal space at right sternal border</p> <p>V<sub>2</sub>: Fourth intercostal space at left sternal border</p> <p>V<sub>3</sub>: Halfway between V<sub>2</sub> and V<sub>1</sub></p> <p>V<sub>4</sub>: Fifth intercostal space at the left midclavicular line</p> <p>V<sub>5</sub>: Fifth intercostal space at anterior axillary line (halfway between V<sub>4</sub> and V<sub>6</sub>)</p> <p>V<sub>6</sub>: Fifth intercostal space at midaxillary line, level with V<sub>4</sub>.</p>	
<p>14. Connect the precordial lead wires to the electrodes. Make sure the metal parts of the electrodes are clean and bright.</p>	<p>Dirty or corroded electrodes prevent a good electrical connection.</p>
<p>15. After the application of all the leads, make sure the paper-speed selector 25m/sec and that the machine is set to full voltage.</p>	<p>This machine will record a normal standardization mark-a square that is the height of 2 large squares or 10 small squares on the recording paper.</p>
<p>16. If necessary, enter the appropriate patient identification data into the machine.</p>	<p>This allows for proper identification of ECG strip.</p>
<p>17. Ask the patient to relax and breath normally.</p> <p>Instruct the patient to lie still and not to talk while you record the ECG.</p>	<p>Lying still and not talking produces a better tracing.</p>
<p>18. Press the AUTO button. Observe the tracing quality, The machine will record all 12 leads automatically,</p>	<p>Observation of tracing quality allows for adjustments to be made, if necessary.</p>



<p>recording three consecutive leads simultaneously. Some machines have a display screen so you can preview waveforms before the machine records them on paper. Adjust waveform, if necessary. If any part of the waveform extends beyond the paper when you record the ECG, adjust the normal standardization to half standardization and repeat. Note this adjustment on the ECG strip, because this will need to be considered in interpreting the results.</p>	<p>Notation of adjustments ensures accurate interpretation of results.</p>
<p>19. When the machine finishes recording the 12-lead ECG, remove the electrodes and clean the patient's skin, if necessary, with adhesive remover for sticky residue.</p>	<p>Removal and cleaning promotes patient comfort.</p>
<p>20. After disconnecting the lead wires from the electrodes, dispose of the electrodes. Return the patient to a comfortable position. Lower bed height and adjust head of bed to a comfortable position.</p>	<p>Proper disposal deters the spreads of microorganism. Promotes patient comfort and safety.</p>
<p>21. Clean ECG machine, per facility policy. If not done electronically from data entered into machine, label the ECG with the patient's name, date of birth, location. date and time of recording, and other relevant information, such as symptoms that occurred during the recording .</p>	<p>Cleaning equipment between patient uses decreases the risk for transmission of microorganisms. Accurate labeling ensures the ECG is recorded for the correct patient.</p>
<p>22. Removal additional PPE, if used. Perform hand hygiene.</p>	<p>Helps to prevent transmission of microorganisms.</p>

## 17. ASSISTING IN ECHOCARDOGRAPHY

### Definition

Echocardiography is a technique which uses the principles of ultrasound to examine the heart. It is an important diagnostic tool for detecting pericardial effusion, valve abnormalities, and enlargement of the structures within the heart.

### Purpose

- To assist with the diagnosis of congenital abnormalities or heart disease.
- To evaluate the condition of heart after treatment.

### Equipment's required

- Echocardiogram machine
- Recording paper
- Echocardiography cream
- Tissue paper

### Procedure

Action	Rationale
1. Verify the order for an Echocardiography on the patient's medical record.	This ensures that the correct intervention is performed on the correct patient.
2. Gather all equipment and bring to bedside.	Having equipment available saves time and facilitates accomplishment of the procedure.
3. Perform hand hygiene and put on PPE, if indicated	Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.
4. Identify the patient.	Identifying the patient ensures the right patient ensures the right patient receives the intervention and helps prevent errors.

5. Close curtains around bed and close the door to the room, if possible.	This ensures patient's privacy.
6. Explain the procedure to the patient .	Explanation relieves anxiety and facilitates cooperation.
7. Transfer the patient to the Echocardiography room.	This ensures patient's privacy
8. Place the patient in a supine position.	This helps to increase patient comfort and will produce a better tracing.
9. Place echocardiography cream on the patient's chest area.	This cream helps to enhance the image quality.
10. Assist the doctor as necessary.	This ensures patient's comfort and save times.
11. After the test, clean the echocardiography cream off the patient with a tissue paper.	Removal and cleaning promotes patient comfort.
12. Attach the printed film(photos) to the patient's report.	This reduces the chances of misplacing the film.
13. Record the findings in the register book clearly.	This helps to maintain clear record of the patient.
14. Assist the patient back to their bed.	This ensures patient's comfort
15. Clean all the equipment with soft clean paper.	Cleaning equipment between patient uses decreases the risk for transmission of microorganisms.
16. Removal additional PPE, if used. Perform hand hygiene	Helps to prevent transmission of microorganisms

## 18. ASSISTING IN HOLTER MONITORING

**Definition:** A Holter monitor is an ambulatory ECG monitoring device used to detect cardiac arrhythmias, abnormal changes in cardiac rate, and silent myocardial ischemia.

### Purpose

- Detects suspected rhythm disturbances
- Monitors myocardial function after myocardial infraction

- Evaluates high risk cardiac patients

**Equipment's required**

- Holter monitor with electrodes, wire, and belts
- Recording paper
- Battery
- Cassettes or diskettes
- Spirit swab
- Holter monitor analysis machine

**Procedure:**

1. Explain the procedure to the patient.
2. Explain the deposit needed for the Holter monitor.
3. Have the patient take a bath and shave the hair on their chest where the electrodes will be placed.
4. Clean the chest area where the electrodes will be applied with a spirit swab.
5. Apply the chest electrodes to the correct locations and connect the ECG wires. Turn on the monitor.
6. Instruct the patient to record any occurrences on a piece of paper during the time they wear the monitor (e.g. palpitations, chest pain, syncopal episodes, and dizziness).
7. Instruct the patient to wear the monitor for 24 hours.
8. After 24 hours, remove the Holter monitor from the patient.
9. Remove the cassettes from the Holter monitor and place them inside the holter analysis machine.
10. Obtain the analyzed record from the holter analysis machine.
11. Inform the doctor.
12. Give the report to the patient and their family.
13. Clean the holter machine thoroughly and return it to the proper place.

**Nursing Alert**

- a) Prevent the Holter monitor from getting wet. Therefore, advise the patient not to take bath or a shower while wearing the Holter monitor.

## 19. TREAD MILL TEST (STRESS ECG TEST)

### Definition

Exercise testing is an evaluation of stress effects on the heart function and blood circulation reveals whether the heart receives a sufficient amount of oxygen when its work load is increased (e.g. during physical activity).

### Purpose

- To evaluate non -specific chest pain
- To evaluate the prognosis of patient with coronary disease
- To evaluate the success of revascularization
- To evaluate the success of therapeutic intervention
- To help diagnose exercise induced cardiac arrhythmia

### Equipment

- Tread mill machine
- Defibrillator
- Shaving set
- Emergency chart
- Spirit swab
- Scissors
- ECG machine
- Oxygen with nasal cannula and face mask
- Blood pressure apparatus
- Chest electrodes
- Adhesive tape

### Procedure

1. Explain the procedure to the patient
2. Obtain written consent from the patient and relatives
3. The patient should not have any cardio active drugs for 12 hours before the test
4. Advise the patient to avoid strenuous physical work in the day before the test
5. Instruct the patient to avoid having food, alcohol, or tobacco for 2 hours before the test
6. The patient may have light breakfast in the morning the exercise test is scheduled after 10 am
7. Have the patient bath and shave if necessary

8. Have the patient wear loose clothes and sport shoes
9. Only family member is requested to attend the procedure
10. The patient chart including the 12 lead ECG, echocardiogram, and referral sheet should be sent with the patient to the test
11. Transfer the patient to the TMT
12. Record the patient name, age, sex, height, weight, vital signs and regular medications
13. Clean the patient chest thoroughly with spirit gauze
14. Apply the chest electrode, connect the ECG leads, and turn On the ECG monitor
15. The patient begins the test by walking on the treadmill. Slowly their speed and incline is increased in order to increase the stress in their heart
16. The patient and the ECG machine should be closely watched
17. If the patient experiences any problem during the exercise, stop exercise immediately
18. Treat and manage any problem that arise
19. Take the patient vital sign throughout the exercise test
20. After the test remove the chest electrode and clean the area
21. Record and report the findings of the test
22. Instruct the patient to follow up the doctor
23. Clean all of the equipment and return it to the proper place
24. Wash hand

### **Nursing alert**

- Carefully monitor the patient appearance, ECG rhythm, and vital signs before, during and after the procedure.

## **20. ARTERIAL BLOOD GAS SAMPLE COLLECTION**

### **Definition**

The evaluation of gaseous exchange in the lungs by measuring the partial pressure of oxygen (PaO<sub>2</sub>), the partial pressure of carbon dioxide (PacO<sub>2</sub>), and pH level of the arterial blood.

### **Purpose**

- To evaluate the efficiency of pulmonary gas exchange.
- To assess the ventilation functioning of the lungs.
- To monitor respiratory therapy.
- To determine the acid/base level of the blood.

**Articles Required:**

- 2cc disposable syringe with a 22- or 23-gauge needle.
- Spirit swab or betadine
- Syringe with heparin
- Ice pack

**Procedure:**

1. Explain the procedure to the patient.
2. Perform Allen's test.
3. Wash hands with soap and water and put on gloves.
4. Flush the syringe with heparin.
5. Assess the patient's condition during the procedure. Puncture the artery with the needle. The arterial blood pressure will push up plunger as blood fills the syringe. 1 ml of arterial blood is required for the test.
6. After the blood sample is obtained, carefully recap the needle using a one-ha technique. Press on the puncture site firmly for 5-10 minutes.
7. Send the blood sample to the lab or ICU lab and label it as an arterial sample along the date, time, and the patient's name.

**Nursing Alert:**

- Do not take an arterial blood sample during or immediately after physiotherapy.

## 21. ARTERIAL BLOOD PRESSURE MONITORING

**Definition**

A method of direct, continuous monitoring of the systemic arterial pressure by inserting catheter into a peripheral artery in the leg or arm. The catheter is connected with a transducer which converts the arterial blood pressure into the electrical signal.

**Purpose**

- Continuous measurement of the arterial blood pressure

**Equipment**

- IV catheter
- Bedside ECG monitoring with transducer
- Pressurize bag

- Heparin
- 3- way stop clock
- IV stand
- Normal saline
- Extension tubing
- 2ml, 3ml, 5ml, and 10ml syringes
- Leveling scale
- IV set

**Procedural safety checklist insertion of arterial line**

- a. Before any procedure, review checklist together with the other members of the procedural team.
  - Are there any contraindications or special concerns that should be considered before starting procedure (e.g., prolonged INR/PTT or bleeding risk, abnormal vascular anatomy, prior thrombosis or increased morbidity should a pneumothorax occur)
  - Does the patient have allergies or contraindication to prep solutions, catheter materials or tapes?
- b. Standard central line catheters are impregnated with chlorhexidine
- c. Procedure is performed by the doctors and assisted by nurses
- d. Obtain consent (informal or formal) or notify family.

**Equipment Considerations**

- Ensure correct catheter size and length before starting (e.g., 15-16 cm for adult IJ/ SC catheter)
- Document size, type and model number in case of product recall or issues
- Central and Arterial Line Insertion trays with appropriate drapes/gowns
- Prefilled saline syringes FOR USE ON A STERILE FIELD are required to flush each lumen of before and after insertion
- Sterile ultrasound gel
- Obtain single use product for local anaesthetics
- Face mask with shield and hair net for everyone within 1 meter of sterile field
- Extra sterile gowns and gloves; required for everyone directly involved in the insertion procedure.
- Obtain sutures or sterile securement devices



### **Dressing Site Preparations**

- Hair clippers (no razors) for hair removal (if required) prior to prepping skin
- Large 2% chlorhexidine with 70% alcohol swabs require minimum 3 minute dry time

### **Other Preparation Considerations**

- Hand hygiene before entering room, before donning sterile gown and gloves and after last patient contact/glove removal
- Ensure adequate analgesia and sedation is available
- Are extra personnel required for patient positioning?
- Discuss possible complications and review emergency management plans (e.g. air embolism or hemorrhage/hematoma).
- Review PPE and hand hygiene requirements

### **Confirm placement following insertion:**

- Following central line insertion, pressure monitoring waveform or blood gases need to be assessed to rule out arterial placement and is required immediately following insertion

### **Procedures**

1. Explain the procedure to the patient
2. Prepare the all equipment
3. Assist the doctor during the insertion of arterial line
4. Make sure that the transducer is fixed at the height of the heart of the patient
5. Check that the pressure bag filled with the normal saline mixed with heparin has a continual pressure of 300 mm Hg
6. To zero, turn the three way stop clock of the arterial line off to the patient. Connect the transducer line to the open airway in the 3 –way stop clock. Pressure the zero button on the monitor. Open the 3 way stop clock between the patient and the transducer and begin monitoring the blood pressure.
7. Flush the arterial line every four hour and every time after a blood sample is taken.
8. Return the equipment to the proper place

### **Nursing alert**

- a. Never give a medication through an arterial line
- b. Always check the pressure of the pressurized bag and maintain a pressure of 300 mm Hg

- c. After the arterial line removed always compress the site for atleast 10 minutes
- d. Do not take any arterial blood sample during or immediately after physiotherapy

## 22. TRACTION CARE

### Skin Traction

#### Definition

Traction is the application of a pulling force to a part of the body. It is used to reduce fractures, treat dislocations, correct or prevent deformities, improve or correct contractures, or decrease muscle spasms. It must be applied in the correct direction and magnitude to obtain the therapeutic effects desired.

#### Equipment

- Bed with traction frame and trapeze
- Weights
- Velcro straps or other straps
- Rope and pulleys
- Boot with footplate
- Elastic antiembolism stocking, as appropriate
- Clean gloves and/or other PPE, as indicated
- Skin cleansing supplies

#### Procedure

Actions	Rationale
1. Review the medical record and the nursing plan of care to determine the type of traction being used and care for the affected body part	To validates the correct patient and correct procedure.
2. Perform hand hygiene. Put on PPE, as indicated.	To prevent the spread of microorganisms. PPE is required based on transmission precautions.
3. Identify the patient. Explain the procedure to the patient, emphasizing the importance of maintaining	Patient identification validates the correct patient and correct procedure. Discussion and explanation help to reduce anxiety and

counterbalance, alignment, and position.	prepare the patient for what to expect.
4. Perform a pain assessment and assess for muscle spasm. Administer prescribed medications in sufficient time to allow for the full effect of the analgesic and/or muscle relaxant	Assessing pain and administering analgesics promote patient comfort.
5. Close curtains around bed and close the door to the room, if possible. Place the bed at an appropriate and comfortable working height.	Closing the door or curtains provides for privacy. Proper bed height prevents back and muscle strain

### Applying Skin Traction

Actions	Rationale
6. Ensure the traction apparatus is attached securely to the bed. Assess the traction setup.	Assessment of traction setup and weights promotes safety
7. Check that the ropes move freely through the pulleys. Check that all knots are tight and are positioned away from the pulleys. Pulleys should be free from the linens.	Checking ropes and pulleys ensures that weight is being applied correctly, promoting accurate counterbalance and function of the traction
8. Place the patient in a supine position with the foot of the bed elevated slightly. The patient's head should be near the head of the bed and in alignment.	Proper patient positioning maintains proper counterbalance and promotes safety.
9. Cleanse the affected area. Place the elastic stocking on the affected limb, as appropriate.	Skin care aids in preventing skin breakdown. Use of elastic antiembolism stocking prevents edema and neurovascular complications
10. Place the traction boot over the patient's leg. Be sure the patient's	The boot provides a means for attaching traction; proper application ensures proper

heel is in the heel of the boot. Secure the boot with the straps.	pull.
11. Attach the traction cord to the footplate of the boot. Pass the rope over the pulley fastened at the end of the bed. Attach the weight to the hook on the rope, usually 5 to 10 pounds for an adult. Gently let go of the weight. The weight should hang freely, not touching the bed or the floor.	Attachment of weight applies the pull for the traction. Gently releasing the weight prevents a quick pull on the extremity and possible injury and pain. Properly hanging weights and correct patient positioning ensure accurate counterbalance and function of the traction.
12. Check the patient's alignment with the traction	Proper alignment is necessary for proper counterbalance and ensures patient safety.
13. Check the boot for placement and alignment. Make sure the line of pull is parallel to the bed and not angled downward	Misalignment causes ineffective traction and may interfere with healing. A properly positioned boot prevents pressure on the heel.
14. Place the bed in the lowest position that still allows the weight to hang freely.	Proper bed positioning ensures effective application of traction without patient injury.
15. Remove PPE, if used. Perform hand hygiene	Removing PPE properly decreases the risk for infection transmission and contamination of other items. Hand hygiene prevents the spread of microorganisms.
<b>Caring for a Patient With Skin Traction</b>	
16. Perform a skin-traction assessment per facility policy. This assessment includes checking the traction equipment, examining the affected body part, maintaining proper body alignment, and performing skin and neurovascular assessments	Assessment provides information to determine proper application and alignment, thereby reducing the risk for injury. Misalignment causes ineffective traction and may interfere with healing.
17. Remove the straps every 4 hours per the physician's order or facility	Removing the straps provides assessment information for early detection and prompt

<p>policy. Check bony prominences for skin breakdown, abrasions, and pressure areas. Remove the boot, per physician's order or facility policy, every 8 hours. Put on gloves and wash, rinse, and thoroughly dry the skin.</p>	<p>intervention of potential complications should they arise. Washing the area enhances circulation to skin; thorough drying prevents skin breakdown. Using gloves prevents transfer of microorganisms.</p>
<p>18. Assess the extremity distal to the traction for edema, and assess peripheral pulses. Assess the temperature, color, and capillary refill and compare with the unaffected limb. Check for pain, inability to move body parts distal to the traction, pallor, and abnormal sensations. Assess for indicators of deep-vein thrombosis, including calf tenderness, and swelling</p>	<p>Doing so helps detect signs of abnormal neurovascular function and allows for prompt intervention. Assessing neurovascular status determines the circulation and oxygenation of tissues. Pressure within the traction boot may increase with edema.</p>
<p>19. Replace the traction and remove gloves and dispose of them appropriately.</p>	<p>Replacing traction is necessary to provide immobilization and facilitate healing. Proper disposal of gloves prevents the transmission of microorganisms.</p>
<p>20. Check the boot for placement and alignment. Make sure the line of pull is parallel to the bed and not angled downward.</p>	<p>Misalignment causes ineffective traction and may interfere with healing. A properly positioned boot prevents pressure on the heel.</p>
<p>21. Ensure the patient is positioned in the center of the bed, with the affected leg aligned with the trunk of the patient's body.</p>	<p>Misalignment interferes with the effectiveness of traction and may lead to complications.</p>
<p>22. Examine the weights and pulley system. Weights should hang freely, off the floor and bed. Knots should be</p>	<p>Checking the weights and pulley system ensures proper application and reduces the risk for patient injury from traction</p>

secure. Ropes should move freely through the pulleys. The pulleys should not be constrained by knots	application.
23. Perform range-of-motion exercises on all unaffected joint areas, unless contraindicated. Encourage the patient to cough and deep breathe every 2 hours	Range-of-motion exercises maintain joint function. Coughing and deep breathing help to reduce the risk for respiratory complications related to immobility.
24. Raise the side rails. Place the bed in the lowest position that still allows the weight to hang freely.	Raising the side rails promotes patient safety. Proper bed positioning ensures effective application of traction without patient injury
25. Remove PPE, if used. Perform hand hygiene.	Removing PPE properly decreases the risk for infection transmission and contamination of other items. Hand hygiene prevents the spread of microorganisms.

## **Skeletal Traction**

### **Definition**

Skeletal traction provides pull to a body part by attaching weight directly to the bone, using pins, screws, wires, or tongs. It is used to immobilize a body part for prolonged periods. This method of traction is used to treat fractures of the femur, tibia, and cervical spine.

### **Equipment**

- Sterile gloves
- Sterile applicators
- Cleansing agent for pin care, usually sterile normal saline or chlorhexidine, per physician order or facility policy
- Sterile container
- Antimicrobial ointment, if ordered
- Foam, nonstick, or gauze dressing, per medical order or facility policy
- PPE, as indicated

Actions	Rationale
1. Review the medical record and the nursing plan of care to determine the type of traction being used and the prescribed care.	Reviewing the medical record and plan of care validates the correct patient and correct procedure.
2. Perform hand hygiene. Put on PPE, as indicated	Hand hygiene and PPE prevent the spread of microorganisms. PPE is required based on transmission precautions.
3. Identify the patient. Explain the procedure to the patient, emphasizing the importance of maintaining counterbalance, alignment, and position	Patient identification validates the correct patient and correct procedure. Discussion and explanation help allay anxiety and prepare the patient for what to expect.
4. Perform a pain assessment and assess for muscle spasm. Administer prescribed medications in sufficient time to allow for the full effect of the analgesic and/or muscle relaxant.	Assessing for pain and administering analgesics promote patient comfort
5. Close curtains around bed and close the door to the room, if possible. Place the bed at an appropriate and comfortable working height.	Closing the door or curtains provides for privacy. Proper bed height prevents back and muscle strain.
6. Ensure the traction apparatus is attached securely to the bed. Assess the traction setup, including application of the ordered amount of weight. Be sure that the weights hang freely, not touching the bed or the floor	Proper traction application reduces the risk of injury by promoting accurate counterbalance and function of the traction.
7. Check that the ropes move freely through the pulleys. Check that all knots are tight and are positioned	Free ropes and pulleys ensure accurate counterbalance and function of the traction.

away from the pulleys. Pulleys should be free from the linens.	
8. Check the alignment of the patient's body, as prescribed.	Proper alignment maintains an effective line of pull and prevents injury
9. Perform a skin assessment. Pay attention to pressure points, including the ischial tuberosity, popliteal space, Achilles' tendon, sacrum, and heel.	Skin assessment provides early intervention for skin irritation, impaired tissue perfusion, and other complications.
10. Perform a neurovascular assessment. Assess the extremity distal to the traction for edema and peripheral pulses. Assess the temperature and color and compare with the unaffected limb. Check for pain, inability to move body parts distal to the traction, pallor, and abnormal sensations. Assess for indicators of deep-vein thrombosis, including calf tenderness, and swelling	Neurovascular assessment aids in early identification and allows for prompt intervention should compromised circulation and oxygenation of tissues develop
11. Assess the site at and around the pins for redness, edema, and odor. Assess for skin tenting, prolonged or purulent drainage, elevated body temperature, elevated pin site temperature, and bowing or bending of the pins.	Pin sites provide a possible entry for microorganisms. Skin inspection allows for early detection and prompt intervention should complications develop
12. Provide pin site care.  a. Using sterile technique, open the applicator package and pour the	Performing pin site care prevents crusting at the site that could lead to fluid buildup, infection, and osteomyelitis



<p>cleansing agent into the sterile container.</p> <p>b. Put on the sterile gloves.</p> <p>c. Place the applicators into the solution.</p> <p>d. Clean the pin site starting at the insertion area and working outward, away from the pin site</p> <p>e. Use each applicator once. Use a new applicator for each pin site.</p>	<p>a. Using sterile technique reduces the risk for transmission of microorganisms.</p> <p><b>b.</b> Gloves prevent contact with blood and/or body fluids</p> <p><b>c.</b> For aseptic environment</p> <p><b>d.</b> Cleaning from the center outward ensures movement from the least to most contaminated area</p> <p><b>e.</b> Using an applicator once reduces the risk of transmission of microorganisms.</p>
<p>13. Depending on physician order and facility policy, apply the antimicrobial ointment to pin sites and apply a dressing.</p>	<p>Antimicrobial ointment helps reduce the risk of infection. A dressing aids in protecting the pin sites from contamination and contains any drainage</p>
<p>14. Remove gloves and any other PPE, if used. Perform hand hygiene.</p>	<p>Removing PPE properly decreases the risk for infection transmission and contamination of other items. Hand hygiene prevents the spread of microorganisms.</p>
<p>15. Perform range-of-motion exercises on all joint areas, unless contraindicated. Encourage the patient to cough and deep breathe every 2 hours.</p>	<p>Range-of-motion exercises promote joint mobility. Coughing and deep breathing reduce the risk of respiratory complications related to immobility</p>

**Nursing alerts**

- Document the time, date, type of traction, and the amount of weight used.
- Include skin and pin site assessments, and pin site care.
- Document the patient’s response to the traction and the neurovascular status of the extremity

## 23. NURSING CARE OF PATIENT WITH MECHANICAL VENTILATION

### Definition

A mechanical ventilator is a machine that provides the patient require respiratory assistance.

### Purpose:

- To maintain adequate ventilation.
- To decrease the patient's respiratory effort.
- To improve pulmonary gas exchange.

### Articles Required:

- Intubation set
- Suction machine
- Ventilator machine.
- Pulse oximeter
- Bedside ECG monitor

### Procedure:

1. Explain the procedure to the patient.
2. Set the ventilator mode parameters as per the doctor's orders.
3. Check the functioning of the ventilator.
4. The doctor will intubate the patient.
5. Connect the patient to the ventilator.
6. The patient's oxygen saturation level should be checked continuously until it stabilizes in the normal range (94-99%).
7. Perform suctioning as needed.
8. Frequently assess respiratory status including frequent arterial blood gas analysis to monitor the effectiveness of the ventilator.
9. Document the patient's condition including vital signs, arterial blood gas values, and ventilator parameter settings

### Nursing Alert

- Carefully assess the patient's respiratory condition including their saturation level.
- Ensure the intubation set is ready in case of the need for emergency management

## 24. PACEMAKER IMPLANTATION

### Definition

A pacemaker is an electronic device that provides electrical stimuli to the heart muscle.

Pacemakers are usually used when a patient has a slower-than-normal impulse formation or a conduction disturbance that causes symptom

### Type of pacemaker

Temporary pacemaker

Permanent pacemaker

### A. Temporary pacemaker

This is an artificial device used to simulate the heart for short-term treatment. The pulse generator, containing the circuitry and batteries, is located outside the body and the pacemaker wire is located in the right ventricle.

### Purpose:

- To initiate and maintain the heart rate when the natural pacemaker of the heart is unable to do so
- To prevent circulatory failure.
- To slow rapid arrhythmias that do not respond to drugs or cardioversion

### Equipment:

- Temporary pacemaker set with wire and introducer
- Fluoroscope machine
- Blood pressure apparatus with stethoscope
- Emergency cart with drugs
- Suction machine
- Laparotomy set-operation sheet, towel Sterile drum with cotton pads
- Gown, mask, cap, gloves
- Scalpels of different sizes
- 1% or 2% xylocaine
- Spirit swab, betadine, betadine hand wash, cidex, virex
- Surgical drapes
- Pulse generator with square battery and battery checker
- ECG monitor
- Defibrillator machine
- Isoprenaline

- Oxygen with nasal cannula or face mask
- Lead apron
- Temporary pace pacemaker set, suture set
- Normal saline, 5% dextrose, hacemacceal, ringer's lactate
- Tape and scissors (adhesive tape and elastoplast)
- Syringes of different sizes
- The operation should be performed in the Cardiac Catheter Laboratory

**Procedure:**

1. Patient preparation:
  - Explain the procedure to the patient.
  - Obtain written consent from the patient & their relatives.
  - Clean and shave the area.
  - Start an IV line with 5% dextrose solution or normal saline solution.
2. Article preparation:
  - Prepare the isoprenaline drip.
  - Check the pulse generator machine wire and battery.
  - Prepare the emergency cart, the defibrillator, and the ECG monitor. Set up all equipment for the insertion of the pacemaker.
  - The nurse should be knowledgeable about the pacemaker machine including the power switch, indicator light for pacing and sensing, stimulus output dial, sensitivity dial, and the proper settings
3. Assist the doctor and the scrub nurse during the procedure.
4. Scrub hands thoroughly and put on sterile gloves aseptically.
5. Assist with the insertion of the catheter. The pacemaker wire should be inserted into the femoral, subclavian or internal jugular vein and passed into the right ventricular apex. The inserted catheter and the connection between the pulse generator units should be fixed properly and the parameters should be recorded and fixed.
6. The main unit (pacemaker leads) should be fixed securely.
7. After the pacemaker implant:
  - Assess the condition of the patient including their vital signs. In addition, monitor the patient for arrhythmias, and assess the pacemaker's spike and waves, pacing parameters, battery, and wire connection.
  - The patient should remain on bed rest for 12 hours after the procedure.

- A 12 lead ECG and chest x-ray should be done
- A sterile dressing change should be done after 48 hours.
- Explain to the patient that their mobility is limited.
- Cover the dial of the pacemaker to prevent accidental malfunction.

## **B. Permanent Pacemaker**

An artificial device used to stimulate the heart for long-term treatment. The pulse generator is permanently implanted in the body. It is most commonly used in patients with complete heart block.

### **Purpose:**

- Commonly used in patients with complete heart block caused by congenital degeneration.
- To initiate and maintain the heart rate when the natural pacemaker of the heart is unable to do so
- To prevent circulatory failure.
- To slow rapid arrhythmias that does not respond to drugs or cardio-version

### **Equipment**

- All articles from the temporary pacemaker section are required.
- Additional equipment required
- Permanent pacemaker (introducer wire, battery)
- Pacing system analyzer (PSA)
- Elastoplast
- Permanent pacemaker set
- Surgical drape

### **Procedure**

Under local anesthesia, a small incision is made just below the clavicle on the right or left side of the upper chest wall. The catheter is inserted into the right or left subclavian vein and advanced to the apex of the right ventricle, and secured in the vein by a ligature. The end of the catheter is joined to the battery-powered pulse generator. The pulse generator is placed into a pocket in the subcutaneous area in the left or right upper chest.

### **Caring for Patient with Pacemaker**

- After a temporary or a permanent pacemaker is inserted, the patient's heart rate and rhythm

are monitored by ECG.

- The pacemaker's settings are noted and compared with the ECG recordings to assess pacemaker function.
- Pacemaker malfunction is detected by examining the pacemaker spike and its relationship to the surrounding ECG complexes.
- In addition, cardiac output and hemodynamic stability are assessed to identify the patient's response to pacing and the adequacy of pacing.
- The incision site where the pulse generator was implanted (or the entry site for the pacing electrode, if the pacemaker is a temporary transvenous pacemaker) is observed for bleeding, hematoma formation, or infection, which may be evidenced by swelling, unusual tenderness, unusual drainage, and increased heat.
- The patient may complain of continuous throbbing or pain. These symptoms are reported to the physician.
- The patient with a temporary pacemaker is also assessed for electrical interference and the development of microshock.
- The nurse observes for potential sources of electrical hazards. All electrical equipment used in the vicinity of the patient should be grounded.
- Improperly grounded equipment can generate leakage of current capable of producing ventricular fibrillation.
- Exposed wires must be carefully covered with nonconductive material to prevent accidental ventricular fibrillation from stray currents.
- The nurse, working with a biomedical engineer or electrician, should make certain that the patient is in an electrically safe environment.
- Patients, especially those receiving a permanent pacemaker, should be assessed for anxiety.
- In addition, for those receiving permanent pacemakers, the level of knowledge and learning needs of the patient and the family and the history of adherence to the therapeutic regimen should be identified.

## **25. TRIAGE**

### **Definition**

Triage is a process which places the right patient in the right place at the right time to receive the right level of care”

## **Purpose**

- To set out priorities for the evacuations of the victims.
- To assess the victims who are in life-threatening situations and need immediate therapeutic interventions.
- To expedite the care of noncritical cases.
- To improve the traffic flow through the emergency departments.

## **Triage Categories**

### Class I (Emergent) Red

Victims with serious injuries that are life-threatening but have a high probability of survival if they received immediate care. They require immediate surgery or other life-saving intervention. Eg. Compromised airway, shock, hemorrhage

### Class II (Urgent)

Victims who are seriously injured and whose life is not immediately threatened; and can delay transport and treatment for 2 hours. Their condition is stable for the moment but requires monitoring and frequent re triage. Eg. Open fracture

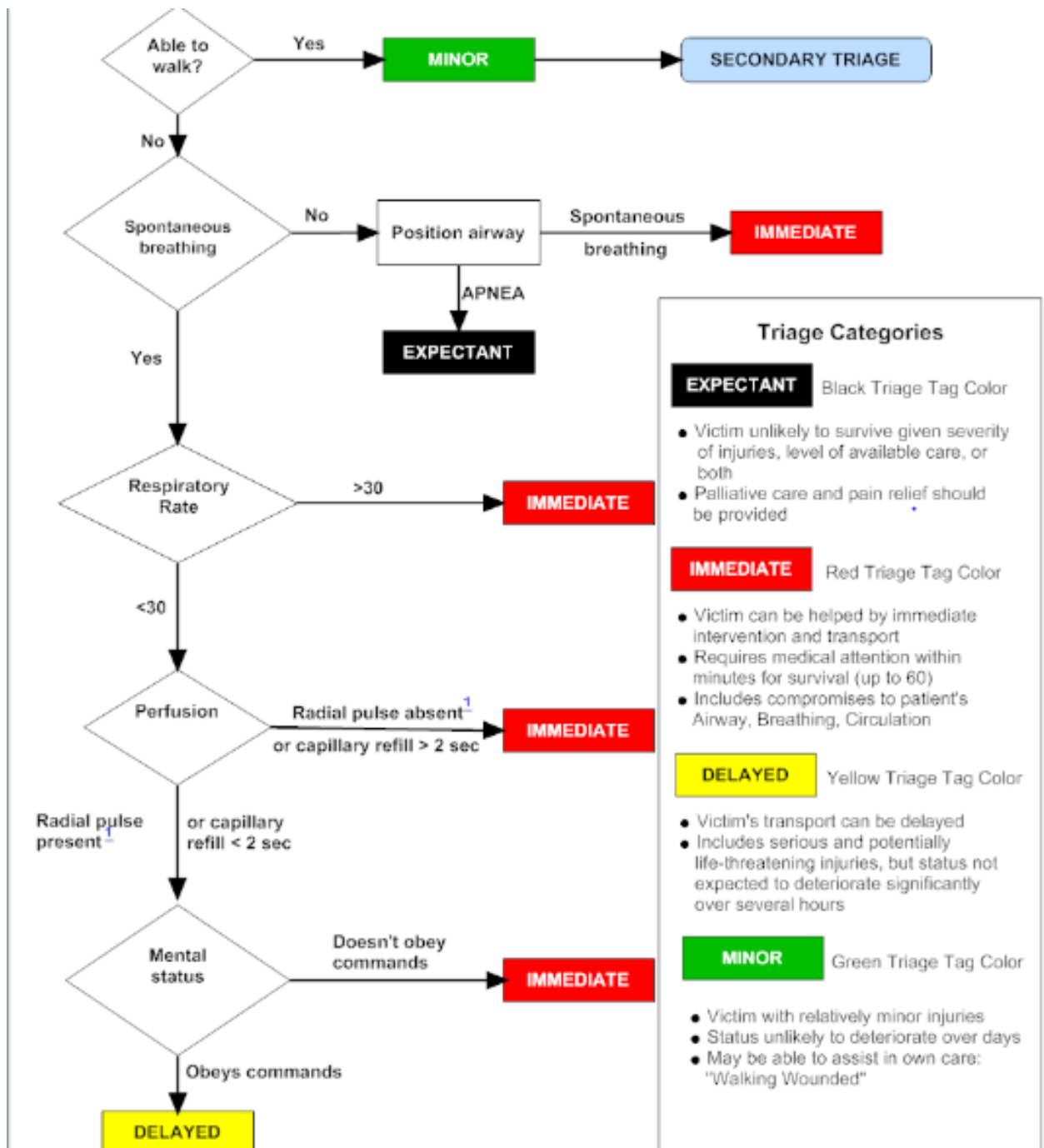
### Class III (Non-urgent) Green

“Walking Wounded”, patients with relatively minor injuries, condition unlikely to deteriorate over days, may be able to assist in own care.

### Class IV (Expectant) Black

They are so severely injured that they will die of their injuries, possibly in hours or days. They should be taken to a holding area and given painkillers as required to reduce suffering. Eg. Large body burns, severe trauma etc.

## START (Simple Triage and Rapid Treatment) Algorithm





## **PEDIATRIC NURSING**

S. N	Procedure	Page No
1.	Anthropometric measurement <ul style="list-style-type: none"><li>• Weight</li><li>• Height/ Length</li><li>• Head Circumference</li><li>• Chest Circumference</li><li>• Abdominal Girth</li><li>• Mid Upper Arm Circumference</li></ul>	193-197
2.	Vitals Signs Monitoring	197-203
3.	I/V Cannulation	203-204
4.	Drug Calculation	205
5.	Capillary puncture for GRBS	209-207
6.	Arterial Blood Gas Analysis	207-209
7.	Urinary Catheterization	210-212
8.	Suctioning	212-213
9.	Oxygen Inhalation	213-215
10.	NG Insertion and Feeding	215-217
11.	Care of child in incubator/ radiant warmer	217-220
12.	Phototherapy care	220-222
13.	GCS scoring	222-223
14.	Assisting in Lumbar puncture/ bone marrow aspiration	223-227
15.	Chest physiotherapy	227-229

## 1. ANTHROPOMETRIC EXAMINATION

### Introduction

- Anthropos - "man" and Metron "measurement"
- A branch of anthropology that involves the quantitative measurement of the human body.

### A. WEIGHT

- The measurement of weight is most reliable criteria of assessment of health and nutritional status of children.

### Purpose

- To evaluate whether the Child's weight is appropriate to his age.
- To calculate the nutritional requirement and medication doses requirement.
- To monitor the effect of therapy and drugs.

### Equipment

- Infant weighing scale

Weight can be recorded using:

1. Beam type weighing balance
2. Electronic weighing scales for infants and children
3. Salter spring machine (in field conditions)

- Draw sheet

### Procedure

- Note infant last weight recording
- Place draw sheet on the top of the scale in which the infant to be placed
- Balance the scale to Zero
- The weighing machine should be kept in firm surface with proper balance to prevent the infant from fall



- Undress the baby completely and place him on the scale.
- Record weight after it is stabilized.
- Take off the baby from the scale and help mother to dress baby.
- Compare the baby weight with previous weight.
- Difference of more than 100gm need to be clarified by rechecking the infants weight once again
- If the difference is still same then notify doctor
- Document the child' weight in file accurately.

## B. HEIGHT

Up to 2 years of age recumbent Length is measured with the help of an Infantometer .In older children Standing Height or Stature is recorded.

### Purpose

- To obtain baseline data at birth
- To monitor growth and development
- To assess nutritional status of child



### Equipment

- Infantometer
- Stadiometer

### Procedure

#### Length measurement

- Explain the procedure to the parents.
- Keep the infantometer on examination table.
- Place the infant supine on the infantometer.
- Ask assistant or mother to keep the vertex or top of the head snugly touching the fixed vertical plank.
- Ensure the leg are fully extended by pressing over the knife, and feet are kept vertical at 90°, the movable pedal flank of infantometer is snugly apposed against soles.
- Note the length from the scale.

## Height measurement

- Instruct the child to remove shoes/slipper.
- Make the child stand against the calibrated stand of stadiometer.
- Ensure that child is looking forward head, scapula, buttock, and heels of the child are touching the stand.
- Scroll down sliding board of the stand gradually till it touches the head of the child.
- Mark the reading shown by sliding board and record.

## C. HEAD CIRCUMFERENCE

Head circumference (HC) is a measurement of the head around its largest area, typically measured on infants and children until the age of five years as part of routine child care.

### Purpose

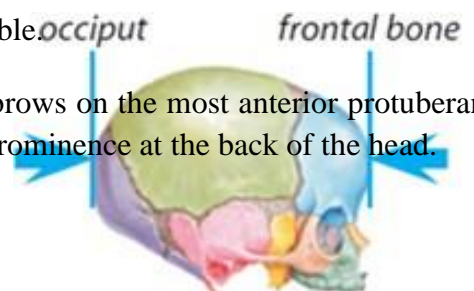
- To obtain information on health, development and nutritional status
- To detect any abnormal brain or skull growth

### Equipment

- Non stretching inch tape

### Procedure

- The child should be standing, seated or seated on parent/guardians lap depending on age and ability.
- Any hair ornaments or braiding should be removed if possible.
- Place the tape over the child's head above the ears and eyebrows on the most anterior protuberance of the forehead (frontal bone) and around the occipital prominence at the back of the head.



- Aim to measure the largest circumference possible.
- The tape should be pulled tight so that any hair is compressed.
- The measurement should be read and recorded to the nearest millimeter
- Repeat the measurement if there is a difference of  $>0.5\text{cm}$ .

#### **D. CHEST CIRCUMFERENCE**

Chest circumference is measured at the level of the nipple, at the end of expiration, to the nearest 0.1 cm using a non-elastic, flexible, fiber glass measuring tape.

##### **Purpose**

- To assess the normal growth of the child
- To detect malnutrition

##### **Equipment**

- Non stretching inch tape

##### **Procedure**

- Place the child in lying or sitting position
- Encircle the chest with tape over the nipple line
- Ensure the tape is placed accurately
- Take the measurement to the nearest mill
- Record the findings



#### **E. ABDOMINAL GIRTH**

- It is the process of measuring circumference of abdomen.

##### **Purpose**

- To detect the collection of gas/fluid in abdominal cavity.



## Equipment

- Non stretching inch tape

## Procedure

- Place the child in lying or sitting position
- Encircle the chest with tape over umbilical line
- Ensure the tape is placed accurately
- Take the measurement to the nearest millimetre at the end of expiration
- Record the findings

## F. MID UPPER ARM CIRCUMFERENCE

- It is the process of measuring circumference of arm **Purpose**
- To elicit malnutrition

## Equipment

- Non stretching inch tape
- MUAC measuring tape

## Procedure

- Place the child in lying or sitting position.
- Encircle the chest with tape over umbilical line.
- Ensure the tape is placed accurately.
- Take the measurement to the nearest millimeter.
- Record the findings.



## 2. VITAL SIGNS

**Definition:** The process of the checking and observing the baby's condition including their temperature, heart rate, respiratory rate and blood pressure.

### Purposes:

- It helps to provide the baseline information as well as the condition of the child.
- It gives a glimpse into the overall wellbeing.
- They signal early signs of infection, prevent a misdiagnosis, detect symptoms less medical problems and helps to make better choices.

**Equipment:** A clean tray containing

- Digital Thermometer
- Watch
- Paediatric BP cuff
- Stethoscope
- Hand scrub
- Spirit swab
- Kidney tray

**Components of vital signs:**

- Temperature
- Respiratory rate
- Heart rate (pulse rate)
- Blood pressure

### **A. Temperature:**

**Definition:** It is a process of checking the body temperature of the child and identifying the deviation (hypothermia, hyperthermia) from the normal body temperature.

**Paediatric normal body temperature range according to the age:**

Age	Fahrenheit	Celsius
0-1 year	99.4-99°F	37.5-37.7°C
3-5 years	98.6-99.0°F	37.0-37.2 °C
6-9 years	98.1-98.3 °F	36.7-36.8 °C
≥10 years	97.8 °F	36.6 °C

**Procedure:**

Care Action	Rational
1. Explain the procedure to the patient and care giver, in appropriate manner.	To relieve the anxiety of the patient and care giver.
2. Perform hand hygiene before the procedure.	To maintain the aseptic precautions.
3. Prepare all the required equipment.	Organization facilitates accurate skill performance.
4. Close the doors and / or use screen	Maintains client's privacy and minimizes embarrassment.
5. Clean the thermometer with spirit swab from the bulb to stem.	To limit the spread of the infection.
6. Place the bulb in the roof of axilla with arm pressed close to body.	To make accurate reading.
7. Leave in place for 3-5 minutes, or until electronic thermometer beeps.	To ensure an accurate readings.
8. Remove and the read the thermometer.	To document the findings.
9. Clean the thermometer with the spirit	To limit the spread of the infection.

swab from stem to bulb and return to thermometer.	
10. Document the findings and inform to senior staffs of doctor in case of abnormal findings.	To maintain the recording and reporting of the findings.
11. Replace the articles and perform hand washing.	Organization facilitates accurate skill performance.

### **B. Pulse (heart ) rate:**

**Definition:** Checking presence, rate, rhythm and volume of throbbing of artery.

#### **Purpose:**

- To determine number of heart beats occurring per minute (rate).
- To gather information about heart rhythm and pattern of beats.
- To evaluate strength of pulse.
- To assess heart's ability to deliver blood to distant areas of the blood viz. fingers and lower extremities.
- To assess response of heart to cardiac medications, activity, blood volume and gas exchange.
- To assess vascular status of limbs.

#### **Normal Range of heart rate:**

<b>Age</b>	<b>Range (beats per minute)</b>
Newborn	120-160b/min
6 months to 1 year	90-130 b/min
3 -5 years	80-120 b/min
5 -10 year	70-110b/min
10 to 14 years	60-100b/min

#### **Sites of pulse:**

- Radial pulse
- Branchial pulse
- Apical pulse
- Carotid pulse
- Temporal pulse



**Procedure:**

<b>Care Action</b>	<b>Rationale</b>
1. Wash hands.	<ul style="list-style-type: none"> <li>• Handwashing prevents the spread of infection</li> </ul>
2. Prepare all equipment's required on tray.	<ul style="list-style-type: none"> <li>• Organization facilitates accurate skill problems</li> </ul>
3. Check the client's identification	<ul style="list-style-type: none"> <li>• To confirm the necessity</li> </ul>
4. Explain the procedure and purpose to the client.	<ul style="list-style-type: none"> <li>• Providing information fosters cooperation and Understanding</li> </ul>
5. a) Place, 1st, 2 <sup>nd</sup> , 3 <sup>rd</sup> fingers along the client's radial artery, and press gently the radius, rest your thumb in opposition to fingers on the back of the wrist. b) Count and examine the pulse. c) In case of monitoring apical pulse, palpate the 5 <sup>th</sup> intercostal space on the left mid clavicular line. Place the diaphragm of the stethoscope over the apex of the heart and listen to the "lub dub" sound.	<ul style="list-style-type: none"> <li>• To provide easy access to pulse sites</li> </ul>
6. Count and examine the pulse a) Apply only enough pressure to radial pulse b) Using watch, count the pulse beats for a full minute. c) Examine the rhythm and the strength of the pulse.	<ul style="list-style-type: none"> <li>• The fingertips are sensitive and better able to feel the pulse. Do not use your thumb because it has a strong pulse of its own.</li> <li>• Moderate pressure facilitates palpation of the pulsations. Too much pressure obliterates the pulse, whereas the pulse is imperceptible with too little pressure</li> <li>• Counting a full minute permits a more accurate reading and allows assessment of pulse strength and rhythm.</li> <li>• Strength reflects volume of blood ejected against arterial wall with each heart contraction.</li> </ul>
7. Record the rate on the client's chart. Sign on the chart.	<ul style="list-style-type: none"> <li>• Documentation provides ongoing data collection</li> <li>• To maintain professional accountability</li> </ul>
8. Wash your hands.	<ul style="list-style-type: none"> <li>• Handwashing prevents the spread of infection</li> </ul>
9. Report to the senior staff if you find any Abnormalities.	<ul style="list-style-type: none"> <li>• To provide nursing care and medication properly and continuously</li> </ul>

### C. Respiration

**Definition:** Monitoring the involuntary process of inspiration and expiration in a patient.

**Purposes:**

- To determine number of respirations occurring per minute.
- To gather information about rhythm and depth.
- To assess response of patient to any related therapy/ medication.
- To identify the signs of the respiratory distress in children.

**Normal Respiratory Rate:**

Age	Range (breathe per minute)
0-2 months	< 60 b/min
2months to 1 year	<50 b/min
1 to 5 years	<40 b/min

**Procedure:**

Care Action	Rationale
1. Close the door and/or use screen.	• To maintain privacy
2. Make the client's position comfortable, preferably sitting or lying with the head of the elevated 45 to 60 degrees.	• To ensure clear view of chest wall and abdominal movements. If necessary, move the bed linen.
3. Prepare count respirations by keeping your fingertips on the client's pulse.	• A client who knows are counting respirations may not breathe naturally.
4. <b>Counting respiration:</b> a) Observe the rise and fall of the client's chest or abdomen (one inspiration and one expiration). b) Count respirations for one full minute. c) Examine the depth, rhythm, facial expression, cyanosis, and cough and movement accessory.	• One full cycle consists of an inspiration and an expiration. • Allow sufficient time to assess respirations, especially when the rate is with an irregular • Children normally have an irregular, more rapid rate. Adults with an irregular rate require more careful assessment including depth and rhythm of respirations.
5. Replace bed linens if necessary. Record the rate on the client's chart. Sign the chart	• Documentation provides ongoing data collection. • Giving signature maintains professional accountability
6. Perform hand hygiene	• To prevent the spread of infection
7. Report any irregular findings to the senior staff.	• To provide continuity of care

### D. Blood pressure

**Definition:** Monitoring blood pressure using palpation and/or sphygmomanometer.

**Purpose:**

- To obtain baseline data for diagnosis and treatment.
- To compare with subsequent changes that may occur during care of patient.
- To assist in evaluating status of patient's blood volume, cardiac output and vascular system.
- To evaluate patient's response to changes in physical condition as a result of treatment with fluids or medications.

**Procedure:** by palpation and aneroid manometer

<b>Care Action</b>	<b>Rationale</b>
1. Wash your hands.	Handwashing prevents the spread of infection
2. Gather all equipment's. Cleanse the stethoscope's earpieces and diaphragm with a spirit swabwipe.	Organization facilitates performance of the skill. Cleansing the stethoscope prevents spread of infection.
3. Check the client's identification. Explain the purpose and procedure to the client.	Providing information fosters the client's cooperation and understanding.
4. Have the client rest at least 5 minutes before measurement.	Allow the client to relax and helps to avoid falsely elevated readings.
5. Determine the previous baseline blood pressure, if available, from the client's record.	To avoid misreading of the client's blood pressure and find any changes his/her blood pressure from the usual.
6. Identify factors likely to interfere which accuracy of blood pressure measurement : exercise, coffee and smoking	Exercise and smoking can cause false elevations in blood pressure.
<b>7. Setting the position:</b> a) Assist the client to a comfortable position. Be sure room is warm, quiet and relaxing. b) Support the selected arm. Turn the palm upward. c) Remove any constrictive clothing.	The client's perceptions that the physical or interpersonal environment is stressful affect the blood pressure measurement. Ideally, the arm is at heart level for accurate measurement. Rotate the arm so the brachial pulse is easily accessible. Not constricted by clothing is allowed to access the brachial pulse easily and measure accurately. Do not use an arm where circulation is compromised in any way.

**Nursing Alert:**

- The systolic pressure of the child may be raised by crying, vigorous exercise, or anxiety so choose the time when the child is quiet and calm.

- The width of the cuff should cover approximately two thirds of the upper arm (or thigh) or be 20% greater than the diameter of the extremity without causing pressure in the axilla or impinging on the antecubital fossa.
- Do not measure the blood pressure in an extremity with damaged or altered blood flow or an IV.

### 3. INTRAVENOS CANNULATION

**Definition:** IV cannulation is required for the infusion of fluids or drugs. Any blood sampling necessary may be also be done at the time of insertion.

**Equipment:**

- A dressing set
- Alcohol spirit and povidone iodine solution
- IV cannula- 22 G or 24 G
- Tourniquet
- Syringe
- 0.9% saline solution
- Fixing tape or transparent occlusive dressing to fix cannula in site
- Local anesthesia cream if required

**Procedure:**

- Carefully identify a suitable vein. The dorsum of the hand or foot or antecubital fossa is ideal. Other suitable sites include the volar aspect of forearm, great saphenous vein at the medial malleolus or knee.
- Consider at least 45 mins of local anesthesia cream applied under an occlusive dressing over the intended vein before starting. Remove the cream before starting.
- Ensure good vein perfusion, e.g warm extremity before cannulation.
- If needed, ask an assistant to help with keeping the child's limb steady. This may require wrapping a young child in a towel or sheet.
- In older children, apply a tourniquet proximal to the vein. In infants, if attempting the hand dorsum, apply compression and immobilization by flexing the wrist, then grasping with the index and middle fingers over the dorsum, while thumb is placed over the child's fingers.
- Clean the site with alcohol-based solution.
- Insert the cannula at an angle of 10-15° to the skin with the bevel upright, just distal and along the line of the vein.
- When the stylet tip penetrates into the vein lumen blood will flash back (not always if the vein is small)
- Remove stylet, and collect any blood required from the cannula hub.
- Flush cannula with 0.9% saline to confirm IV placement (fluid should infuse without resistance) and to prevent clotting, then connect IV line.
- Secure cannula with appropriate adhesive tape or dressing leaving the skin over the cannula tip visible so that extravasation can be observed.

**Note:** This is a difficult procedure to master, particularly in the newborn. Do not be afraid to ask for senior help if unsuccessful after 2 or 3 attempts.



Figure 1: holding an infant's hand



Figure 2: shallow angle of insertion



Figure 3: passive blood collection for infants



Figure 4: aspirating blood for culture or gas

## 4. DRUG CALCULATION

### Drug calculation formula

$$\text{Volume to be given} = \frac{\text{dose ordered}}{\text{Dose available}} \times \text{volume of solution}$$

### IV fluid (drip rate calculation):

$$\text{Fluid rate: } \frac{\text{volume in ml}}{\text{Time in min}} \times \text{drop factor}$$

Fluid rate: no of drops per min

Drop factor: no of drops per ml (1ml = 60 micro drops) Time in minute: intended duration of infusion

### The Holliday - Segar 4-2-1 Rule to estimate

#### Maintenance hourly fluid Requirements

Weight (Kg)	Hourly	Daily
<10 kg	4ml/kg/hr	100 ml/kg/day
10 kg-20 kg	40 ml+2ml/kg for every kg>10kg	1000 ml+50ml/kg/day for every kg>10kg
>20 kg	60 ml+1 ml/kg for every kg>20kg	1500 ml+20ml/kg/day for every kg>20kg

### 4-2-1 rule Examples

For a 5 kg infant, maintenance hourly fluid requirements would be  $4 \times 5 = 20\text{ml/hr}$  Daily rate:  $20 \times 24 \text{ hr} = 480 \text{ ml/day}$

For a 15 kg child, maintenance hourly fluid requirements would be  $4 \times 10 = 40\text{ml}$

$$+ 2 \times 5 = 10\text{ml}$$

Total:  $40+10=50\text{ml/hr}$

Daily rate:  $50 \times 24 \text{ hr} = 1200 \text{ ml/day}$

## 5. CAPILLARY PUNCTURE

### Definition

Capillary puncture is a convenient method for collection of small amounts of blood for routine but frequently repeated investigations like blood sugar in infants.

### Equipments

- Lancets
- Glucometer
- Glucostrips
- Gloves
- Antiseptic solution
- Gauze
- Sharp disposal container
- Bandages or tape

### Procedure

- Identify the child.
- Reassure the child/parents and explain the procedure.
- Collect the required equipment.
- Wash the hand and put on the gloves.
- Position the infant with the head slightly elevated.
- Warm the heel from which the blood is to be obtained.
- Clean the heel with alcohol preparation and dry with sterile gauze as alcohol can influence test result.
- Using a lancet, puncture the most medial or lateral portion of the plantar surface.
- Puncture no more than 2.4mm.

- Wipe away the first drop of blood with sterile gauze.
- Allow another drop of blood to form. Place the glucostrip gently after inserting in glucometer.
- When finished clean the site and apply pressure with clean gauze or apply adhesive bandage to stop bleeding.
- Read the glucose level and note.
- Dispose the gloves and other disposable articles.
- Perform hand hygiene.
- Documentation of the procedure.

## 6. ARTERIAL BLOOD GAS SAMPLING (ABG)

**Definition:** The evaluation of gaseous exchange in the lungs by measuring the partial pressure of oxygen (PaO<sub>2</sub>), the partial pressure of carbon dioxide (PacO<sub>2</sub>), and pH level of the arterial blood.

### Purpose:

- To evaluate the efficiency of pulmonary gas exchange.
- To assess the ventilation functioning of the lungs.
- To monitor respiratory therapy.
- To determine the acid/base level of the blood.

### Articles Required:

- 2cc disposable syringe with a 22- or 23-gauge needle.
- Spirit swab or betadine
- Syringe with heparin
- Ice pack

### Normal Range:

Components	Range
pH (blood ph)	7.35-7.45
PO <sub>2</sub> (partial oxygen)	80-100 mm of Hg
PCO <sub>2</sub> (partial carbon dioxide)	35-45 mm of Hg
HCO <sub>3</sub> (bicarbonates)	22-28 meq/ ltr

### Procedure:

Care Action	Rational
1. Gather all the equipment.	Organization facilitates performance of



	the skill.
<p>2. Select an appropriate site for the arterial puncture. Site selection should be based on</p> <p>Availability of collateral circulation</p> <ul style="list-style-type: none"> <li>• Accessibility</li> <li>• Presence of other surrounding anatomical structures such as nerves,</li> <li>• Accompanying veins or bone.</li> <li>• Condition of the site.</li> </ul> <p>The sites to be used in order of preference are:</p> <ul style="list-style-type: none"> <li>• Radial artery</li> <li>• Brachial artery</li> <li>• Dorsalis pedis</li> <li>• Posterior tibial</li> </ul>	To prevent re puncture of the site and for the easy access for collection of the sample.
3. Check the FIO <sub>2</sub> prior to initiation of the puncture.	To assess the O <sub>2</sub> level in the body.
<p>4. Locate the radial artery.</p> <p>Hold the arm supine and slightly extend the wrist. Severe extension of the wrist may obscure the pulse.</p> <p>Palpate the radial artery pulse in the distal bone notch of the radius below the base of the thumb and lateral to the tendon.</p>	To perform the Allen test for the identification of proper blood circulation.
<p>5. Determine that collateral circulation is adequate by using the Modified Allen Test as follows:</p> <p>Hold patient's hand overhead with fist clenched to drain blood while compressing both radial and ulnar arteries.</p> <ol style="list-style-type: none"> <li>a) Lower the hand and open the fist.</li> <li>b) Release pressure over ulnar artery.</li> <li>c) Check to see if color returns within six (6) seconds, indicating a patent ulnar artery and intact superficial palmar arch.</li> </ol>	To assess the adequate collateral circulation of the blood.
6. Scrub the site with povidone iodine solution on cotton swab.	To minimize the risk of infection.
7. Palpate the artery for the site of the	To perform the procedure.

<p>strongest arterial impulse.</p> <p>Enter the skin at 30 to 45 angle. The skin is entered just proximal to the wrist at about the level of the proximal skin crease. Insert the needle gently but firmly in the area where maximum impulse is felt.</p>	
<p>8 a. When the artery has been punctured, attach pre-heparinized tuberculin syringe. Aspirate slowly and gently. Collect a minimum of 0.2 ml in the tuberculin syringe.</p> <p>8 b. After obtaining the sample, withdraw the needle and apply direct constant pressure for a minimum of five (5) minutes by the clock using a dry cotton ball or gauze. Even if an attempt is unsuccessful or results in an inadequate sample, pressure must be applied. If bleeding has not stopped after five (5) minutes of continuous pressure on the site, continue to apply pressure.</p>	<p>To prevent the blood clot and collection of the sample.</p> <p>Application of the pressure above the puncture prevents risk of bleeding as arterial blood flow has high pressure.</p>
<p>9. Check sample for presence of small bubbles. If small bubble gets into sample, point the top of the syringe up and expel the air bubbles immediately and cap syringe.</p>	<p>An air bubble in the sample can change the blood gas values.</p>
<p>10. Label the syringe and take the sample to the lab immediately.</p>	<p>To prevent clotting of the sample and mismatch of the sample.</p>
<p>11. Perform hand washing and replace all the articles.</p>	<p>To minimize the source of infection.</p>

**Complications:**

- Bleeding
- Hematoma
- Sloughing of skin
- Infection
- Trauma to adjacent structure (nerve, bones)

## 7. URINARY CATHETERIZATION

### Definition

Urinary catheterization is a procedure used to drain the bladder and collect urine, through a flexible tube called a catheter.

### Purpose

- To relieve urinary retention
- To empty the Bladder before, during, or after surgery
- Collection of uncontaminated urine specimen.
- For accurate measurement & monitoring of urine output.
- For bladder irrigation.
- Intermittent decompression for neurogenic bladder.

### Equipment

- Catheter tray (with drapes, fenestrated drape, cotton balls, forceps)
- Catheter (appropriate size)
- Sterile drainage tubing with collection bag
- Correct size syringe (check catheter balloon)
- Sterile water
- Cleansing solution
- Lubricant
- Sterile gloves
- Specimen container
- Tape (to anchor tubing)

## Procedure

- Assurance to the child.
- Maintain adequate lighting.
- Position female child: Dorsal recumbent (supine with knees bent and hip flexed). Male child: supine position.
- If soiling evident, clean genital area with soap and water first.
- Perform hand hygiene.
- Assemble all the equipment.
- Open the sterile catheterization kit, using sterile technique.
- Put on the sterile gloves.
- Apply sterile drapes. Place a fenestrated drape. Female child- over perineum. Male child- over penis.
- Lubricate the catheter.
- Pour the antiseptic solution over the cotton balls.
- Place the urine specimen collection container within easy reach.
- Clean meatus: female child: Using swabs held in forceps in the other hand clean the labial folds and the urethral meatus. Move swab from above the urethral meatus down towards the rectum. Discard swab after each urethral stroke. Male child: Foreskin if not circumcised hold penis below glans. Using other hand clean the meatus with swab held in forceps. Use a circular motion from the meatus to the base of the penis.
- For older boys insert the Xylocaine gel into the urethra (Holding the penis perpendicularly) and wait 2-5 minutes before proceeding to next step.
- Insert catheter until urine flows, advance 2.5-5cm more.
- Then inflate the balloon with distilled water.
- Gently pull catheter until resistance is felt.
- Connect catheter to drainage system.

- Secure the catheter to thigh.
- Position drainage bag lower than the bladder.
- Dispose the gloves & other disposable articles.
- Perform hand hygiene.
- Documentation of the procedure.

## 8. SUCTIONING

**Definition:** The process of applying a negative pressure to the distal ET tube or trachea by introducing a suction catheter to clear excess, or abnormal secretion.

**Oropharyngeal suction:** A suction catheter through the mouth to clear secretions.

**Nasopharyngeal suction:** A suction catheter is passed through the nose to clear secretions.

### **Purposes:**

- To safely maintain airway patency by removing pulmonary secretions or foreign matter from the endotracheal tube (ETT) or tracheostomy tube as a component of bronchial hygiene and mechanical ventilation.
- To reduce the risk of hypoxaemia and potential for infection.
- It also enables collection of tracheal aspirates for diagnostic purposes.

### **Clinical indications for ETT suction:**

- Desaturations
- Bradycardia/tachycardia
- Absent or decrease chest movement
- Visible secretions in ETT
- Coarse or decreased breath sounds
- Increase in work of breathing
- Recent history of large amounts of thick/tenacious secretions

### **Equipment required:**

- Sterile gloves
- Sterile water or 0.9% NaCl
- Portable suction machine
- Suction catheter

### **Suction Pressure:**

- Neonates: 80-100 mm of Hg
- Paediatrics: 120-180 mm of Hg

**Procedure:**

<b>Care Action</b>	<b>Rational</b>
1. Explain the procedure to the patient.	To reduce anxiety of the client.
2. Perform hand washing and collect all the needed articles.	To minimize the risk of infection.
3. Determine the suction catheter size and check the suction pressure.	To prevent injury to the client.
4. Hyper oxygenate with 100% of oxygen before suctioning.	To prevent hypoxaemia.
5. Wear sterile gloves and ensure that the suction catheter does not touch anything that could contaminate it.	To reduce the risk of infection.
6. Apply negative pressure and rotate the suction catheter gently and the duration should not exceed 6 seconds.	For the removal of the secretions.
7. Repetitive catheter passes are not used unless the volume indicates it.	To minimize the risk of injury.
8. Observe infant's post suction parameters.	To obtain baseline information.
9. Use small amount of sterile water if needed to clear secretions from suction tubing.	For the removal of the secretions.
10. Turn off the vacuum pressure. Dispose of contaminated catheter, remove gloves and perform hand washing.	To minimize the risk of infection.
11. Ensure the child in comfortable position and document the findings.	Recording and reporting.

**Complications:**

- Hypoxaemia
- Bradycardia/tachycardia
- Atelectasis
- Decrease tidal volume
- Pneumothorax
- Pneumonia
- ETT dislodgement
- Airway mucosal trauma

**9. OXYGEN INHALATION**

**Definition:** Oxygen can be lifesaving, but is to be used with almost care, treating it as potentially toxic agent whose use should continue no longer than is absolutely necessary. It is the administration of oxygen as a medical therapy.

**Purposes:**

- To increase oxygenation of blood.

- To decrease cardiac and respiratory load.

**Equipment required:**

- Portable cylinder
- Delivery tubes
- Mask of different sizes and types
- Regulator
- Humidifier
- Reservoir bag
- Bath towel

**Methods of delivery:**

- Nasal cannula
  - Face mask (simple facemask, partial re- breather mask, non-breather mask, venturi mask)
  - Hood box
1. **Simple face mask:** Simple re breathing type of face mask deliver about 30-60% concentration at flow rate of 6-10 l/min. The non-rebreathing type of face masks have an oxygen reservoir attached to them which helps to deliver a higher concentration of oxygen, up to 95% with flow rates of 10 to 12 l/min.
  2. **Nasal cannula/ prongs:** These deliver low flow (1-2 l/min), low concentration (30-35%) oxygen with two prongs that are inserted in the anterior nares and held by adhesive tapes.
  3. **Hood box:** Used for neonates and young children. Delivers about 30% oxygen concentration and does not require humidification.
  4. **Venturi mask:** It allows to deliver the most precise concentration of oxygen. This has a large tube with an O2 inlet. As, the tube narrows, the pressure drops, causing air to locked in through side posts.
  5. **Partial re breather mask:** It is mixed with 100% O2 for the next inhalation and is attached with the reservoir bag. Bag should be deflated slightly with inspiration.

**Procedure:**

Care Action	Rationale
Explain the procedure to the patient and review safety precaution.	To reduce the anxiety of the patient.
Wash hands.	To minimize the risk of infection.
Connect the nasal cannula to the O2 set up humidification.	To deliver the required oxygen.
Observe all the safety precaution.	To minimize the effects of hazards.
Adjust the flow as prescribed.	To deliver prescribed need of the oxygen.
Check that oxygen is flowing out of the prongs.	For effective delivery of the oxygen.
Place the prongs in the client’s nostrils and adjust.	Organization facilitates accurate skill problems
Use gauze pads at ear beneath the tubing.	To reduce risk of injury.
Encourage the client to breathe through his or her nose and mouth closed.	For proper inspiration and expiration of the client.
Wash hands and re assess client’s	To minimize the risk of infection.

response to therapy.	
Records the vital signs and inform to senior staff or doctors about the abnormal findings.	Recording and reporting and for documentation.

**Points to remember:**

- Assess the client frequently for the identification of signs of oxygen toxicity.
- Handle the cylinder with care, O2 stand should be used to prevent falling and causing injury to someone or the equipment.
- Oxygen cylinder should be stored in cool temperature and should be away from electrical supplies and fires.
- Regular monitoring of the nasal prongs and tubes to be done for effective delivery of the oxygen.

**10. NASOGASTRIC TUBE INSERTION AND FEEDING**

**Definition**

Nasogastric tube feeding is a means of providing food by way of a catheter passed through the nares or mouths, past the pharynx, down the esophagus and into the stomach.

**Purpose:**

- To feed infants and children who are not able to take in enough calories by mouth.
- To administer medication that require minimal child effort when the child is unable to suck and swallow adequately.

Age	< 4 months	4 months to 2 years	2-4 years	4-8 years	> 8 years
<b>Tube for medication and feeding</b>	5-6F	6-8F	8F	8-10F	10-12F
<b>Tube for decompression</b>	6-8F	8-10F	10F	10-12F	10-14F



**Equipment:**

- NG tube
- Measuring container and spoon
- Stethoscope
- Syringe - 5-10 mL.
- Sterile water or normal saline
- Water soluble lubricant
- Tape - Hypoallergenic
- Feeding Formula
- Gloves

**Procedure:**

1. Explain the procedure and gain verbal consent from the parents.
2. Collect necessary equipment.
3. Perform the hand washing.
4. Position the infant to facilitate insertion and comfort.
  - Lying supine.
  - Lying with the bed head elevated 30-40°.
  - Older children may feel comfortable sitting upright.
  - Infant and young children may need holding/ restraining which need parent consent.
5. Measure the distance from the infant nose to ear lobe to Xiphoid process of sternum and mark the length on the feeding tube with tape.
6. Have suction apparatus ready to clear the airway and prevent aspiration if regurgitation occurs.
7. Lubricate the catheter with sterile water or normal saline or water soluble lubricant.
8. Stabilize the infant's head with one hand; use the other hand to insert the catheter.
  - Slip the catheter into the nostril and direct it toward the occiput in a horizontal plane along the floor of nasal cavity. Do not direct the catheter upward and observe for respiratory distress.
9. If the infant swallows, passage of the tube may be synchronized with the swallowing. Do not push against resistance. If there is no swallowing insert the tube quickly and smoothly.
10. When the catheter has been inserted to the re measured length, carefully remove the guide wire. Use the free end of the tape on the child's nose to keep the tube in place.
11. Check the placement of the tube.

- Pull back the plunger of the syringe to draw up 5 ml of air.
- Place the syringe on the head of the NG tube while the other opening is capped off.
- Place the stethoscope over the child's stomach (upper left side of the abdomen)
- Inject the air into the tube and listen for a "whoosh" sound. This sound will tell the tube is in the right place. If you do not hear the sound, remove the tube and repeat the steps in placing the tube.

## **FEEDING THE CHILD**

1. The feeding position should be right side lying or supine, with head and chest elevated 30 degrees.
2. Aspirate the tube before feeding begins to assess for residual contents and to remove any air
3. If over one-half of the previous feeding is obtained by aspiration, withhold the next feeding
4. If small residual of feeding is obtained attach the feeding syringe after removing the plunger and fill with feeding fluid. Hold the infant while feeding.
5. The flow of the feeding should be slow. Do not apply pressure. Elevate the reservoir 6-8 inches (15-20 cm) above the patient's head.
6. Feeding given too rapidly may interfere with peristalsis, causing abdominal distention, regurgitation
7. When the feeding is completed, the catheter may be irrigated with clear water. Before the fluid reaches the end of the catheter, clamp it off and keep in place for next feeding.
8. Discard the left over solution.
9. Burp the child.
10. Place the child on his right side for at least 1 hour.
11. Observe the child's condition after feeding: bradycardia and apnea
12. Note vomiting or abdominal distention.
13. Note the infant's activity.
14. Accurately describe and record procedure, including type and size of tube used, verification of placement, time of feeding, type and amount of feeding given and activity before, during and after feeding.

## 11. CARE OF NEWBORN IN INCUBATOR

### Introduction:

- Incubator is an apparatus for maintaining an infant, especially a premature infant, in an environment of controlled temperature, humidity, and oxygen concentration.
- Incubators have simple alarm system to alert the clinical staffs if there is any danger of overheating of the device. In some cases power is reduced automatically to prevent overheating.

### Principle:

- Infant incubator is in the form of trolley normally with mattress on the top covered by plastic cover. This chamber provides a clean environment and help to protect the baby noise, infection and excessive handling.

### Purpose:

An infant may require an incubator for the following reasons:

- When they are not maintaining their own temperature with clothing and wrapping.
- When they are acutely unwell and close observations required.
- When they are at risk of abnormal heat loss.
- They have a known infection or the potential to develop sepsis.

### Main purpose of keeping and caring a neonate in incubator are

- Maintenance of thermo neutral ambient temperature
- Provision of desired humidity and oxygenation.
- Observation of very sick neonate.
- Isolation newborn babies from infection, unfavorable external environment.

### Functions:

1. Temperature control
2. O<sub>2</sub> concentration
3. Humidity control
4. Breathing gas filtration

### Types:

1. **Portable and non portable:** Portable incubation can be used to shift the baby to another area of hospital as needed.
2. **Open box type:** It is the also known as Armstrong , here neonate is keep on the Plexiglas bassinet to keep unstable babies or newly born babies. A radiant warmer can be attached if child needs.

NOTE:

The main disadvantage of this type of incubator is it can not maintain thermoneutral environment if lids are open frequently. Despite it can not filter the air and neonate is directly in the contact with external environment. It has only advantage that neonate in this incubator can be observed well and can be handled easily.

3. **Close type:** It has special function to concentrate fresh air after filtration. It prevents water loss from radiation. As neonate remain inside the box the risk of infection is minimum.
4. **Double walled:** The incubator has two walls. As air is not good conductor of heat the incubator prevents heat and fluid loss.

**Step:**

1. Prepare the incubator
2. Care of baby
3. Adjusting incubator temperature
4. Monitoring
5. Use of humidification

## 12. CARE OF NEWBORN IN RADIANT WARMER

**Introduction:**

- The radiant warmer (also called open care system) was developed as an open incubator that ensures ready access to the baby.
- The overhead quartz heating element produces heat which is reflected by the parabolic reflector on to the baby on the bassinet.
- The quantity of heat produced is displayed in the heater output display plan. Temperature selection knobs select the desired skin temperature.
- Radiant warmers provide intense source of radiant heat energy. They also reduce the conductive heat losses by providing a warm microenvironment surrounding the baby.

**Modes of radiant warmer:**

1. Servo mode
2. Manual mode

**1. Servo mode**

- Set temperature at 36.5°C, heater output will adjust automatically to keep baby at set temperature.
- If the baby temperature is below the set temperature, the heater output will increase; if the baby is at set temperature or higher the heater output will become zero.
- Look for probe displacement when the baby in servo mode every hours.
- Servo system is the preferred method of running the open care system.

- In the servo mode, whenever the baby temperature rises by more than 0.5C above the set temperature, a visual/audible alarm is activated.
- Caregiver must pay attention to sort out the fault.
- Often this occurs when the temperature probe comes off the baby's skin.

## **2. Manual mode**

- The heat output from the quartz heating rod could also be increased or decreased manually.
- This is done by the heater output control knobs. This is called the manual mode of operation

### **Parts of radiant warmer**

- Bassinet: For placing the neonate
- Quartz rod: Provides radiant heat
- Skin probe: When attached to the baby's skin, displays skin temperature
- Control panel: Has a collection of displays and control features/knobs
- Heater output display indicates how much is the heater output.
- Heater output control knobs: For increasing or decreasing the heater output manually.

### **Steps for use of warmer:**

- Connect the unit to the mains. Switch it on.
- Once connected to mains, heater output can be regulated by knob on front panel. The output is displayed as% or bars or bulbs.
- Select manual mode.
- Select heater output to 100% for some time (20 minutes) to allow quick pre-warming of the bassinet covered with linen.
- Select servo mode
- Read the temperature on display
- Select the desired set temperature of baby as 36.5 °C.
- Place the baby on the bassinet.
- Connect skin probe to the baby's abdomen with sticking tape.
- If the manual mode to be used, the desired heater output.
- In the manual mode, record baby's axillary temperature at 30 minutes and then 2 hourly.
- Response to alarm immediately. Identify the fault and rectify it.
- Ensure the baby's head is cover with cap and baby with clothes unless indicated to keep naked.
- Turn the baby frequently.
- Use of cling wrap.

### **13. PHOTOTHERAPY**

**Definition:** Phototherapy is the use of visible light to treat severe jaundice in the neonatal period. Treatment with phototherapy is implemented in order to prevent the neurotoxic effects of high serum unconjugated bilirubin. Phototherapy is a safe, effective method for decreasing or preventing the rise of serum unconjugated bilirubin levels and reduces the need for exchange transfusion in neonates.

**Purposes:**

- To support the care of babies with hyperbilirubinemia.
- To decrease infant serum bilirubin levels.
- To maintain phototherapy treatment safely and effectively.
- To minimize the infant- maternal separation and facilitate breast feeding.

**Types:**

- Single light phototherapy
- Double light phototherapy
- Triple light phototherapy

**Risk factors:**

- Mothers with a positive antibody screen
- A family history of G6PD deficiency
- A previously affected sibling
- Cephalhematoma, bruising and trauma from instrumental birth
- Delayed passage of meconium
- Prematurity
- Dehydration
- Inadequate breast feeding
- ABO incompatibility
- Rh incompatibility

**Nursing care of child under Phototherapy:**

- Commence phototherapy once TSB/SBR is greater than the appropriate reference range for neonate's gestation/ weight and presence of risk factors.
- Normal hand washing measures should be attended to during care of a neonate receiving phototherapy.
- Neonates should be nursed naked apart from a nappy under phototherapy and will need to be nursed in an isolate to maintain an appropriate neutral thermal environment.
- Position phototherapy units no more than 45 cm from the patient.

- Expose as much as of the skin surface as possible to the phototherapy light. To maximize skin exposure, cover the baby genital area and their eye with protective shield only.
- Cover the eyes with appropriate opaque eye covers.
- Ensure eye covers are removed 4-6 hourly for eye care during infant cares or feeding. Observe for discharge/ infection/damage and document any changes.
- Daily fluid requirement should be reviewed and individualized for gestational and postnatal age.
- Maintain a strict fluid balance chart.
- Breast feeds should be done continuously to maintain the hydration of child and relieve mother child separation anxiety.
- Monitor vital signs and temperature at least 4 hourly, more often if needed.
- Ensure that the phototherapy unit is turned off during collection of blood for TSB/SBR levels, as both conjugated and unconjugated bilirubin are photo oxidized when exposed to white or ultraviolet lights.
- Observe for signs of potential side effects.

**Potential complications:**

- Overheating
- Water loss from increased peripheral blood flow and diarrhea
- Diarrhea from intestinal hypermobility
- Ileus
- Rash
- Retinal damage
- Bronzing of neonates with conjugated hyperbilirubinemia
- Temporary lactose intolerance

**14. BLANTYRE COMA SCALE**

**Blantyre coma scale:** It is a modification of the Glasgow coma scale used to assess the level of consciousness in the children. The score assigned by the Blantyre Coma scale is a number from 0 to 5. The score is determined by adding the results from three groups: Motor response, Verbal response and Eye movement.

**Purposes:**

- To assess the level of consciousness in children.
- It is used to assess children with severe falciparum malaria, particularly cerebral malaria.
- It is used as a diagnostic procedure.
- It is used as a guide for early management of children with head injury and neurological disorders.

S.N	Response	Coma Score Parameter	Score
1.	Motor response	Localizes painful stimulus	2
		Withdraws limb from painful stimulus	1
		No response or inappropriate response	0
2.	Verbal response	Cries appropriately with pain or if verbal speaks	2
		Moans or cries abnormally with pain	1
		No vocal response to pain	0
3.	Eye movement	Watches or follows	1
		Fails to watch or follow	0
<b>Total score</b>			<b>5</b>

**Interpretation:** The minimum score is 0 which indicates poor results while the maximum is 5 indicating good results.

## 15. ASSISTING IN LUMBAR PUNCTURE AND BONE MARROW ASPIRATION

### LUMBAR PUNCTURE:

**Definition:** Lumbar puncture (LP) is also known as spinal tap, is an invasive procedure, where a hollow needle is inserted into the space surrounding the subarachnoid space in the lower back to obtain samples of CSF.

#### Indication:

- Measure CSF pressure
- Diagnosis of meningitis, meningoencephalitis, intracranial or subarachnoid haemorrhage, some malignant disorders
- Infuse medications which include spinal anaesthesia before surgery, contrast material for diagnostic imaging such as CT- myelography and chemotherapy drugs.
- Treat normal pressure hydrocephalous, cerebrospinal fistulas, and idiopathic hypertension.
- Placement of a lumbar CSF drainage catheter.

#### Contraindication:

- Increased intracranial pressure due to brain tumour
- Skin infection near the puncture site
- Severe coagulopathy
- Severe degenerative vertebral joint disease

#### Equipment required:

- Sterile gloves



- Sterile drapes and procedure tray
- Sterile gauze pads
- Aseptic solution (betadine, spirit)
- Local anaesthesia: lidocaine 1% solution
- 25 G needle
- 10 ml syringe (1)
- CSF tube (2 to 4)

**Procedure:**

Care Action	Procedure
1. Explain the procedure to the patient.	To reduce the anxiety of the client.
2. Obtain the informed consent.	To prevent legal issues.
3. Promote comfort to the client and instruct to empty bladder and bowel before procedure.	
4. Establish a baseline assessment and monitor vital signs.	To obtain baseline information.
5. Position the patient to fetal position. The patient is positioned on his side at the edge of the bed with his knees drawn up to his abdomen and chin tucked against his chest (fetal position) or sitting while leaning over a bedside table.	For the proper flow and collection of the sample.
6. The skin is prepared and draped, and a local anaesthetic is injected.	To minimize the sensation of pain.
7. The needle is inserted in the midline between the spinous processes of the vertebrae (usually between the third fourth or the fourth and fifth lumbar vertebrae.	For the collection of the sample.
8. Collect the specimen and placed in the appropriate containers.	
9. Remove the needle and a small sterile dressing is applied.	To reduce the leakage of the CSF.
10. Apply brief pressure to the puncture site and place the patient flat on bed for 4 to 6 hours depending upon the condition of the client.	To prevent bleeding and leakage of CSF.
11. Monitor vital signs and the puncture site for signs of CSF leakage and	To obtain baseline information.

drainage of blood	
-------------------	--

**Complications:**

- Post lumbar puncture headache
- Back pain
- Bleeding
- Pain or numbness
- Brainstem herniation

**BONE MARROW ASPIRATION**

**Definition:** A procedure in which a small sample of bone marrow (soft, sponge-like tissue in the center of most bones) and bone is removed.

**Purposes:**

- To diagnosis/ staging of diseases.
  - Leukaemia
  - Multiple myeloma
  - Lymphoma
  - Anaemia
  - Thrombocytopenia
  - Pancytopenia
- To monitor the development of haemolytic disease and respond towards the treatment given.
- To obtain more information on haematopoiesis.
- To obtain microbiological cultures in children with fever of unknown origin.

**Indications:**

- Haematological disorder
- Fever Unknown Origin (FUO)
- Lymphadenopathy
- Hepatosplenomegaly
- Metastatic tumour

- Tuberculosis

**Contraindication:**

- Haemorrhagic disorders such as congenital coagulation factor deficiencies (e.g haemophilia), DIC and concomitant use of anticoagulant.
- Skin infection or recent radiation therapy at the sampling site.
- Bone disorders such as osteomyelitis or osteogenesis imperfecta.

**Common sites:**

- Iliac Crest ( posterior and superior)
- Sternum (2nd space of sternum)
- Tibia Crest (babies below 1 year)

**Procedure:**

- Make sure the doctor have obtain consent from client.
- Provide clear explanation and counsel the patient.
- Check vital signs and make sure the puncture site has been cleaned.
- Prepare equipment and prepare trolley aseptically
- Make sure equipment are complete.
- Help client to remain in the right position.
- Assist the doctor in the procedure.
- Monitor vital signs during procedure to detect complication.
- Place the client in supine position and apply sandbag at the puncture site at least for 6 hours to prevent bleeding complication.
- Observe the pressure dressing is tight, clean and no signs of bleeding to prevent infection.
- Observe the client until their condition stable and recover.
- Monitor vital signs after the procedure.
- Replace equipment and make sure CSSD instruments are complete before sending to autoclave.

**Complications:**

- Hemorrhage
- Pain
- Infection

- Perforation of major vessel
- Risk of general anesthesia and sedation.
- 

## **16. CHEST PHYSIOTHERAPY**

Definition: Chest Physiotherapy is a set of manoeuvres that aid in postural drainage of secretions from specific areas of the lungs by the use of gravity and percussion.

### **Purpose**

- To remove bronchial secretion
- To improve ventilation of lungs
- To assist in coughing
- To increase the efficiency of the respiratory muscles

### **Articles required:**

- Trendelenburg bed
- Pillows, patient gown and towel
- Sterilized clothes
- Stethoscope
- Suction Apparatus
- Mechanical percussor
- Cardiac monitoring, pulse oximeter
- chest radiograph
- Emergency airway

### **Procedure:**

- Verify physician's orders and identify patient using two identifiers.
- Collect needed equipment.
- Wash hands.

- Explain procedure and rationale to the patient.
- Assess the chest x-ray for pulmonary findings.
- Assess respiratory rate, breathing pattern, rhythm, skin color, Blood pressure, heart rate of the patient.
- Assess the patient's ability to take deep breath.
- Position patient according to segment drainage chart. Allow 30-45 minutes after patient's completion of a meal.
- If patient's status does not allow full positioning, position him as close as possible to proper angle.
- Perform chest physiotherapy.
- Monitor the following throughout the therapy reaction, discomfort and dyspnea, heart rate and rhythm, respiratory rate, sputum production, breathe sound, skin color, mental status, oxygen saturation, blood pressure.
- Modify the techniques of CPT according to patient tolerance.

### **PERCUSSION/ CLAPPING**

- Chest percussion involves rhythmically clapping on the chest wall over the area being drained to force secretions into larger airway for expectoration.
- Position the hand so the fingers and thumb touch and the hands are cupped.
- Perform the hand so the fingers and the thumb touch and the hands are cupped.
- The procedure should produce a hollow sound and should not be painful.
- Perform percussion over a single layer of clothing, not over buttons or zippers.
- Percussion is contraindicated in patients with the bleeding disorders, osteoporosis, fractured ribs and open wounds and surgeries.
- Do not percuss over the spine, sternum, stomach or lower back as trauma can occur to the spleen, liver or kidneys.

- Typically, each area is percussed for 30 to 60 seconds several times a day.
- If the patient has tenacious secretions, the area must be percussed for 3-5 minutes several times per day.

#### **VIBRATION:**

- Vibration is a gentle, shaking pressure applied to the chest wall to move secretions into larger airways.
- The nurse uses rhythmic contractions and relaxations of arm and shoulder muscles over the patient's chest.
- During vibration, place your flat hand firmly against the chest wall, on the appropriate lung segment to be drained.
- Vibrate the chest wall as the patient exhales slowly through the pursed lips.
- After each vibration, encourage the child to cough and expectorate secretions into the sputum container.

#### **POST CPT:**

- Patient should be advised to practice oral hygiene procedure to decrease the bad taste and odor.
- Record the procedure.
- Report all the significant findings.
- Disinfect all non-disposable equipment used and store appropriately.

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## 1. ANTENATAL EXAMINATION

### Definition

Systematic supervision (examination and advice) of a woman during pregnancy is called antenatal (prenatal care). The care should start from the beginning of pregnancy and end at delivery.

### Purpose

- To maintain the woman in good health during pregnancy and to help to achieve a healthy fetus.
- To make plans to educate the woman and her family in order to take appropriate action when complications arise.
- To identify the fetal growth and health condition.
- To evaluate the progress of pregnancy
- To help mother to prepare to breast feed successfully, experience normal puerperium and take good care of the child physically, psychologically and socially.

### Equipments

- BP instrument
- Thermometer
- Fetoscope
- Tape measure
- Weight machine
- Torch
- Watch
- Examination bed or table

### Steps:

1. History taking
2. Physical examination
  - General examination
  - Obstetrical examination ( Breast examination and abdominal examination)
1. History taking
  - **Demographic data** : Name, age, address religion, marital status, occupation, education, gravida , para, education of husband, occupation of husband)
  - **Chief complain**
  - **Socioeconomic History:** Housing, environmental status, economic status of the family, water supply, sewage disposal, family support to the pregnant.
  - **Personal History:** Sleep and rest, dietary pattern, smoking, alcohol and other harmful substance , Food allergy history, contraceptive history

- **Menstrual history:** Age of menarche, menstrual period, menstrual cycle, LMP
- **Past obstetric history :** Year and date of delivery, Pregnancy events (convulsions, abortion), Labor events (uterine rupture, tears through rectum, PPH), Methods of delivery, puerperium condition, Baby wt and sex, condition at birth, duration of breast feeding, immunization
- **Present obstetric history:** Gravida, Para, LMP, EDD, Week of gestation: Completeness of immunization, medicine taken, additional supplementation, ANC visit, quickening, minor and major problem (nausea, vomiting, P/V bleeding, headache, blurred vision, fatigue etc) of mother if any.
- **Past medical and surgical history:** Antihypertensive, Hypoglycemic, Antidepressant, Corticosteroid, Anticoagulant
- **Family history**

### Calculation of EDD and week of gestation

#### Naegele's formula:

EDD means expected date of delivery which is 40 weeks counting from the 1<sup>st</sup> day of last menstrual period if mother have regular menstrual period.

EDD= 1<sup>st</sup> day of last menstrual period + 9 month and 7 days.

Eg. If LMP is 10/ 10/ 2070 then

$$\begin{aligned} \text{EDD} &= 10/10/2070 + 9 \text{ month } 7 \text{ days} \\ &= 17/7/2071 \end{aligned}$$

### Calculation of weeks of gestation

#### 1<sup>st</sup> method

Weeks of gestation= Clinical visit day – 1<sup>st</sup> day of last menstrual period.

If clinical visit day= 2070/8/16

LMP= 2070/1/8

WOG= 2070/8/16-2070/1/8

$$= 7/8 \quad \text{means } 7 \text{ month and } 8 \text{ days.}$$

Now 1 month= 30 days so total days

$$= 7*30+ 8$$

$$=210+8= 218 \text{ days}$$

Now converting it into weeks dividing by 7

$218/7=31$  weeks and 1 day. It is write by 31+ 1weeks of gestation.

## 2<sup>nd</sup> method: Calculation from Month

- Take date of LMP and date of clinic visit
- Count the full month between those two period
- Calculate 1 month equal to 4 weeks and 3 month equal to 13 week
- Count the days after the LMP date and before the clinic visit date in partial das of month
- Convert the days in weeks and add both weeks to estimate the weeks of gestation

LMP date: 2059/4/20

Clinic visit date : 2059/10/15

Count full month between these two dates

56

7

(when count 3 week add 1 week ( because each month have 4 weeks 4 week = 28 days and 2 days is left in each month so add 1 week in every 3 month)

8

9

( 8 weeks)

- Count the partial days after LMP which is 10 days
- The partial days before clinic visit is 15 days

Total = 25 days

- Convert the days into weeks by dividing with 7

$25/7=3$  and 4 days Remaining

- ✓ Now add the weeks of gestation of month and days.

- Therefore the weeks of gestation of LMP 2059/4/20 on 2059/10/15 is  
13+8+3 weeks and 4 days

= 24 weeks and 4 days

## 2. Physical examination

- Assemble the necessary equipments.
- Hand wash should be performed before and after patient contact. The examiner should have warm hand and short fingers.
- Explain the women about the procedure
- Ask the women to empty the bladder.
- Ensure the women's privacy
- Help her onto the examination table.
- Position the woman's in comfortable position.
- Ask to loosen the clothing
- The examiner should stand on the right side of the patient

### A. General examination

I. Observe: Gait and movements, facial expression – alert and responsive, skin- lesions and bruises, nutritional status, personal hygiene.

### II. Clinical examination

- Height – short stature if less than 150 cm
- Weight
- Blood pressure – measure BP while the woman is seated and relaxed.
- If diastolic BP is  $> 90$  mm of Hg, ask the woman if she has severe headache, blurred vision or epigastric pain and check her urine for protein.
- Pulse
- Pallor- observe conjunctiva, under surface of the tongue and nail beds.
- Jaundice- observe bulbar conjunctiva, under surface of the tongue, hard palate and skin.

### III. Systematic examination

- Head: Inspect woman's hair color, texture, cleanliness, check lies, extra grow
- Eye: Examined especially color of lower palpebral conjunctiva (mucous membrane inside of eyelids) for anemia, sclera to jaundice and other eye condition (discharge swollen eyelids and eye movements)
- Ears: Examine hearing ability using wristwatch, any discharge, and abnormality should be noted.
- Mouth: Look (dorsum of the tongue) for pallor, and glossitis, tooth decay, gum bleeding, cyanosis. Normally is moist mouth, pink lips, no swelling and bleeding gums. Ask for swallowing difficulty,
- Neck: Inspect and palpate the neck gland for any tenderness and enlargement. Note the position of head and neck, and ability to move neck. Inspect the enlarge neck vein (slight physiological enlargement of the thyroid gland occurs during pregnancy in 50% of cases).
- Axilla: Check any tenderness and enlargement of lymph nodes of both sides
- Hand: Inspect the arms hand for movement, cleanliness, edema, nail beds for anemia.

- Chest: Check for breathing pattern, size and shape of chest, chest movement. Auscultation apex beat of heart and count for one minute, note any abnormal beat and murmur. Auscultation anterior and posterior chest wall for the lungs sound.
- **Breast Examination**
  - Inspection: Shape, size, primary and secondary areola, vein enlarge, nipple size, striae and nipple for inverted or flat, secretion of colostrums.
  - Palpation:
    - Start palpation from the far side.
    - Ask to raise the arm above the shoulder.
    - Use three or four fingers of right hand to feel the breast firmly, carefully and thoroughly.
    - Beginning at the outer edge, press the flat part of fingers in small circle, moving the circles slowly around the breast.
    - Gradually work towards the nipple.
    - Be sure to cover the whole breast.
    - More attention to the area between the breast and the underarm, including the underarm itself.
    - Feel for any unusual lumps or masses under the skin.
    - Repeat the examination on near side breast.
- Abdomen: In early pregnancy, examine bimanually for spleen, liver, kidney and stomach for any abnormality. In later pregnancy, abdominal is palpated for gravid uterus. (See antenatal abdominal examination).
- Legs: Inspect legs for joint movement and deformities, redness, swelling. Note any pain when she moves joint. Inspect and note presence of varicose veins and edema. Examine both the legs for edema over the medial malleolus and anterior surface of the lower 1/3 of the tibia, dorsum of feet. The area is pressed with the thumb for at least 5 second. Examine for edema should be done at each antenatal visit. Edema is typically described using a scale of 1+ to 4+.
  - 1 + minimal edema on pedal and pre-tibial area.
  - 2+ obvious edema of lower extremities.
  - 3+ edema of face, hands, sacrum and abdomen.
  - 4 + indicates massive, generalized edema (anasarca)

B. Antenatal abdominal examination consists of 3 methods:

- Inspection
- Palpation
- Auscultation

Inspection: Observe for shape ,size ,contour, skin changes (Striae gravidarum, linea nigra, rashes, sores or any evidence of trauma, surgical scars on abdomen) fetal movement, uterine contraction.

Palpation: It includes

- Estimation of fundal height
- Fundal palpation (first Leopold)
- lateral palpation (second Leopold)
- Pawlik's grip (third Leopold)
- Pelvic grip (fourth Leopold)
  
- **Estimation of fundal height:** Utilization of the tape measure to determine fundal height is called symphysis fundal height.
  - Palpate the upper margin of the fundus using the ulner aspect of the dominant hand and palpate the symphysis pubic using index and middle finger of non-dominant hand.
  - Measure the distance with the centimeter side of tape facing upward to avoid examiner basis.
  - The measuring tape must lie on the mother's abdomen skin, holding the zero on the tape at the symphysis pubis.
  - The height of the fundus after 22 weeks, the SFH approximates to the number of weeks upto 36 weeks .A variation of  $\pm$  accepted as normal.
  
- **Fundal Palpation (first leopald):** Fundal palpation also helps determine the fetal part occupying the fundus. The information will help to diagnose the lie and presentation of the fetus.

Procedure

- Make sure hands are clean and warm.
- Examiner should face towards the patient's head.
- Place both hands are gently placed around the fundus.
- Use the tip of the finger close together and curving round the upper border uterus.
- Gently palpated with the fingers of the both hands, in order to discover which pole of the fetus (breech or head) is lying in the fundus:
  - Broad, soft and irregular mass suggestive of breech and will be less mobile
  - Smooth, hard and globular mass suggestive of head. The head is more mobile than the buttock.
  - In transverse lie, neither of the fetal poles are palpated in the fundal area

- **Lateral Palpation:** Lateral palpation helps to determine the position of the fetus (fetal back or spine a fetal limb) and lie (longitudinal or transverse).

Procedure:

- Palpation is done facing the woman's face.
- Hands are placed at umbilicus level on either side of the uterus or halfway between the symphysis pubis and the fundus.
- Gentle pressure is applied alternatively with each hand.
- Palpate in a circular motion starting upward to downward, turn by turn.
- Detect the position of the back of the fetus i.e. smooth, firm, curve of the back of the fetus and regular part is thought to be the back of the fetus and knob-like irregular part the limb.

- **Pawlik's grip (third Leopold):** The most efficient means of abdominal palpation to determine which part of the fetus occupies the lower pole and lies over the pelvic brim, is the pawlik's grip.

Procedure

- The examination is done facing towards the patient face.
- The right hand is placed slowly and gently over the lower part of the above the symphysis pubis, with the fingers on the left and the thumb on the woman's abdomen.
- The left hand's is placed on the fundus to steady the uterus.
- Make sure that the woman's knees are bent slightly and ask to take a deep breath.
- Grasp the portion of the lower abdomen immediately above the symphysis between the thumb and middle finger on hand.
- Move the part from side to side to determine presenting part free or fixed
- You will feel a movable mass if the presenting part is not engaged. The head will feel hard and round, and mobile, if it's not entered the pelvic brim
- If the presenting part is engaged it cannot be moved.

- **Pelvic Grip (Fourth Leopold):** Pelvic palpation at the lower pole of the uterus just above the pelvic to decide which part of the fetus is in the lower part of the uterus.

Procedure

- Palpation is done facing the woman's feet.
- Advise the woman to bend knees slightly and encourage breathing.
- Place the hands, one on either side of the lower pole of the uterus (below the level the umbilicus) with the fingers just above the pelvic crests (finger directed toward the symphysis pubis) on either side of the woman's abdomen and the thumbs at the umbilicus level.
- The fingers are pressed downward in a manner of approximation of finger tips to palpate the part occupying the lower pole of the uterus i.e. hard or soft, bigger or small (hard fetal head is felt in cephalic, soft breech in breech presentation).

- See engagement of the presenting part. Fetal head can be moved from side to side when it is unengaged.

### Auscultation

- Place fetal stethoscope on abdomen at right angles to it on the same side that you palpated the fetal back.
- Place your ear in close, firm contact with fetal stethoscope.
- Move fetal stethoscope around to where fetal heart is heard most clearly.
- Remove hands from fetal stethoscope and listen to fetal heart.
- Listen for a full minute, counting beats again second hand of clock/watch. (see fetal heart monitoring)

### **Post-procedure**

- Replace the equipment
- Wash hands
- Document the following finding
  - a. Lie
  - b. presentation
  - c. position
  - d. Attitude
  - e. Engagement
  - f. Fetal heart rate

## **2. ADMISSION OF WOMAN FOR DELIVERY**

### **Definition:**

It is a process of admission of a pregnant woman to the hospital for the delivery and care of the woman and neonate.

### **Purpose:**

- To observe and report signs and symptoms and general condition of patient.
- To closely monitor a woman with a history of complication.
- To manage and prevent complications.
- To assist in a safe delivery of the baby.
- To provide immediate care, safety and comfort of the mother and child.

### **Equipments:**

- Sphygmomanometer
- Temperature tray
- Weight machine
- Vaginal examination tray



- Measuring tape
- Fetoscope
- Shaving set
- Light source
- Sterile cotton swabs (wet and dry)
- Dipstick to test urine
- Admission and investigation forms
- Enema set if needed
- Shaving set if needed

**Procedure:**

1. Welcome the woman and observe her gait, position and general condition.
2. Assist the woman onto the examination table.
3. If the booking case, check the woman's antenatal card or ask for the following information and record responses:
  - Age
  - Any disease and surgery
  - Allergies
  - Number of previous pregnancy / delivery
  - Problems with previous pregnancy / delivery
  - Number of living children
  - Type of delivery, if caesarean section ask indication
  - Type of medical problems
  - Any used medication
4. Ask the woman if she has experienced labour, fetal movement, pain, show, membrane rupture and leaking.
5. Ask when the pain started, its length, strength and frequency of contraction.
6. Perform handwashing.
7. Check the woman's temperature, pulse, respiratory rate, blood pressure, weight and height.
8. Check the woman's conjunctiva and palms for pallor.
9. Check the presence of edema.
10. Ask the woman to empty her bladder and obtain a midstream urine sample to test for protein and glucose if necessary.
11. Help the woman on to the examination table or bed and place a pillow under her head and upper shoulders.
12. Explain the abdominal examination.
13. Perform antenatal abdominal examination.
14. Listen to the fetal heart sound.
15. Estimate the fundal height.
16. Palpate and perform the presentation, position and lie.
17. Assess the descent of the fetal head.

18. Stop the abdominal examination if the woman has contraction and observe perineum for bloody show and appearance of amniotic fluid if membrane ruptures.
19. Do a vaginal examination to find out the stage of labour.
20. Wash hands.
21. Inform the on duty doctor / senior staffs.
22. Record all of the information thoroughly.
23. Obtain a written consent from her relative.
24. If the doctor orders an enema, administer and record the result.
25. If unbooked case, collect blood for complete blood count and grouping / cross match.
26. Start an intravenous fluid according to doctor`s orders (intravenous fluid start if necessary).
27. Ask the family for a deposit and inpatient number.
28. Transfer the woman to the ward if she is not in active labour.
29. If the woman ins in active labour, transfer her in waiting room of labour.
30. If the primi gravida woman is in second stage of labour, assist her in putting the gown.
31. Transfer the woman to the delivery room and prepare for the delivery.
32. Ask the family to bring the necessary medicines and clothing for the newborn and mother.
33. If the multigravida woman is in the second stage with strong uterine contraction, remember delivery is to be done in the admission room.

### **3. VAGINAL EXAMINATION**

**Definition:**

It is the examination done per vagina to detect the status of the vagina and cervix, and to assess the progress of labor as the fetal presenting part descends through the birth canal.

**Purpose:**

- To detect whether the women is in labour.
- To determine the progress of labour.
- To access the adequacy of birth canal in relation to the fetus.
- To detect the likelihood of cord prolapse in polyhydramnious and multiple pregnancy.
- To determine the cause of delay in progress of labour.
- To detect whether second stage has begun to assess status of head and degree of moulding.
- To apply fetal scalp electrode.

**Equipments**

- Articles for hand washing (soap and running water)

- Examination table or bed well protected with mackintosh and draw sheet
- Bucket at the end of the table to discard soiled swab
- A trolley containing sterile articles:
- One bowl with cotton swab
- Cheatle forceps and jar
- Light
- Sterile gloves
- Antiseptic solution

**Procedure:**

1. Explain procedure during the examination.
2. Read the chart of previous findings if done before.
3. Position the woman in dorsal recumbent position with knees flexed.
4. Drape the patient.
5. Do a surgical hand washing.
6. Put on sterile gloves.
7. Observe the external genitalia for the following.
  - Sign of varicosities, edema vulval warts or sores.
  - Scar from previous episiotomy or laceration.
  - Discharge or bleeding from vaginal orifice.
  - Color and odor of amniotic fluid, if membranes have ruptured.
8. Cleaned the vulva and Perineal area.
9. Dip the first two fingers of the right hand into the antiseptic solution.
10. Holding the labia apart with thumb and index fingers of left hand, insert the lubricated fingers into vagina, palm side down, pressing downwards.
11. With the fingers inside, explore the vagina for required information taking care not to touch the clitoris or anus.

Note the following:

- The feel on touch of vaginal walls.
  - Consistency of vaginal walls.
  - Scar from previous perineal wound, cystocele or rectocele.
12. Examine the cervix with the fingers in the vagina turned upwards. Locate the cervical os by sweeping the fingers from side to side.

Assess the cervix for:

- Effacement
  - Dilatation
  - Consistency
  - Forewaters.
13. Assess the level of presenting part in relation to maternal ischial spines for station.
  14. Identify the presentation by feeling the hard bones of the vault of the skull, the fontanelles.
  15. Identify the position by feeling the features of presenting part.
  16. With fingers follow the sagittal suture to feel the fontanelles.
  17. Assess the moulding, by feeling the amount of overlapping of skull bones.

18. At the completion of the examination, withdraw fingers from vagina; take care to note the presence of any blood or amniotic fluid.
19. Remove gloves and wash hands.
20. Auscultate the fetal heart tones.
21. Assist the woman to comfortable position and inform her of the progress of labor.
22. Record the findings and observations in the patient's chart and inform the obstetrician about the findings and progress of labor.

## **4. INDUCTION OF LABOUR**

### **Definition**

Induction of labour is a process for initiating of uterine activity to achieve vaginal delivery.

### **Purpose**

- To stimulate uterine contractions during pregnancy before labor begins on its own to achieve a vaginal birth.

### **Preparation**

#### **Patient**

##### Physical

- Skin preparation
- The patient should be encouraged to empty the bowel and bladder.

##### Physiological preparation

- Check the lab values for Hb, ESR, grouping, HIV, Hbs, etc

##### Psychological preparation:

- The decision to induce labor should only be made with consent of the patient. The patient and relatives must be explained clearly about the procedure.

### **Equipment**

- Articles required for per vaginal examination
- Cleaning articles (surgical induction)
- Drugs needed for induction - pitocin, ceirpiene, cytotec
- Kocher's artery forceps-for rupture of membranes, amniotic needle
- Surgical gloves
- Kidney tray/ bowl to collect amniotic fluid.

### **Procedure**

Induction is frequently divided as

**Medical induction** - where the drugs alone are used to induce uterine contraction and cervical dilatation and the amniotic sac remains intact.

**Surgical induction** - where the membranes are artificially ruptured /ARM.

Combined is the usually followed method.

## 1. Medical Induction

### Indications

- Intrauterine death
- Premature rupture of the membranes.
- In cases of failure of surgical induction as an alternative to caesarean section.
- In combination with surgical induction.

### Drugs used

- Oxytocin
- Prostaglandins - PGE<sub>1</sub> & PGE<sub>2</sub>

### Oxytocin

The synthetic preparation is widely used as intravenous drip infusion. The oxytocin should be started with a low dose but escalated quickly when there is no response. When the optimal response is achieved (uterine contractions sustained for about 45 seconds and numbering 2-3 contractions in 10 minutes), the administration of the particular concentration in ml/ minute is to be continued. This is called oxytocin titration technique.

- The oxytocin is not only to initiate effective uterine contractions but also to maintain the normal pattern of uterine activity till delivery and at least 30-60 minutes beyond that.
- The patient should preferably lie on one side or in semi-fowler's position to minimize venacaval compression.
- In majority of cases, a dose of less than 16 mill units per minute (2.5 units in 500 ml 5% dextrose with a drop rate of 60/min) is enough to achieve the objective. However, in an unresponsive state, higher doses may be required.

### Prostaglandins

The topical application of prostaglandin  $\alpha_2$ , intravaginally in a viscous base is an effective, safe and highly acceptable method. The usual dose is 2.5-5 mg, which may be repeated after 6-8 hours, if necessary.

## 2. Surgical Induction

The initiation of labor is attempted by surgical method and is almost exclusively done by rupture of the membranes.

## Indications

- Antepartum haemorrhage
- Chronic hydramnios
- Severe pre-eclampsia, eclampsia.
- In adjunct to medical induction

## Methods

i) Artificial rupture of the membranes

- Low rupture of the membrane (LRM)
- High rupture of the membrane (HRM)

### 3. Combined induction

- Medical induction
- Surgical induction

### 4. Others

- Foley catheter

### Artificial rupture of the membranes (ARM):

The membranes below the presenting part overlying the internal OS are ruptured to drain some amount of amniotic fluid i.e. forewaters.

## Procedure

1. Women should be encourage to keep bowel and bladder empty
2. The patient is positioned in dorsal lithotomy position
3. Surgical asepsis is to be taken. Perineal and vaginal toileting with antiseptic solution and draping are done,
4. The surgeon should wear sterile mask, gowns and gloves.
5. Two fingers are introduced into the vagina smeared with antiseptic ointment. The index finger is passed through the cervical canal beyond the internal OS.
6. The membranes are swept free from the lower segment as far as reached by the finger-stripping.
7. With one or two fingers still in the cervical canal with the palmar surface upwards, a Kocher's forceps with the blades closed, is introduced along the palmar aspect of the finger up to the membranes.
8. The blades are opened to seize the membranes and are torn by twisting movements
9. This is followed by the visible escape of amniotic fluid.
10. After the membranes are ruptured, the following are to be noted:
  - Colour of the amniotic fluid
  - Status of the cervix
  - Station of the head
  - Presence or absence of cord prolapse

- Quality of F.H.R., rate & rhythm
11. After being fully satisfied, a sterile vulval pad is placed and the patient is returned to bed. Prophylactic antibiotics are started.

### **Recording**

Record the type of induction, if ARM is done , the colour of the fluid , status of mother , amount of fluid , any complication.

### **MISOPROSTOL**

1. Use misoprostol to ripen the cervix. Place misoprostol 25 mcg to 50 mcg in the posterior fornix of the cervix as per doctor order.
2. Check the women's pulse, blood pressure and contraction and check the fetal heart rate. Record finding on a partograph.
3. Before administrating misoprostol ask women to empty the bladder.
4. Administer 25 mcg misoprostol in the posterior fornix of the vagina. Repeat after 6 hours, if required.
5. If there is no response after 2 doses of 25 mcg, increase to 50 mcg every six 6 hours.
6. Do not use more than 50 mcg at a time and do not exceed four doses (200 mcg)
7. Let the mother lie down in the left lateral position
8. Monitor FHS and contraction every 30 minutes

### **CARE DURING INDUCTION OF OXYTOCIN**

1. Monitor the women's pulse, blood pressure and contraction and check the fetal heart rate.
2. Review the indications
3. Ensure that the women in on her left side
4. Record the rate of infusion of oxytocin ,duration and frequency of contraction and fetal heart rate every 30 minutes in partograph.
5. Listen FHS every 30 minutes always immediately after a contraction.
6. Infuse oxytocin 2.5 units in 500 ml of RL at 10 drops/min for multi and 5 units in 500 ml of R/L at 10 drops /min for primi.
7. Increase the infusion rate by 10 drops per minute every 30 minutes until a good contraction ( 3-4 contractions in 10 minutes, each lasting more than 40 seconds) pattern is established but not more than 60 drops.
8. If there are in a good contraction pattern established (3-4 contractions in 10 minutes, each lasting more than 40 seconds), maintain the same rate until delivery.
9. If there are more than four contractions in 10 minutes, or if any contraction lasts longer than 60 seconds, stop the infusion and manage hyper stimulation.
  - Discontinue oxytocin infusion immediately.
  - Relax the uterus using tocolytics. Terbutaline 250 mcg IV slowly over 5 minutes or salbutamol 10 mg in 1l in fluid (Normal saline or RL ) at 10 drops per minute.
  - Place the mother in left lateral position
  - Monitor FHS

- Give oxygen to the women
  - Inform the doctor on duty
10. Women receiving oxytocin should never be left alone.
11. Be sure that induction is indicated, as failed induction is usually followed by caesarean section.

## 5. PARTOGRAPH

### **Definition:**

Partograph graphic recording of progress of labour and condition of the mother and the fetus. It has been used to detect labour that is not progressing normally, to indicate when augmentation of labour is appropriate and to recognize cephalopelvic disproportion long before labour becomes obstructed.

### **Purpose:**

- To record the observations accurately regarding the progress of labour.
- To identify the difference between latent and active phase of labour.
- To recognize any deviation from the normal labour.
- To monitor the progress of labor, recognize the need for action at the appropriate time and decide on timely referral.

### **Procedure:**

A partograph is used to record all observations made on a woman in labor. Zero time for spontaneous labor is the time of admission and that for induced labor is the time of induction. It is a sigmoid curve and the first stage of labor has got two phases, a latent phase and an active phase. The active phase has got 3 components.

1. Acceleration phase with cervical dilatation of 3-4 cm.
2. Phase of maximum slope of 4-9 cm dilatation.
3. Phase of deceleration of 9-10 cm dilatation.

In primigravidae, the latent phase is often long (about 8 hours) during which effacement occurs; the cervical dilatation averaging only 0.35 cm/hour. In multigravidae, the latent phase is short (about 4 hours) and effacement and dilatation occur simultaneously. Dilatation of cervix at the rate of 1cm per hour in primigravidae and 1.5 cm in multigravidae beyond 3 cm dilatation is considered satisfactory.

### **Observations charted on the partograph:**

Observations and recordings will be explained in the following sequence

#### **1. The progress of labor**

- Cervical dilatation in cms



- Uterine contractions Frequency per 10 minutes, duration, type of contractions (mild, moderate or strong/severe)
- Membranes and liquor

## **2. The fetal condition**

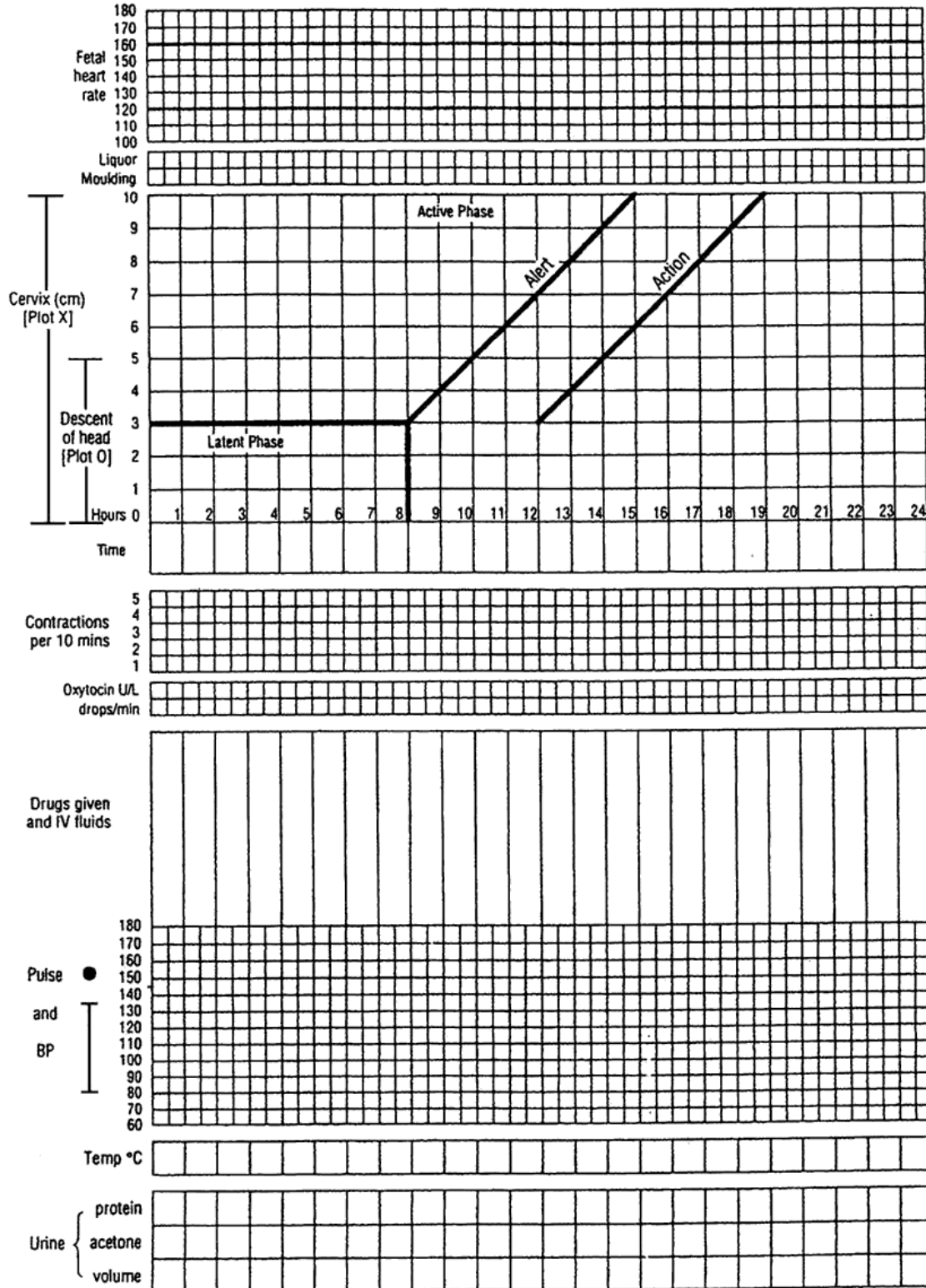
- Foetal heart rate and rhythm
- Moulding of the fetal skull
- Descent of fetal head-Abdominal palpation of fifth of head felt above the pelvic brim.

## **3. The maternal condition**

- Pulse, blood pressure and temperature Urine protein, acetone)
- Urine (volume, protein, acetone)
- Drugs and IV fluids
- Oxytocin regimen

# PARTOGRAPH

Name \_\_\_\_\_ Gravida \_\_\_\_\_ Para \_\_\_\_\_ Hospital no. \_\_\_\_\_  
 Date of admission \_\_\_\_\_ Time of admission \_\_\_\_\_ Ruptured membranes \_\_\_\_\_ hours \_\_\_\_\_



WHO 93503

## **The progress of labor:**

### **1. Cervical dilatation**

- The rate of cervical dilatation changes from the latent to the active phase of labor.
- The latent phase is from 0-2 cm with a gradual shortening of the cervix (slow period of cervical dilatation).
- The active phase is from 3 cm to 10 cm (faster period of full cervical dilatation).

In the center of the partograph is a graph. Along the left side are numbers 0-10 against squares. Each square represents 1 cm dilatation. Along the bottom are numbers 0-24 and each square represents 1 hour of the labor on the partograph, immediately below the fetal heart rate recordings.

This observation is made at every per vaginal examination.

### **Moulding of the fetal skull bones:**

Moulding is an important indication of how adequately the fetal head can accommodate through the pelvis.

There are 4 different ways to record the moulding on the partograph.

1. If bones are separated and the sutures can be felt easily, record as the letter."0"
2. If bones are just touching each other, record as +
3. If bones are overlapping, record as ++
4. If bones are overlapping severely, record as +++

### **The maternal condition:**

All the recordings for the maternal condition are entered at the foot of the partograph, below the recording of uterine contractions.

#### **1. Pulse, blood pressure and temperature**

- Pulse- every half hour.
- Blood pressure - once every 1 hour, or more frequently, if indicated.
- Temperature - once every 4 hours, or more frequently, if indicated.

#### **2. Urine:** Volume, protein and acetone

- Check for protein or acetone in the urine .
- Measure urine volume.

**3. Drugs and IV fluids:** These are charted in the appropriate column just below the area for oxytocin regime.

**4. Oxytocin regime:** There is a separate area for recording oxytocin titration just below the column for contractions. All entries are recorded in relation to the time at which the observations are made.

### **Descent of the fetal head:**

This is assessed by abdominal examination before doing vaginal examination.

Descent of the fetal head is measured in number of fingers that can still cover the head when palpated on external examination.

Descent of head recorded as a circle (o) at every four hourly.

- A head that is entirely above the symphysis pubis is five-fifths (5/5) palpable.
- A head that is entirely below the symphysis pubis or sinciput is at the level of symphysis pubis is zero-fifth (0/5) palpable
- A head accommodates two fingers above the symphysis is two-fifths (2/5)

### **Uterine contraction:**

In normal labour contractions usually become, more frequent and last longer as labour progresses. Record strength and frequency of uterine contraction every half hourly.

Duration of the contraction is from the time the contraction is first felt abdominally to time when the contraction passes off, and is measured in seconds.

Palpate the number of contractions in 10 minutes and their duration in second.

Shadow the duration of contraction as given below:

- Use dots to fill in the squares for mild contractions lasting less than 20 seconds.
- Use diagonal lines to fill in the squares for moderate contractions lasting 20 to 40 seconds.
- Use solid color to fill in the squares for strong contractions lasting longer than 40 seconds.

Frequency of contraction: It is time of the interval from the beginning of one contraction to beginning of the next contraction.

The frequency, duration and intensity of uterine contraction can be estimated by palpation.

### **The fetal condition:**

#### **1. Fetal heart rate**

- Observing the fetal heart rate is a safe and reliable clinical way of knowing the fetal well being. The best time to listen to the fetal heart is just after the contraction has passed its strongest phase. Listen to the fetal heart for 1 minute with the woman in the left lateral position if possible. The foetal heart rate is recorded at the top of the partograph.
- It is recorded every half hour and each square represents one half hour. The lines for 120 and 160 are the normal limits of the normal fetal heart rate.
- If the rate is > 160 beats / minute (tachycardia) and <120 beats / minute (bradycardia) it may indicate fetal distress.
- A heart rate of 100 or lower indicates very severe distress and action should be taken immediately

#### **2. Membranes and liquor**

The state of the liquor can assist in assessing the fetal condition. There are 4 different ways to record the state.

1. If the membranes are intact (Record the letter I for intact)
2. If the membranes are ruptured and liquor is clear. (Record as the letter "C" for clear)
3. If the membranes are ruptured and liquor is meconium stained. (Record as the letter "M" for meconium)

4. If the membranes are ruptured and liquor is absent .( Record as the letter "A" for absent)

### **Abnormal progress of labor**

#### **1. Prolonged latent phase**

If a woman is admitted in labor in the latent phase (less than 3 cm dilated) and remains in the latent phase for the next 8 hours, progress is abnormal and further action must be taken.

#### **2. Prolonged active phase**

##### **Moving to the right of the alert line:**

In the active phase of labor, plotting of cervical dilatation will normally remain on, or to the left of the alert line. But some will move to the right of the alert line and this warns that labor may be prolonged. If it reaches action line i.e. beyond alert line, action to deliver fetus immediately should be taken.

When the dilatation moves to the right of the alert line and if adequate facilities are not available to deal with obstetric emergencies, the woman must be transferred to a hospital unless she is nearing delivery.

**At the action line:** The action line is 4 hours to the right of the alert line. If a woman's labor reaches this line, a decision must be made about the cause of the slow progress, and appropriate action must be taken.

## **6. CONDUCTION OF NORMAL VAGINAL DELIVERY**

### **Normal labour:**

It is defined as one in which the fetus presents by the vertex, labour start spontaneously at term, and terminates naturally without artificial aid and without complications to mother and baby. Normal labour is called when it is fulfilling the following criteria :

- Spontaneous in onset and at term
- With vertex presentation
- Without undue prolongation
- Natural termination with minimal aid
- Without having any complications affecting health of the mother and/or baby.

### **Equipment for delivery**

#### **Delivery set contains:**

- Sponge holder or forceps- 1
- Plain artery forceps- 2
- Cord scissor- 1
- Galipot- 1

- Bowl- 1
- Gauze pieces and cotton balls (Sterile)
- Perineal pads
- Sterile cloths: 4
  - Perineal sheet-2
  - Baby wrapper-2
- Sterile gloves and gown for nurses conducting delivery
- Antiseptic solution or boiled water.

### **Equipment needed for baby**

- Resuscitation with overhead radiant heater (switched on) and light, piped oxygen, manometer and suction.
- Infant laryngoscope, spare batteries and bulb.
- Neonatal endo-tracheal tube in different sizes- 2.5, 3.0 and 3.5 mm size and connector
- Neonatal airways sizes 0,00,000
- Mucus extractor
- Suction catheter sizes 6,8 and 10 FG
- Newborn size, self -inflating resuscitation bag
- Newborn size mask 0 size for small baby i.e. less than 2.5 kg at birth or born before 37 weeks gestational age and size 1 for a normal size baby. (mask should be soft and circular)
- Syringe 2cc and 5cc and assorted needles
- Baby clothing (Bhoto, topi, napkin, wrapper and blanket)

### **For midwives:**

- Mask, gown, sterile gloves, plastic apron

### **Others**

- Boots and eye goggles
- Sterile water/boilwater
- Fetoscope
- Sphygmomanometer and stethoscope
- Baby identification card
- Light source

### **Procedure**

1. Greeting or warm welcome to mothers.
2. Prepare the necessary equipment.
3. Encourage the mother to adopt the position of choice and continue spontaneous bearing down effort.
4. Tell the women what is going to be done listen to her and respond attentively to her questions and concern.

5. Provide continual emotional support and reassurances as feasible.
  6. Monitor the contraction and FHS regularly.
  7. Put on personal protective barriers.
- **Conducting the delivery.**
    - Wash hand thoroughly with soap and water and dry with a clean clothes or air dry.
    - Open the delivery set and put the sterile gloves.
    - Clean the women's perineum with antiseptic solution.
    - Catheterize the mother if necessary.
    - Place the perineal sheet and abdominal sheet.
    - Encourage mother to push with each uterine contraction.
    - Decides whether episiotomy is necessary or not.
    - Ask the women to pant or give only small pushes with contraction as the baby's head is born.
    - As the pressure of the head thins out the perineum control the birth of the head with the fingers of one hand.
    - Use the other hand to support the perineum by using a sterile vulval pad and allow the head to extend slowly and be born spontaneously.
    - Wipe the mucous and blood from the baby's mouth, nose, and eyes, with clean gauze.
    - Feel around the baby's neck to ensure the umbilical cord is around the neck or not.
    - Allows the baby's head to turn spontaneously.
    - After the head turns place a hand on each side of the baby's head over the ears and apply slow, gentle pressure downward until the anterior shoulder slips under the pubic bone.
    - When the axillaries crease is seen, guide the head upward towards the mother's abdomen as the posterior shoulder is born over the perineum.
    - Move the topmost hand from the head to support the rest of the baby's body as it slides out.
    - Place the baby on the mother's abdomen and notes the time of birth.
    - Thoroughly dries the baby and covers with a clean, dry cloth. Assess the APGAR scores.

**If the baby is breathing normally**, clamp and cut the umbilical cord one to three minutes after birth of the baby.

    - Ensure the baby is kept warm and skin to skin contact on the mother's chest and cover the bay with a cloth or blanket, including the head.
    - Palpate the mother's abdomen to rule out the pressure of additional baby and proceed with **active management of third stage**.
      - ✓ Give oxytocin 10 units IM.
      - ✓ Clamp the cord close to the perineum and hold the clamped cord and the end of the clamp in one hand and apply CCT methods for placenta delivery.
      - ✓ Massage the uterus and teach mother continuous every 15 minutes till 2 hour

- Examine the placenta and membranes; make sure that mother's vitals have been taken.
- Inspect the lower vagina and perineum for tear and repair if necessary .Repair episiotomy /tear if one have happened.
- Swabs vulva areas, put sterile pad, remove soiled clothes.
- Make the women comfortable.
- Decontaminates and clean all equipment and replace it in proper place.
- Washes hand thoroughly with soap and water and dry with clean towel.
- Records all information in patients chart and record book.

## **7. EPISIOTOMY**

### **Definition:**

An episiotomy is a surgical incision into the perineum to enlarge the vaginal orifice for obstetrical purpose.

### **Purpose**

- To minimize over stretching perineal muscles as in the case of a very large baby.
- To enlarge vaginal introitus.
- To speed up delivery in fetal distress in second stage of labour.
- To minimize the risk of intracranial damage during pre-term and breech delivery.
- To an assisted delivery such as forceps or ventouse extraction.
- To prevent a recurrence of previous third or fourth degree tears.
- To decrease the length of second stage for women who are ill with heart disease and eclampsia etc.

### **Equipment**

- Perineal sheet-1
- Sponge holder-1
- Small bowl-1
- Episiotomy scissor - 1
- Suture cutting scissor -1
- Needle holder -1
- Tooth dissecting forceps-1
- Chromic catgut 2-0
- Injection xylocain 2% or 1% or 0.5%
- 5 cc or 10 cc disposable syringe with needle
- Gauze pieces and cotton balls 5-6
- Perineal pads -2
- Sterile water or antiseptic solution.
- For staff (plastic apron, mask, cap and high level disinfected or sterile gloves.)



## Procedure

1. Prepare the necessary equipment
2. Tell the woman what is going to be done and encourage her to ask questions.
3. Make sure that the woman has no allergies to lignocaine or related drugs.
4. Provide emotional support and reassurance.
5. Place the woman in a dorsal position with legs flexed.
6. Put high level disinfected or sterile surgical gloves on both hands.
7. Clean the perineum with antiseptic solution e.g. betadine solution.
8. Draw 10 ml of 0.5% lignocaine into a 10 ml syringe
9. Place two fingers (index and middle) into vagina along proposed incision line .
10. Explain the woman about injection.
11. Insert needle beneath skin for 4-5 cm following same line.
12. Draw back the plunger of syringe to make sure that needle is not in a blood vessel.
  - If blood is returned in syringe, remove needle, recheck position carefully and try again.
  - If no blood is withdrawn, continue as follows.
13. Inject lignocaine into vaginal mucosa, beneath skin of perineum and deeply into perineal muscle.
14. Wait two minutes and then pinch incision site with forceps
15. If the woman feel the pinch, wait two more minute and then retest.
16. Wait to perform episiotomy until perineum is thinned out: 3-4 cm of the baby's head is visible during a contraction.
17. Place two fingers (index and middle) between the baby's head and the perineum
  - a. (posterior vaginal wall).
18. Insert open blade of scissors between perineum and two fingers:
  - Cut the perineum about 3-4 cm in a medio-lateral direction. Deliberate cut should be made starting from the centre of the fourchett extending laterally either to the right or to the left. It is directed diagonally in a straight line which runs about 2.5cm away from the anus.
  - Cut 2-3 cm up middle of posterior vagina.
19. If birth of head does not follow immediately, apply pressure to episiotomy site between contraction using a piece of gauze to minimize bleeding
20. Control the baby's head and shoulders to avoid extension of the episiotomy.
21. Post procedure examine woman carefully for tears of the vagina, perineum, and cervix or extension of the episiotomy incision and repair episiotomy.

## 8. PERINEAL REPAIR

**Definition:** The suturing of the episiotomy or tear after the complete removal of the placenta, membrane.

### **Purpose**

- To bring the tissues close together.
- To insure homeostasis
- Suture without tension

### **Types of repairing episiotomies or perineal tears are;**

- Interrupted suturing
- Continuous suturing

### **The repair is to be done in the following order**

- Vaginal mucosa and submucosal tissue.
- Perineal muscles
- Skin and subcutaneous tissues.

### **Procedure**

1. Ask the woman to position her buttocks toward lower end of bed or table (use a. stirrups if available).
2. Ask an assistance to direct a strong light onto the woman's perineum.
3. Drape the perineum properly with perineal sheet.
4. Apply antiseptic solution to the area around the episiotomy.
5. If the episiotomy is extended through the anal sphincter or rectal mucosa, manage as third or fourth degree tears. Inform the doctor immediately.
6. Place the needle in the needle holder at a 90° angle. Clamp firmly, and lock.
7. Repair the vaginal mucosa.
8. Using 2-0 suture
  - Start the repair about 1 cm above the apex (top) of the episiotomy. Continue the suture to the level of the vaginal opening.
  - At the opening of the vagina, bring together the cut edges of the vaginal opening.
  - Bring the needle under the vaginal opening and out through the incision and tie.
9. Trim the free end suture at approximately 1 cm.
10. Close the perineal muscle using interrupted 2-0 sutures from the top of the perineal incision downward.
11. Close the skin using interrupted (or subcuticular) 2-0 sutures to bring skin edges together.

12. Apply antiseptic solution to the sutured area.
13. Clean the perineal area with clean water and apply the clean perineal pad.
14. Insert your smallest finger inside the rectal sphincter. Feel for any stitches in rectum.  
Gentle lift the finger and identify the sphincter. Feel for the tone or tightness of the sphincter.
15. If it has it must be removed and re-sutured.
16. Remove the wet clothes and change the clean clothes.
17. Make the woman comfortable.
18. Place instruments in 0.5% chlorine solution for 10 minutes for decontamination.
19. Clean and disinfect all articles and return them to the proper place.
20. Place needle and syringe in a puncture proof container.
21. Remove gloves in 0.5% chlorine solution for 10 minutes to decontaminate.
22. Wash hand thoroughly with soap and water and dry with clean, dry cloth or air-dry.
23. Record the procedure accurately (type of suture, number of suture, date and time of suture, condition of the patient).

## **9. PLACENTA EXAMINATION**

### **Definition:**

Examination of placenta, membranes and cord examination of placenta and membranes should be performed to determine its normal and abnormal features.

### **Purpose:**

- To identify any abnormality of placenta and membranes.
- To check for retro placental clot.
- To check for completeness of cotyledons and membranes.
- To check weight of placenta and measure cord length.
- To prevent post partum hemorrhage and infection.

### **Equipments:**

- Large Kidney tray
- Placenta weighting scale
- Measuring tape
- Gloves

### **Procedure:**

1. Put on clean gloves.
2. Hold the placenta on the palm of the hands (palms should be kept flat) with maternal side facing upward.

3. Spread maternal surface of placenta over the two hands then check whether all lobules are present and fit together. The surface is arranged in about 20 lobes which are separated by sulci (furrows).
4. Hold the umbilical cord with one hand and allow the placenta and membrane to hang down. Check that the membranes are complete
5. The amnion should be peeled from the chorion right up to the umbilical cord, which allows the chorion to be fully viewed.
6. Insert the right hands between two membranes, with fingers spread out and inspect for completeness and differentiate between two membranes.
7. Inspect cord for number of blood vessels (2 arteries and one vein), length (average
8. is about 50 cm) and cord insertion.
9. Weigh the placenta.
10. Measure the blood loss.
11. Dispose the placenta membrane in proper place.
12. Remove gloves and wash hand with soap and water.
13. Replace the articles
14. Record all findings in delivery sheet, and report to doctor if there are any abnormal

**Nursing Alert:**

1. Placenta should be examined by person conducting delivery.
2. Weigh retro placental clots separately if present and record

## **10. TRANSFER OF PATIENT FROM LABOUR ROOM TO WARD**

**Definition**

A process of shifting patient from labour room to ward after delivery.

**Purpose**

- For continuous care and observation.

**Procedure**

1. Find out a availability of empty beds according to unit.
2. Explain the patient and relatives about transfer and handover belongings.
3. Check the following before transferring :
  - Transfer order on doctors order sheet
  - Postnatal prescription
  - Vital signs
  - PV Bleeding
  - Episiotomy site if present
  - Whether mother has voided or not
  - If voided, fundal height checked and marked in the TPR sheet

- Condition of the baby , feeding , cord bleeding and completion of baby card
- Completion of labour folder and chart

Transfer mother and baby together if baby is with mother

4. Document time, condition of mother and baby, transferring notes in nurses record and folder at the time of transfer.
5. Write name of patient, hospital number, sex of baby and ward transferred in discharge book.
6. Report any deviation from normal immediately to 2<sup>nd</sup> on call in labour room.
7. The nurse receiving mother in ward should check for the following:
  - a. Name of patient
  - b. Tag of baby
  - c. Sex of baby
  - d. Condition of both mother and baby
  - e. Prescription and completion of charting
  - f. Postnatal order.

## **11. POSTNATAL EXAMINATION OF MOTHER**

### **Definition:**

- It is a systematic process of examination of mother after third stage of labour until six weeks of puerperium.

### **Purpose:**

- To observe the general condition of the mother.
- To detect and treat life threatening complications of mother and newborn.
- To establish breastfeeding to the baby and prevent breast complications.
- To improve mental and physical health of mother.
- To provide necessary health teaching to mother and family.

### **Equipments:**

- Sphygmomanometer
- Thermometer
- TPR tray
- Screen
- Measuring tape
- Clean gloves
- Kidney tray
- Weight machine
- Clean swabs and gauze piece

- Torch
- Draw sheet

**Procedure:**

1. Prepare and arrange the necessary equipment on the right side of examiner.
2. Explain about the procedure and its purpose.
3. Screen the patient to maintain privacy.
4. Collect detail information about mother and baby.
5. Ask the mother to empty her bladder.
6. Wash the hands with soap and water.
7. Inspect the mother's general appearance (happy or sad mood, sick looking, tired, general behaviour and attitude toward the baby)
8. Take the mother's vital signs;
  - a) **Temperature:** Elevation of temperature after delivery can occur as a result of exertion or dehydration.
  - b) **Pulse:** Pulse rate drops slightly because of decreased cardiac effort. Any rise of pulse may indicate excessive bleeding.
  - c) **Blood pressure:** Blood pressure is monitored routinely and as per need if there has been any history of bleeding, hypertension during pregnancy.
9. Auscultate the chest and heart sound as needed.
10. Assist the mother on to the examination table or bed and place a pillow under her head and upper shoulder.
11. Ask the mother about breastfeeding e.g, position, frequency of needs, attachment on suckling and baby's satisfaction with feedings.
12. Examine the breast for size, symmetry and shape and palpate both breast for engorgement, redness or nodules. The areola and nipple should be carefully examined for cracked, retracted or flat.
13. Inspect the abdomen for distention, fundus and full bladder.
14. Palpate abdomen for distention, pain or any masses.
15. Examine abdomen for involution of uterus (measure fundal height) and firmness of the uterus.
  - ❖ **Technique for taking fundal height**
    - The bladder should be empty.
    - The mother should be kept in dorsal recumbent or supine position.
    - Palpate abdomen from symphysis pubis and feel the uterus.
    - Press the abdomen just above the uterine fundus by ulnar side of the hand.
    - Measure the length from symphysis pubis to the fundus of uterus and record the fundal height.
16. Examine the lower extremities for signs and symptoms of thrombophlebitis, DVT and edema.
17. Put on new or clean gloves.

18. Examine the vulva and perineum for suture and vulval swelling and lochia to note the colour, amount, consistency and smell.
19. Assess any minor or major discomfort.
20. Remove the gloves and wash hand thoroughly.
21. Ask the mother about diet and sleeping pattern.
22. Ask the mother if she has any additional question.
23. Educate the mother about personal hygiene, nutrition, rest, family planning, immunization, baby care and exclusive breastfeeding for up to 6 months.
24. Send a blood test for hemoglobin if a clinical sign of anaemia is presented.
25. After procedure, the equipment must be clean and replace it in their respective place.
26. Record all relevant findings accurately and report any abnormality to the senior or doctor.

**Remembering the postpartum examination, check eight letters spell (BUBBLEHR)**

<b>B</b>	<b>:</b>	<b>Breast</b>
<b>U</b>	<b>:</b>	<b>Uterus</b>
<b>B</b>	<b>:</b>	<b>Bladder</b>
<b>B</b>	<b>:</b>	<b>Bowel</b>
<b>L</b>	<b>:</b>	<b>Lochia</b>
<b>E</b>	<b>:</b>	<b>Episiotomy</b>
<b>H</b>	<b>:</b>	<b>Homans sign</b>
<b>E</b>	<b>:</b>	<b>Emotional reaction</b>

## 12. PERINEAL CARE

### Definition:

Cleaning the patient's genitalia and surrounding skin using antiseptic solution during or after delivery, abortion, after an operation of the birth canal or perineum.

### Purposes

- To clean the perineal area
- To reduce the chances of infection of episiotomy wound
- To stimulate circulation
- To reduce body odors and improve self- image
- To improve the feeling of well being

- To observe the amount, color, odour and consistency of the lochia

### **Equipment**

- Screen
- A trolley containing
  - Pericare set (Kidney tray- 1, sponge holder- 1, gauze pieces)
  - Cheatle forcep with jar-1
  - Sterile drum containing sterile cotton and gauzes
  - Betadine solution
  - Measuring tape
  - Rubber sheet
  - Sterile gloves
  - Sanitary pad and clean panty
  - Kidney tray
  - Large sheet
  - Peri light (if procedure is done at bedside)
  - Clean gloves
  - Dustbin

### **Procedure**

1. Explain the procedure and purpose to the patient.
2. Assemble the articles to the bedside or in the treatment room
3. Ask the patient to empty her bowel and bladder and wash the perineal area before coming for the perineal care. If the woman is unable to walk, provide a bedpan.
4. Screen the bed or close the door as appropriate.
5. Place the patient in dorsal recumbent position with knees bent and drape the patient.
6. Place the mackintosh under the buttocks.
7. Wash hand and wear clean gloves
8. Uncover the perineal area
9. Remove the pad and observe the lochia for type, amount, color and odour.
10. Discard soiled perineal pad in kidney tray
11. Examine the perineum and genitalia for the condition of stitches and swelling.
12. Massage the uterus with left hand and expel any clots.
13. Wash hand with soap and water and dry.
14. Open the sterile set and arrange articles with cheatle forcep and pour antiseptic solution (betadine) in the kidney tray.
15. Put on sterile gloves.
16. Take the swab with sponge holder, dip in betadine and squeeze excess solution with thumb forcep into the kidney tray.
17. With the swab, clean from urethra towards anus. Clean the area from the midline outward in the following order until clean and discard the swab after each stroke. Strokes are to be in the following order:



- Separate the vestibule with non-dominant hand and clean vestibule starting from clitoris to fourchette.
  - Inside the labia minora downward farther side then nearer side.
  - Take off the non-dominant hand
  - Labia majora downward farthest side then nearer side.
  - Clean the episiotomy wound from center outward and outside of episiotomy both sides.
  - Clean the thigh of far side first and then near side. Clean inward to outward.
18. Dry in same manner as described for wet.
  19. Clean the anus
  20. Place all the used swab in kidney tray.
  21. Place sanitary pad and remove the pan if kept.
  22. Dry buttock area by turning mother on side.
  23. Tic the pad with the underpants to hold the pad in place.
  24. Remove the mackintosh and place the mother in a comfortable position
  25. If needed provide perineal light for 10 minutes. Light should be kept 18 inches away from the perineal area. The heat should be comfortable to bear.
  26. Assess the level of the uterus. Place the left hand in the abdomen on the umbilical region and palpate gently until the fundus is located.
  27. Measure the height of fundus by measuring tape.
  28. Explain the mother about the condition of stitch, lochia ,etc
  29. Advice the mother about perineal hygiene and use clean pad.
  30. Clean, decontaminate and replace the equipment.
  31. Removes gloves and wash your hand with soap and water and dry.
  32. Record and report of fundus height, amount , color of lochia, stitches, and appearance of the area. If any abnormal finding should be reported to the senior or on duty officer immediately.

### **13. CAESAREAN SECTION**

#### **Definition:**

Caesarean section is the delivery of the baby and the placenta through an incision in the abdominal wall and an incision in the uterine wall after 28 weeks of gestation. It can be either planned or elective.

#### **A. Preoperative care:**

- It is a period of psychological and physical preparation of a woman before caesarean section.

#### **Equipments:**

A trolley containing;

- Infusion and injection tray with pre-medication
- Kidney tray
- Mackintosh
- Cap, gown for woman
- Shaving set (if necessary)
- Betadine solution
- Foley catheter according to order

**Procedure:**

1. Explain the reason for caesarean section to the patient and patient`s family.
2. Take the written consent.
3. Assist the woman and her family to prepare emotionally and psychologically for the procedure
4. Estimation of the Hb, grouping, cross- match must be done and keep blood ready.
5. Give a soap water enema or ezivac enema as per doctor`s instruction.
6. Shave or trim and clean the anterior abdominal wall and the mons pubis with soap and water.
7. Remove all jewellery and make sure that the patient hand over all her jewellery to her relatives.
8. Monitor and record vital signs.
9. Fetal heart rate should continue to be assessed until the operation begins.
10. Give preoperative antibiotic according to doctor`s instruction in cases of premature rupture of membranes, prolonged labour and trial or failed forceps.
11. Give preoperative perinorm and ranitidine if it is an emergency section, to reduce the risk of gastric content aspiration.
12. Change into a loose and clean cotton gown.
13. Cover hair with a cap.
14. Start intravenous infusion (Ringer`s lactate or Normal saline) at rate appropriate for the woman`s condition.
15. Insert a Foley`s catheter to keep bladder empty and monitor urine output.
16. Attach all the investigation and report to the patient`s chart.
17. Recheck the following : consent, laboratory investigations, jewellery removed, surgical preparation done, vital signs taken, premedication given on time, patient is on operation room cloth.
18. Send woman to the operation room and handover.

**B. Postoperative care**

**Definition:**

Postoperative care is from the time when the patient leaves the operating theatre, to the time when the patient leaves the hospital.

**Equipments required in post operative period:**

- Post operative bed with side rails. B.P instrument with stethoscope

- Airway
- Tongue depressor
- Oxygen cylinder set
- Suction machine with suction catheter set
- IV stand Torchlight
- Emergency drug

## **Procedure**

### **In recovery room:**

1. Place woman in the recovery room.
2. Proper positioning of the woman on her side with her head.
3. Suctioning secretion from the throat as and when necessary.
4. Assess the woman's condition:
  - Check vital signs every 15 minutes during the first hour or until stable, then every 30 minutes for the next hour.
  - Assess the level of consciousness every 15 minutes until the woman is alert.
  - Assess the fundus and the amount of lochia.
  - Assess the condition of the incision dressing.
5. Preventing the patient from falling out of bed by the use of bedrails.
6. Maintain intake and output chart.
7. Medication according to doctor's order. Note the amount, route, and time.
8. Blood transfuse if necessary.
9. Breast-feeding can be initiated if the mother feels like trying.
10. Maintaining record of observation made and the nursing care and treatment performed.
11. Woman transferred to the post operative unit after 1 to 2 hours, once her condition is stable and the effect of anesthesia have worn off (e.g. alert, oriented, moving all extremities).

### **Care In the first 24 hours:**

- Receive and transfer woman in warm comfortable bed without touching the operated site.
- Position the woman should lie with face turned to one side.
- Check vital signs every 30 minutes but the frequency reduced to every 2-4 hours depending upon the improvement in the condition of woman.
- Watch the dressing for the soakage.
- Watch the bleeding per vagina.
- Give 2 liters of IV fluids as an average in first 24 hours (according to doctor order). Record type of fluid, rate and amount in a given period of time.
- Maintain intake and output chart. Give analgesics as prescribed (at least for the first 24 hours).
- Give antibiotics according to the doctor's instruction.
- Transfuse blood if necessary according to doctor's instruction.

- If the urine is clear, remove the catheter 8 hours after surgery or after the first postoperative night (as per doctor's order).
- Ambulation on the first postoperative day.
- Encourage deep breathing and foot and leg exercise and mobilize as soon as possible, usually within 24 hours.
- Help to the woman for breast-feeding.
- Record and report.

### **Care after the first 24 hours:**

- Oral fluid, usually warm plain water is given 24 hours after the operation followed by tea, fruit juices, and clear soup. Follow with soft biscuits, and semi solids when the woman is passing gas.
- Intravenous fluids should be continued until she is taking liquids well.
- Explain postoperative procedure to the woman.
- Help the woman to change the position.
- Encourage bladder and bowel movement.
- Ambulation, in the beginning mother may need support. Later on she could walk slowly by herself.
- Encourage deep breathing exercise.
- Watch for wound sores, if soaked change the dressing using sterile technique.
- Daily care includes perineal care, and routine hygiene care.
- Encourage mother to breast-feed her baby.
- Assess the woman's vital signs, fundus and lochia.
- Advice at the time of discharge in following:
  - Explain to the patient why the operation was done.
  - Need for hospital care during subsequent pregnancy and delivery.
  - Avoid heavy or hard work for 3-4 months.
  - Use suitable contraceptive after 6 weeks of delivery.
  - Checkup according to doctor's instruction (usually 7 days after discharge and 6 weeks the date of delivery).
  - Come for follow up if any wound infection pain and other complications arise.
  - Explain the immunization schedule for the baby.
  - Give information about diet, exercise, activity, breast care, sexual activity, medication, infant care, self-care and signs of complications.

## **14. ADMINISTRATION OF MAGNESIUM SULPHATE ON SEVERE PRE-ECLAMPSIA AND ECLAMPSIA**

### **Action/ Pharmacodynamics Of Magnesium Sulphate:**

- Magnesium Sulphate reduces motor end plate sensitivity to acetylcholine and thereby reduces neuromuscular irritability. Magnesium blocks neural calcium influx also. It induces vasodilation, dilates uterine arteries, increases production of endothelial prostacyclin and inhibits platelets activation. It has no detrimental effect on neonate within therapeutic level

### **Purpose:**

- Prevention and control of seizures in pre- eclampsia and eclampsia.

### **Equipment:**

A tray containing

- Injection Mgso<sub>4</sub>
- 5 ml,10ml ,20 ml syringe
- 2% xylocaine
- Inj. Calcium gluconate
- Distil water
- Knee hammer
- Vital tray

### **PROCEDURE:**

#### **Administrating Loading Dose of Magnesium Sulphate**

1. Wash hand thoroughly with soap and water and dry with a clean, dry cloth or air dry.
2. Tell the woman that she may experience a feeling of warmth when magnesium Sulphate is given.
3. Draw up 4 grams of Magnesium Sulphate 50% and dissolve with 12ml distilled water to make 20% solution (20 ml)
4. Give by IV injection SLOWLY over 5 minutes.
5. Take 10ml syringe and draw up 2% lignocaine 1 ml and 5gm of Magnesium Sulphate 50% solution.
6. Take another 10ml syringe and draw up 2% lignocaine 1 ml and 5 gm of Sulphate 50% solution.
7. Give 5/5 grams by DEEP IM injection in each buttock.
8. Place needle and syringe in puncture proof container.
9. Wash hand thoroughly with soap and water and dry with a clean, dry cloth or air dry.
10. If convulsion recur AFTER 15 minutes:

- Draw up 2grams of Magnesium Sulphate 50% solution (4 ml).
- Give IV injection SLOWLY over 5 minutes.

#### **Adminstrating maintenance Dose of Magnesium Sulphate**

1. Take another 10 ml syringe and draw up 2% Lignocaine 1 ml and 5 gm Magnesium Sulphate 50% solution.
  2. Give 5 grams of Magnesium Sulphate 50% solution, together with 1 ml o 2% lignocaine in the same syringe, by DEEP IM injection into alternate buttocks (every 4 hours).
    - Continue Magnesium Sulphate for 24 hours following birth or the most recent convulsion which occurs last.
- Before repeat administration check that:
- Respiratory rate is at least 16 per minutes
  - Patellar reflexes are present
  - Urinary output is at least 30 ml per hour over 4 hours

#### **WITHHOLD or DELAY drug if:**

- **Respiratory rate falls below 16 breaths per minutes**
  - **Patellar reflexes are absent**
  - **Urinary output falls below 30 ml per hour over the preceeding 4 hours**
- If respiratory arrest occurs:
- Assist ventilation
  - Give antidote **Calcium Gluconate**1 gm (10 ml of 10% solution)by IV injection. SLOWLY until respiration begins.
- Continuously Monitoring for Toxicity
- Record drug administration and findings on the woman's record.

## **15. CONDOM TEMPONADE**

**Definition:** It is one of the effective method used in the management of postpartum haemorrhage.

#### **Purpose**

- To control postpartum hemorrhage

#### **Equipment**

- **Insertion**
  - Condom- 1
  - Foley' catheter- 1
  - I/V set- 1
  - Thread (suture)- 2
  - Syringe (50cc)- 1
  - Kidney Tray-1

- Sponge Holder-1
  - Sims speculum-1
  - NS- 1
- **Removal**
- Sponge holder- 1
  - Syringe (50cc)- 1
  - Scissor- 1
  - Kidney Tray-1

## **Procedure**

### **Preparation**

1. Prepare the necessary equipment.
2. Tell the woman (and her support person) what is going to be done, listen to her and respond attentively to her questions and concerns.
3. Provide continual emotional support and reassurance, as feasible.
4. Ensure the bladder is empty, catheterize it if necessary
5. Maintain privacy
6. Put on protective barriers.

### **Insertion**

1. Wash hand and forearm thoroughly and put on high- level disinfected or sterile surgical gloves (use elbow-length gloves, if available).
2. Place condom over the Foley catheter leaving a small portion of the condom beyond the tip of catheter.
3. Using a sterile suture or a string, tie the lower end of the condom on the Foley catheter. Tie should be tight enough to prevent leakage of saline solution but should not strangulate catheter and prevent inflow of water.
4. Place a Sims speculum in the posterior vaginal wall. Hold the anterior lip of cervix with the sponge or ring forceps. Using an aseptic technique place the condom end high into uterine cavity by digital manipulation or with the aid of forceps.
5. Connect outlet of Foley catheter to I/V set connected to a saline bag or bottle of saline. Inflate condom with saline to about 300-500 ml (or to amount at which no further bleeding is observed).
6. Fold over the end of the catheter and tie with a thread or a cord clamp when desired volume is achieved and bleeding is controlled
7. Maintain in-situ for 12-24 hours if bleeding controlled and client is stable.
8. Continue uteronic infusion : 20IU oxytocin in1000ml saline solution, 60 drops/ minutes
9. Continue to monitor client closely, resuscitate and /or treat necessary
10. If bleeding is controlled within 15 minutes of initial insertion of condom tamponade abandon the procedure and seek surgical intervention immediately.

### **Deflation**

1. When no further bleeding has occurred and the client has been stable for at least 12 to 24 hours slowly deflate condom by letting out 50-100 ml of saline every hour.
2. Re –inflate to previous level if bleeding reoccurs while deflating.
3. Cord catheter while deflating.

### **Post Procedure Tasks**

- Remove gloves and discard in the container or plastic bag.
- Wash hand thoroughly
- Regular monitor vaginal bleeding, take the woman’s vital signs and make sure that the uterus firmly contracted
- Recording and reporting.

## **16. BREAST CARE**

**Definition:** Breast care is the process of cleaning the breast of mother that helps in maintaining hygiene and prevent from cross infection during feeding.

### **Purpose**

- To teach the mother about how to clean the breast and nipples.
- Prevent from breast and nipple disorder during puerperium.
- To stimulate blood circulation on the breast.
- To give health teaching about diet, personal hygiene, how to care baby etc.
- To prevent from infection

### **Equipments**

A tray containing

- Bowl of cotton swabs
- Sponge cloths
- Towel
- Kidney tray
- Small mackintosh
- One basin with luke warm water
- Jug
- Screen.
- Gauze pieces

### **Procedure**

1. Prepare all the articles
2. Explain the procedure to the woman.
3. Take articles to the bedside.
4. Make the woman sit facing towards you to facilitate comfort and care while carry out procedure.



5. Maintain privacy by screening the bed.
6. Expose the breast.
7. Examine the both breast by inspection and palpation.
8. Place the mackintosh and towel under the breasts.
9. Pour water in the breasts, first clean the far side breast from midwife.
10. Wash the breast with sponge by using lukewarm water.
11. Clean the nipples and remove all the plugs with plain cotton swabs and prevent blockage of the ducts.
12. Check for cracked nipple or engorgement of the breast.
13. If there is any engorgement, lift up the breast with one hand and grasp the areola and compress the area with deep inward movement and express the milk till the breast is soft.
14. Give cold compress to promote comfort and relieve the pain due to engorgement.
15. Dry the breast with towel and put the baby on the breast.
16. Clean the breasts with wet clothes after feeding and leave small amount of milk on nipple and dry on air to prevent cracked nipple.
17. Advice her to wear supportive brassier to prevent over stretching of the tissue.
18. Make the mother and child comfortable.
19. After cleaning them, replace all articles in their respective place.
20. Record if there are any abnormalities,

## **17. INVERTED OR FLAT NIPPLE CARE**

**Definition:** Care given to a mother with flat or inverted nipples.

### **Purpose**

- To assist the mother and baby for successful breastfeeding.

### **Equipments:**

- 10 ml disposable syringe (cut the base of the syringe at the needle end)
- Small clean bowl or glass

### **Procedure:**

1. Explain the need for breast care during breastfeeding.
2. Maintain the mother's privacy.
3. Have the mother roll her nipple between her fingers slowly to make her nipple erect

Follow the procedure to help in breastfeeding The sucking of the baby will naturally draw out the nipple. After the feeding, suction may be used to further draw out the nipple.

### **Suctioning of the nipples:**

- Take the syringe piston out and put it in the cut side.
- Place the top of the syringe over the nipple and pull the piston very slowly creating suction.

- If milk is secreted inside the syringe, put it in a sterile bowl or glass.
- Repeat the procedure

If the baby is ready to be breastfed, breastfeed the baby.

### **Points to be remembered**

- a) Do not continue suctioning if the mother complains of pain.
- b) If the nipple is cracked and bleeding there is a risk of introducing infection to the baby therefore. DO NOT perform this procedure.

## **18. ENGORGED BREAST CARE**

### **Definition:**

Breast engorgement is a condition in which the breast becomes extremely painful and tender due to fullness. The skin on the breast appears shiny. It usually occurs due to collection of milk in the breasts because of improper and inadequate breast feeding.

### **Purpose of care:**

- To prevent breast engorgement
- To reduce the discomfort caused by breast engorgement
- To prevent complications of breast engorgement

### **Procedure:**

1. Perform preliminary assessment
  - Check the extent of engorgement, size, colour and tenderness.
  - Identify the breast engorgement in the early period itself.
  - Find out the feeding habit of the baby
  - Make sure that the mother is following correct technique of breast feeding.
2. Explain to the women that breast engorgement is normal when the milk starts to come in around 2-3 days after birth, it should get better with time.
3. If the women is breastfeeding and the baby is not able to suckle, encourage the women to express milk by hand
4. **If the women is breastfeeding** and the baby is able to suckle
  - Encourage the women to breastfeed more frequently, using both breasts at each feeding.
  - Show the women how to hold the baby and help it attach.
  - Relief measures before feeding may include:
    - Apply warm compresses (5-10 minutes) to the breast just before breastfeeding or encourage the woman to take a warm shower. Gently massage the breast to allow milk to flow more easily.
    - Massage the woman's neck and back.
    - Have the woman express some milk manually before breastfeeding and wet the nipple area to help the baby latch on properly and easily.

- Breastfeed often, at least every 2-3 hours (demand feed).
- At each feed, empty the first breast before offering the other breast to the baby.
- If the breasts still feel full after a breast feed, encourage the baby to feed longer or express breast milk for a few minutes (until the breasts feel softer).
- Relief measures after feeding may include:
  - Support breasts with a breast binder or brassiere (avoid tight fitting bra) which can press on a duct and cause it to block.
  - Apply cold compress to the breasts between feedings to reduce swelling and pain.
  - Give oral analgesics as prescribed, may be taken 30 minutes before breastfeeding if prescribed.

## **19.POSTNATAL EXERCISE**

**Definition:** A series of physical exercise that are performed by the postnatal mother to bring about optimal function of all systems and prevent complications.

### **Purposes:**

- To improve the tone muscles which are stretched during pregnancy and labour specially the abdominal and perineal muscles .
- To educate the mother about correct posture and mechanics.
- To minimize the risk or puerperal venous thrombosis by promoting circulation and preventing venous stasis.
- To prevent backache , genital prolapsed and stress incontinence of urine

### **Procedure**

Teach exercise in the early postpartum period to strength the abdominal muscles and firm the waist. The exercise can be started soon after childbirth and repeated up to five times a day, at first. The number of exercises is gradually increased as the mother gains strength.

Firstly explain the procedure to the mother and maintain privacy

#### **1. Abdominal exercises:**

**a. Abdominal breathing (for strengthening the diaphragm): This exercise can be started within a few days after childbirth.**

Instruct mother to:

- Assume a supine position with knees bent.
- Inhale through the nose, keep the rib cage as stationary as possible, and allow the abdomen to expand and then contract the abdominal muscles as she exhales slowly through the mouth.

- Place one hand on the chest and one on the abdomen when inhaling. The hand on the abdomen should rise and the hand on the chest should remain stationary.
- Repeat the exercise five times

**b. Head lift (for strengthening the abdominal muscles): This exercise can be started within a few day after childbirth**

Instruct mother to:

- Lie supine with knees bent and arms out stretched at her side at first
- Then instruct her to inhale deeply at first and then exhale while lifting the heads slowly, to hold the position for 10 second and relax.
- Repeat for 10 times

**c. Head and shoulder raising (for strengthening abdominal muscles):**

Instruct mother to :

- On the 2<sup>nd</sup> postpartum day, instruct mother to :- lie flat without pillow and raise head until the chin touches the chest.
- On the 3<sup>rd</sup> postpartum day, instruct mother to :- raise both head and shoulder of the bed and lower them slowly.
- Gradually increase the number of repetitions until she is able to do this for 10 times

**d. Leg raising (this exercise can be started on the 7<sup>th</sup> postpartum day)**

Instruct mother to :

- Lie down on the floor with no pillows under the head, point toe and slowly raise one leg keeping the knee straight.
- Lower the leg slowly
- Gradually increase to 10 times each leg

**e. Pelvic tilting or rocking (will help tone and strengthening abdominal muscles and relief backache)**

Instruct mother to :

- Lie flat on the floor with knees bent
- Tightening her stomach and buttock muscles to tilt her pelvis
- Flatten the small of her back against her floor and hold for a count of 2-3 seconds.
- Increase gradually to a count of 10.
- Relax and exhale.
- Repeat 3-5 times.

**f. Leg sliding/stretches**

Instruct mother to:

- Lie on her back with one knee bent
- Keep her back flat while sliding the heel of the straight leg up and down the surface on which she is lying.

- Work only within the range where she can keep her back flat.
- Repeat 3-5 times with each leg

#### **g. Abdominal tightening**

Instruct mother to :

- Sit comfortably or kneel on all fours .
- Breathe in and out then pull in the lower part of the abdomen below the umbilical while continuing to breathe normally
- Hold for upto 10 seconds and repeat upto 10 times

## **2. Circulatory exercise**

This exercise must be performed very frequently in the immediate postnatal period to improve circulation, to reduce edema and to prevent deep vein thrombosis.

#### **a. Foot and leg exercises:**

Instruct mother to :

- Sit or half lie with legs supported
- Bend and stretched the ankles at least 12 times.
- Circle both feet at the ankle at least 20 times in each direction
- Brace both knees , hold for the count of 4 , then relax
- Repeat 10 times

## **3. Kegal exercise (pelvic floor exercise)**

Kegal exercise strengthening the muscle of the pelvic floor. These muscles are weakened by the birth process and should be exercised right after birth. However, it may be hard to do these exercises soon after delivery. Instruct to do as many as mother can, and the tone will slowly return.

Instruct mother to:

- May be done lying down ,sitting or standing
- Instruct her to close and draw up around the anal passages as though preventing a bowel action then repeat for front passages (vaginal and urethra) as if to stop the flow of urine in mid-stream.
- Hold the contraction for 10 seconds
- This is repeated up to 10 times
- Continue to do this exercise for 2-3 months
- Don't be discouraged if these are hard to do at first. They will become easier with practice.
- After 3 months if the mother is able cough deeply with full bladder with leaking urine, she may stop the exercise
- If leaking occurs, she may continue the exercise for the rest of her life.

# NEONATAL NURSING PROCEDURE

## 1. IMMEDIATE CARE OF A NEW BORN

### Definition:

Provision of care to a baby soon after delivery,

### Purpose:

- To keep baby clean and warm.
- To clear air passage and facilitate breathing.
- To assess condition of new born.
- To observe for any external anomalies.

### Equipment Required:

- Suction machine/vacuum or mucous socker
- Radiant warmer
- Cord clamp
- Sterile cotton balls
- Sterile cord cutting scissors
- Measuring tape
- Thermometer
- Baby clothes with cap
- Baby wrapper
- Identification tag

### Procedure:

1. Clear mouth and nose as soon as head is born.
2. Receive baby in a clean and warm sheet:
3. Assess condition of newborn
4. Place baby under radiant warmer comfortably.
5. Dry baby well, remove wet sheet, and mummify baby with a clean warm sheet
6. Assess breathing and color.
7. Decide if the baby needs resuscitation.
8. Tie and cut cord according to guidelines
  - a. Tie 1: Tie 2 finger from the baby's abdomen.
  - b. Tie 2: Tie 3 fingers from the baby's abdomen.

c. Tie3: Tie 4 fingers from the baby's abdomen.

i. If use holister cord clamp, clamp three finger from the baby's abdomen. Clamp 2nd with artery forceps or ties with thread 4 fingers from the baby's abdomen.

ii. If use artery forceps, clamp 3 fingers from the baby's abdomen clamp 2 with artery forceps 4 fingers from the baby's abdomen.

9. Give the baby to the mother to keep warm.

10. Put identification tag which has mother's name and hospital number on wrist of

11. Help the mother breast feeding.

12. Give eye care.

13. Quickly examine the newborn (head to toe) for any deviations or abnormality.

14. Dress the baby.

15. Weigh the baby and wrap properly.

16. Replace equipment and leave the baby care area clean and tidy.

17. Wash hands.

18. Document the procedure and report any abnormalities present to ward sister and inform neonatologist.

**Alert:**

- The emergency equipment for neonatal resuscitation should be kept ready always in neonatal area.
- Stimulate baby by rubbing the back in case of maternal sedation.
- Do not stimulate baby by rubbing back or sucking nose and avoid bagging baby if amniotic fluid is meconium stained.
- If there is any deviation from normal, neonatologist should be informed. If mother has diabetes mellitus and on insulin, and if baby's weight is less than 2.5kgs or more than 4kg transfer to nursery.

## **2. NEWBORN EXAMINATION**

**Definition:**

This is a process of examining the newborn baby from head to toe.

**Purpose:**

- To detect major and minor neonatal health problems.
- To identify birth defects and birth injuries
- To plan care for the baby

### **Equipments Required:**

A tray containing:

- Thermometer set
- Stethoscope
- Measuring tape
- Weighing scale
- Torch light
- Spirit swab Napkin
- Kidney tray
- Baby's chart or card
- Pen

### **General Consideration:**

1. Prepare the room for safety, comfort (room temperature shouldn't be less than 28 F switch off the fan).
2. Breast feed the baby adequately before examination.
3. Take the brief related history i.e. antenatal, natal and postnatal.

### **Procedure:**

1. Explain the mother about the procedure.
2. Prepare necessary equipment
3. Wash hands and dry..
4. Record vital signs.
5. Undress the baby and assess general condition (activity, movement, seizures, and twitching muscle) of baby.
6. Assess color and condition of skin.
7. Measure head and chest circumference
8. Measure height (Crown-rump) and weight correctly
9. Examine head for shape size, fontanella and sutures caput, moulding, haematoma.
10. Examine eyes for color, jaundice, edema, discharge and hemorrhage
11. Examine ears for location, structure, discharge, cartilage.
12. Examine nose for structure, septum, discharge and nasal fares.
13. Examine mouth for cleft palate and cleft lip, decidual teeth, oral thrush, tongue tie and protruded tongue.
14. Observe face for any abnormalities or injury
15. Examine neck for any abnormalities including clavicle fractures.
16. Inspect chest for any abnormality, injuries and assess heart sound/lungs sound
17. Inspect abdomen for distension, any other abnormalities and condition of the card. 18. Examine limbs for movements, dislocations, fractures, paralysis, extra digits, and range of motion.



19. Examine genitalia for congenital hydrocele, urethral opening, and absence of testes in scrotum in male baby. For female baby exposure of labia minora, pseudomenstruation, hymen, vesico vaginal fistula, absence of vagina.
20. Inspect back for structure, depression of vertebra, spina bifida, meningocele and meningomyelocele.
21. Check rectum for patency, passage of meconium.
22. Check reflexes (rooting, sucking, grasping, walking and Moro reflexes).
23. Dress the baby.
24. Explain mother about your findings in simple and understandable language.
25. Advise mother as per need.
26. Ensure comfort of mother and baby before leaving them.
27. Replace all equipment after proper care.
28. Wash hands.
29. Record all findings in the chart accurately and report if any abnormality noted.

### 3. APGAR SCORE


**Definition:** APGAR score is numeric expression of the condition of a new born obtained by rapid assessment at 1 and 5 minute of age. Apgar scoring system is used to assess the initial condition of the neonate .

**Purpose:**

- To assess the effectiveness of resuscitative effort.
- To assess general condition of baby after birth.

APGAR score is assessed by observing the 5 areas or five signs (heart rate, respiratory effort, muscle tone, reflex irritability and colour). A score of 0, 1, or 2 is awarded to each of the signs in accordance with the guidelines in table. Each area has maximum score of 2 and minimum of 0.

# APGAR SCORING SYSTEM

	0 Points	1 Point	2 Points	Points totaled
<b>Activity</b> (muscle tone)	Absent	Arms and legs flexed	Active movement	
<b>Pulse</b>	Absent	Below 100 bpm	Over 100 bpm	
<b>Grimace</b> (reflex irritability)	Flaccid	Some flexion of Extremities	Active motion (sneeze, cough, pull away)	
<b>Appearance</b> (skin color)	Blue, pale	Body pink, Extremities blue	Completely pink	
<b>Respiration</b>	Absent	Slow, irregular	Vigorous cry	

<b>Severely depressed</b>	<b>0-3</b>
<b>Moderately depressed</b>	<b>4-6</b>
<b>Excellent condition</b>	<b>7-10</b>

- The total score (maximum) is 10.

### Assess the components of the Apgar score:

- **Heart rate** is auscultated with the stethoscope or the umbilical cordis palpated at its junction with the skin.
- **Respiration effort** is assessed by listening for breath sounds with the stethoscope or by observing the chest movements.
- **Colour** assessment of the skin colour may be difficult due to the severe bruising or dark pigmentation. Looking at the mucus membranes of mouth may be helpful, bluish colour indicating cyanosis and pinkish appearance normal oxygenation.
- **Muscle tone** reflects the degree of flexion and the amount of resistance to straightening of the extremities. Normally the term infant is well flexed at elbows and hips resisting the extension of the extremities.
- **Reflex irritability** is a reflection of the infant's response to flicking of the sole of the foot or to the insertion of a nasal catheter. (Following suctioning of the mouth).

**Suggested implication** of the following APGAR score at one minute:

- 8 to 10: no asphyxia
- 5 to 7: mild asphyxia
- 3 to 4: moderate asphyxia.
- 0 to 2: severe asphyxia

#### **4. ASSISTING WITH BREASTFEEDING**

**Definition:**

Assisting mother to feed baby at breast by using appropriate technique.

**Purpose:**

- To assist mother to breastfeed her baby.
- To educate mother on importance of breastfeeding and its technique.
- To create positive attitude towards breastfeeding.
- To help baby receive all benefits of breastmilk.

**Equipments:**

- Bowl with lukewarm water
- Tray with a gauze or sponge towel
- Kidney tray

**Procedure:**

- Explain the importance of breastfeeding and each step as you do it, so the mother can do it herself.
- Make sure mother has taken a bath and washed her hands before feeds.
- Assist in cleaning her breast if necessary
- With a gauze piece/ clean cloth first clean nipple area then clean breast with lukewarm water in a circular motion.
- Clean one breast at a time.
- Change baby's soiled linens before feed.
- Help the mother and baby into a comfortable position. The mother can take any position that is comfortable for her and her baby. She could sit down or lie down. If she desired, use pillow or folded blankets under her head if she is lying down or under her arm if she is sitting.
- Look for good positioning and assist the mother of baby's positioning if needed;
  - Baby's head and body straight
  - Baby's body turned toward the mother, nose opposite the nipple
  - Baby's body touching mother abdomen
  - Baby's whole body well supported, not just neck or shoulder.

-Look and assist the mother positions to hold the baby during breastfeed. Use different positions to hold the baby is following :

**Cradle position: (Common position)**

Mother sits in a comfortable chair or bed and lays the baby on her side across her lap, facing her. She supports the baby's head in the bend of her elbow and the back and buttocks with her forearm. Place pillows under elbow to decrease tension and fatigue.

**Side-lying position**

Both the mother and baby lie on their sides facing each other. The mother may use either her hand or forearm or pillow behind the baby's back to support him, positioning baby's head at her lower breast. This position useful for night feeding or when mother had a caesarean delivery.

**Football hold position or under arm hold**

This position is the most comfortable position if mother have large breasts, if the infant is very small or premature or if mother have had a caesarean delivery. Sit in a bed or chair with pillow under mother arm on the feeding side.

**Cross cradle hold position**

This position is almost like the cradle hold position but the mother uses her other arm to hold the baby. The baby's head is held by the mother's open hand. This position makes it easy to move the baby to the breast.



## Breastfeeding Positions



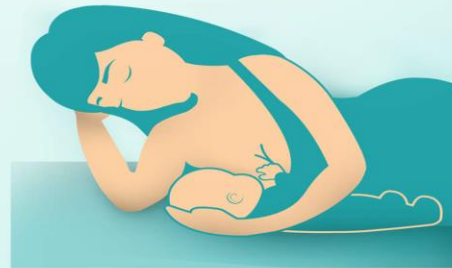
**Cradle hold**



**Cross-cradle hold**

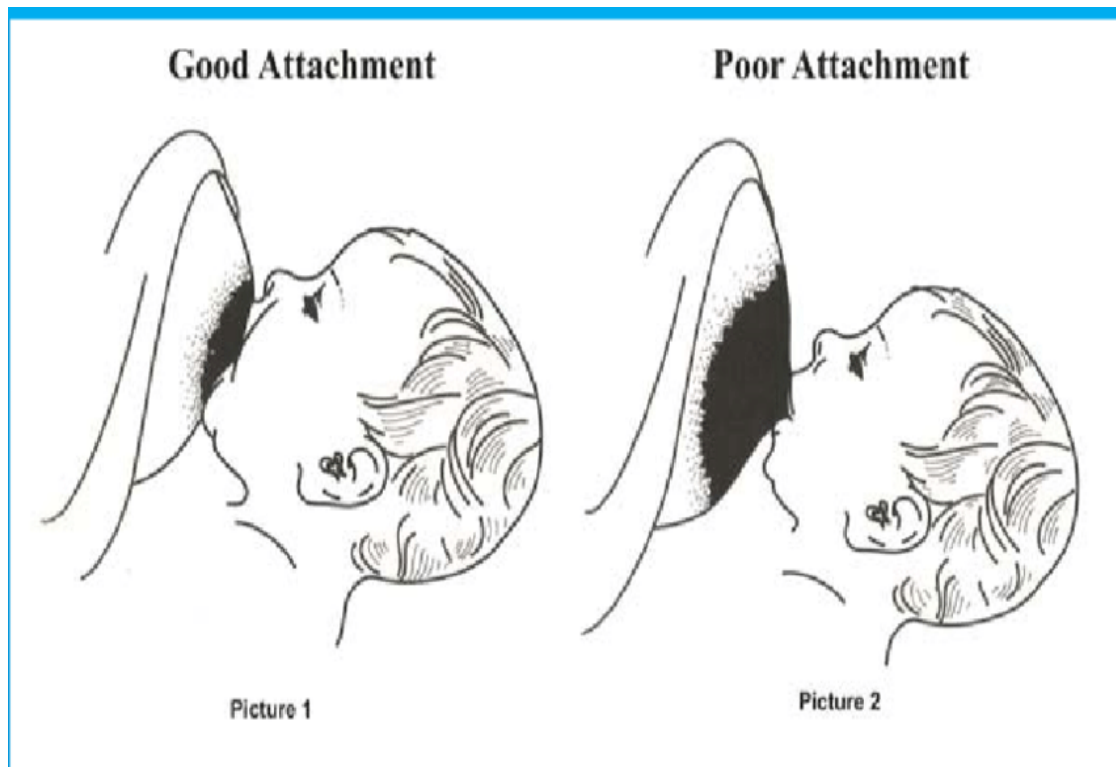


**Football hold**



**Side-lying position**

- Help the baby attach to the breast Ask mother to hold her breast in a “c” hold (thumb on top and other fingers below the breast) with her finger away from the areola. Tell the attachment is good:
  - ❖ Baby's chin is touching the breast.
  - ❖ Baby's mouth is wide open.
  - ❖ Baby's lower lip is turned outward.
  - ❖ Upper areola more visible than the lower areola.
- Tell the sucking is good. If there are slow deep sucks with somepauses.
- If the baby is not attached or sucking well, take the baby off the breast and try again
- Let baby suck as long as he wants or until he releases the breast Use both breasts.
- The baby should finish emptying one breast to get before starting on the second breast



## 5. MANNUAL EXPRESSION OF MILK

### Purpose:

- To express breast milk when unable to nurse infant, to relive engorgement, and to stimulate milk production.

### Equipment:

- Sterile wide necked jug, bowl or cup
- Well-fitting lid or cover
- Towel
- Plastic bottle
- Pot with lid

### Procedure:

1. Adhere to universal precaution
2. Explain the procedure to mother when she needs to express breast milk and how to boil a cup at home to collect the express breast milk.
3. Find a private place where the mother can relax near to her baby.
4. Wash hand thoroughly with soap and water, dry with a clean dry cloth and instruct mother on importance of washing hands before expressing milk.
5. Put on clean gloves if available but mother does not need gloves
6. Explain to the mother how to stimulate the let- down reflex (Oxytocin reflex).

- Sit comfortable
  - Hold the baby skin to skin if possible.
  - Put clean warm wet clothes on the breast for 5 minutes to help open milk tubes, if needed.
  - Show the mother how to massage her breast from the outside towards the nipple to help bring milk down.
  - Have a cup or container near with wide opening that was boiled.
7. Teach the mother about how to express milk:
- Use flattened hand to exert gentle pressure in a circular motion on the breast starting at the chest wall and spiraling around the breast toward the areola. Use palms of hands, not fingers, for firm pressure. The warm compresses and breast massage should help stimulate “let down”.
  - Hold the breast in a “C” hold (Thumb on top and other fingers below the breast),
  - Position thumb pad 1” inches behind the nipple and finger.
  - Lean slightly forward so that milk will go into the container.
  - Squeeze thumb and other fingers together.
  - Press and release. Try using the same rhythm as the baby sucking.
- Be patient, even if no milk comes at beginning.
  - Express the milk from one breast for at least 3-5 minutes until the flow slow, then express from the other breast, and then repeat from both breasts.
  - Explain expressing milk can take 30 minutes or longer in the beginning.
  - After expressing breast milk, the mother can feed it to the baby right away or save it for later. Fresh breast milk has the highest quality.
  - Put a lid on the bowl or cup, label it and storing if the baby is not fed immediately.

**Milk storage:**

- Room temperature:
    - ✓ 19-22 degree centigrade for 10 hours
    - ✓ 26 degree centigrade for 6 hours
    - ✓ If it is hotter than 26 degree centigrade, only 1-2 hours
  - Refrigerator
    - ✓ At 0-4 degree centigrade for 24-48 hours.
  - Freezer
    - ✓ If the freezer is inside a refrigerator, upto 2 weeks. In a separate deep freezer at 18 degree centigrade upto 3 months.
- Instruct mother to date each bottle or plastic liner. Use the oldest milk first.
  - Do not re- freeze breast milk.
  - Do not save milk from used bottle for use at another feeding.

**After Care:**

- Instruct the patient in the procedure and proper storage of breast milk.
- Document in patient’s record:
  - Condition of nipples, amount of breast milk pumped, and ease of procedure
  - Instructions given to patient
  - Patient’s ability to express milk

## 6. DAILY CARE OF THE NEWBORN

**Definition:** The process of providing care of newborn baby daily.

**Purpose:**

- To ensure wellness of the newborn.
- To observe any deviation from normal and immediate intervention.

**Equipments:**

A tray containing

- Thermometer set
- Stethoscope
- Watch
- Sprit swab
- Bowel with warm water
- Gauze pieces
- Kidney tray

**Procedure**

1. Explain the mother about procedure.
2. Assemble the articles.
3. Wash hands.
4. Check the vitals (baby should be calm).
5. Ask the mother about baby's feeding pattern.
6. Ask the mother about elimination.
7. Undress the baby.
8. Observe face, abdomen including whole body for color, texture, distension.
9. Observe umbilical stump for cord bleeding and signs of infection.
10. Clean the face with warm soaked gauze piece followed by fold of neck, back of the earlobes, axilla, groin and genitals
11. Dress the baby with clean and pre-warmed clothes.
12. Replace the articles.
13. Wash hands.
14. Recording and reporting.

## 7. CARE OF THE UMBILICAL CORD

**Definition:**

It is the cord that connects the developing fetus with the placenta while the fetus is in the uterus. It carries oxygenated blood and nutrients from the placenta to the fetus through the abdomen, where the navel forms. It also carries deoxygenated blood and waste products from the fetus to the placenta.



**Purpose:**

- To prevent infection of umbilical stump site.
- To treat infected umbilical cord.

**Equipments:**

- Sterile cotton swab
- Boiled water
- Gloves

**Procedure:**

1. Adhere to Universal Precautions.
2. Assemble required articles.
3. Expose the umbilical cord and inspect for any bleeding or signs of infection.
4. Wipe base of cord or stump site with boiled soaked cotton swabs.
5. Once stump has fallen off wash umbilical area gently during normal bath, dry thoroughly.

## 8. EYE CARE

**Definition:**

Eye care of newborn means proper cleaning of eyes of the baby by following strict aseptic technique.

**Purpose:**

- To keep the eye clean by removing discharges
- To prevent from infection

**Equipments:**

A tray containing:

- Sterile bowl containing cotton balls
- Normal saline
- Sterile thumb forceps
- kidney tray
- Ointment if required

**Procedure:**

- 1.Prepare the necessary equipments
- 2.Explain the procedure to the mother and let her hold the baby.
- 3.The environment should be comfortable for the baby.
- 4.There should be adequate lighting for observation.

5. Wash hand thoroughly with soap and water and dry.
6. Ask assistant to open the tray
7. Using thumb forceps take out one cotton ball and dip the edge of that in the saline.
8. Squeeze out extra saline from the swabs.
9. For cleaning, use the other area of the cotton which is not touched by the fingers.
10. Gently wipe the leads of the left eye from inner to the outer canthus without applying any pressure on the eye ball. While cleaning eye, support the forehead to prevent movement of head, using lower portion of your palm.
11. Use one swab for one swabbing only.
12. Repeat the procedure on other eye.

**Note:** For crusted secretions place wet, warm cotton swab over closed eye and leave it in place until the crust softens.

13. Apply ointment if required in the following way:
14. Place the thumb below the lower eyelid and the four fingers above the upper eyelid and gently open the eye.
15. Apply a small amount of ointment to the inside corner out, taking care not to contaminate the tip of tube of lubricants.
16. Repeat the procedure on the other eye.
17. Wipe off excess ointment from each eye with separate swab or clean cloth.
18. Wash hand thoroughly with soap and water and dry.
19. Take all articles to the utility room.
20. Record the procedure on chart.

## **9. KANGAROO MOTHER CARE**

**Definition:** Kangaroo mother care is a method of keeping the baby warm through continuous skin to skin contact in a vertical position between mothers breast or against the father's chest for a non- specific period of time. KMC is universally available, a simple inexpensive and biologically sound method of care for low Birth Weight infants. The method was first introduced in Bogota Columbia in the late 1970s.

### **Purposes**

- To provide skin to skin care to the LBW baby.
- To assist in maintaining temperature of infant.
- To facilitate breast feeding.
- To help to increase duration of breast feeding
- To improve mother infant bonding.

### **Procedure**

1. Explain to the mother and family why preterm babies need KMC.
2. Explain the benefits of KMC.
3. Start KMC as soon after birth as possible.

4. Place the baby between the mother's breasts with the baby's feet below the mother's breasts and the baby's head above. The mother and baby should be chest to chest with the baby's head turn to one side.
5. The hip should be flexed and abducted in a "FROG" position, the arm should also flex.
6. Baby's abdomen should be at the level of the mother's epigastrium. Mother's breathing stimulates the baby, thus reducing the occurrence of apnea.
7. Put a cloth between the baby's leg to collect feces and urine.
8. Use a long piece of cloth.
9. Place the center of a long cloth over the baby on the mother's chest.
10. Wrap both ends of the cloth firmly around the mother, under her arms, to her back.
11. Cross the cloth ends behind the mother and tie the ends of the cloth in a secure knot.
12. If the cloth is long, bring both ends of the cloth to front and tie the ends of the cloth in a knot under the baby.
13. The wrap should not be so tight that it constricts the baby. Leave room for the baby's abdominal breathing.
14. Encourage the baby to suckle at breast as often as he wants, but at least once in every 2 hours.
15. Mother should sleep propped up so that the baby stays upright; mother can stand/walk if baby is secured properly.
16. Make sure that baby's trunk, palms and feet are warm to touch.
17. Wash and dry hands.

**Note:**

- To breastfeed, loosen cloth and feed baby on demand, at least every 2 hours.
- To sleep, the mother should keep her upper body raised some (about 30 degrees) to keep the baby in a head up position.
- Mother should be involved in observing (breathing, color, temperature) the baby during KMC.
- Use KMC continuously.
- Another family member (father, grand- mother, aunty) may do the skin- to – skin contact for short periods of time.
- Continue KMC until the baby weights at least 2500 grams.

## **10. BABY BATH**

**Definition:** Baby bath means giving a bath to the newborn or other baby. It allows cleansing and observation as well as promotes comfort.

**Purposes:**

- To provide comfort to the baby.
- To prevent from any possible infection.
- To detect any abnormalities or deviation from normal.

- To maintain blood circulation.

**Equipments:**

Trolley containing

- A big tray
- Sterile eye care set (sterile bowl and cotton)
- Normal saline
- A bown containing dry cotton, swasbs
- Axillary thermometer
- Stethoscope
- Measuring tape
- Weighing machine
- Paper bag or kidney tray
- Soap in a dish
- Soft Towel
- Clean clothes for baby along with cap.
- Baby wrapper
- 2 basin
- Water jug-2 (1 for hot water and 1 for cold water)
- Mackintosh
- Oil or powder to apply after bath
- Napkin for the baby
- Cord cleaning equipment (NS / clean water and swab)
- Golves (in hospital setting only if necessary)
- Bucket to receive dirty water
- Plastic apron
- Bath table

**Procedure:**

1. Explain the procedure to the mother.
2. Maintain room temperature at 28 degree celsius to 31 degree Celsius , clean adequate
3. Prepare all the articles required and take to the baby's bathroom.
4. Wash and dry your hands.
5. Place the mackintosh on bath table and keep the baby
6. Before bathing observe baby activities breathing, color and temperature, eyes (discharge, pus and swelling).
7. Do not give bath if temperature is below 95 degree F or above 99 degree F.
8. Take the weight and other measurement before bath.

9. Arrange all the articles keeping in easy site .Open the sterile eye care set and pour NS/clean water.
10. Mix the hot and cold water and make lukewarm water in one basin.
11. Put the plastic apron
12. Wash and dry the hand.
13. Clean the eyes using a sterile cotton swab dipped in boiled water or normal saline.  
Use the swab only once.
14. Wash the face using a soft cloth or cotton swab.
15. Check and clean the nostrils.
16. Clean the buttocks if necessary by using wet cotton or soft cotton cloth.
17. Expose the baby's head and put dry cotton on both ears to prevent to enter.
18. Check the temperature (98 -99 degree f) of water, it should be felt pleasantly warm
19. Lift the baby up to support his head, back with one arm, and hold the head over the basin.
20. Rise his head by holding the head slightly lower than the body, apply soap with one hand in a circular motion ( do not directly apply soap).The infant's hair should be rinsed with clean water allowing excess to drip into the basin.
21. Place the baby on bath table and dry his head by mopping up.
22. Cover the baby's head with a warm cap or dry cloth.
23. Discard dirty water in bucket.
24. Mix the hot and cold water and make lukewarm water in both the basin
25. Undress the baby and cover the baby with a bath towel or clean cloth.
26. Check the temperature of water.
27. Expose the baby and slowly put it in a basin and wet it .
28. Apply soap in your hands and massage the body from upward to downward starting from neck, arm, hands, lower extremities and roll him towards back massage it, then clean the genitalia, giving special care to the skin folds (groin, buttocks, neck, axilla etc)
29. Scrubbing is not necessary but most babies enjoy their arms and legs being massaged with gentle strokes during a bath.
30. Hold the baby very carefully placing the left hand under his shoulder and grasp the left upper arm, baby's head will rest on your wrist.
31. Put your right hand under his buttocks and grasp the left thigh.
32. Put him into the basin containing clean lukewarm water with his head out of the water then rinse off the soap.
33. Expect baby to cry the first few times you bath him/her.
34. Grasp the baby with left hand with his body supported with your elbow and keep on bed table.
35. Dry the bay by mapping up the clean towel
36. Wrap the baby immediately after mopping up.
37. Expose the abdominal area to clean the cord and make it dry

38. Quickly dress the baby. Dress should be appropriate for the climate. The extremities should be free for movements.
39. Put the baby in skin to skin contact with the mother after bath and cover them and encourage to breastfeed.
40. Clean and replace all equipments.
41. Report and record the findings.

## **11. TRANSFER OF PATIENT FROM LABOUR ROOM TO WARD**

### **Definition**

A process of shifting patient from labour room to ward after delivery.

### **Purpose**

For continuous care and observation

### **Procedure**

1. Find out a availability of empty beds according to unit.
2. Explain the patient and relatives about transfer and handover belongings.
3. Check the following before transferring :
  - Transfer order on doctors order sheet
  - Postnatal prescription
  - Vital signs
  - PV Bleeding
  - Episiotomy site if present
  - Whether mother has voided or not
  - If voided, fundal height checked and marked in the TPR sheet
  - Condition of the baby , feeding , cord bleeding and completion of baby card
  - Completion of labour folder and chart
  - Transfer mother and baby together if baby is with mother
4. Document time, condition of mother and baby, transferring notes in nurses record and folder at the time of transfer.
5. Write name of patient, hospital number, sex of baby and ward transferred in discharge book.
6. Report any deviation from normal immediately to 2<sup>nd</sup> on call in labour room.
7. The nurse receiving mother in ward should check for the following:
  - g. Name of patient
  - h. Tag of baby
  - i. Sex of baby
  - j. Condition or both mother and baby
  - k. Prescription and completion of charting
  - l. Postnatal order

## 12. NEONATAL RESUSCITATION

**Definition:** Neonatal resuscitation includes stimulation, assisted ventilation, cardiac massage, use of volume expansion and medications.

### **Purpose:**

- To expand lungs and maintain adequate ventilation and oxygenation.
- To maintain adequate cardiac output and tissue perfusion.
- To maintain normal core temperature and to avoid hypoglycemia while stabilizing infant for transport to nursery.

### **Articles Required:**

- Laryngoscope with '00' (VLBW), 0 (preterm infant) and '1' size blade (term infant)
- Scissors
- Ambu bag and appropriate sized mask
- Stethoscope
- Suction apparatus with mucus sucker.
- ET tube with stillet
- O2 source
- Heat and light source
- IV fluids, IV canula, syringes and needles
- Gloves
- Drugs: Naloxone, Adrenaline, NaHCO<sub>3</sub>
- Adhesive tape
- Stop clock
- One set baby linen

### **Procedure**

1. Prepare area for resuscitation by preheating cot.
2. Check whether suction and warmer is in working condition and is kept ready
3. Be certain that oxygen is available.
4. Keep laryngoscope, appropriate sized blades, ET tubes and other equipment ready
5. Receive baby promptly and wipe baby,
6. Wrap in dry, warm clothes and place under radiant warmer.
7. Keep neck slightly extended and suction throat first and then nasal.(M=5 cm ,N=3 cm)
8. Give oxygen ( as necessary and available)
9. Evaluate respiratory rate, heart rate, color of baby, muscle tone and response to stimulation (APGAR) score.
10. Decide action based on evaluation
  - Give supportive care: if baby is breathing, heart rate is above 100, baby is pink &

- has good muscle tone. Baby may be given to mother for warm, breastfeeding.
- Keep the baby warm, stimulate, and give oxygen (if available); if baby is breathing, heart rate is above 100 but baby has cyanosis.
- If HR 60-100 bag and mask ventilation.
- IF HR < 60 continue ventilation, intubate and start chest compression

### **Ventilate the baby**

11. Explain to the mother and family about procedure.
12. Make sure baby has neck slightly extended.
13. Mask should be properly sealed over the newborn's nose and mouth.
14. Ventilate the baby 2 times and look for a gentle rise and fall of the baby's chest.
15. If the chest doesn't rise:
  - Check head position
  - Check that the mask and seal are correct
  - Check for fluid in the mouth, if there is fluid, suction
15. Ventilate the baby 20-30 times in 30 seconds:
  - Evaluate chest rise with each breath
  - When the baby begins to breathe normally, stop ventilating.
16. After each 30 seconds ventilation, reassess the baby's breathing heart rate and color.
  - If the baby breathe spontaneously and heart rate is > 100. Stop resuscitation and continue to give supportive care.
  - If the baby is not breathing or is gasping or the heart rate < 100, continue to ventilate 20-30 times in 30 sec. and re-evaluate.
17. If the baby doesn't breath after 2-3 minutes of resuscitation, continue resuscitation and closely monitor baby for:  
Breathing problems (i.e. chest in drawing, gasping or grunting, breathing <30 or> 60 breaths in 1 min), color (blue or pale) and muscle tone (poor)
18. If baby breathes normally check heart rate. Count beats for 6 seconds, and multiply by 10 to get rate per minute quickly.
19. If baby breathes normally, heart rate is over 100/min and are pink in colour, no further resuscitation is needed.
20. If baby has central cyanosis, administer oxygen at the rate of 5 liters/minute.
21. If baby is breathing and heart rate is below 100/min continue bag and mask ventilation immediately.
22. Use enough pressure to ensure adequate chest movements.
23. If a chest movement does not occur, reposition baby, suction throat and apply mask properly.
24. Insert an open orogastric tube if bagging is required for more than 2 minutes.
25. Check heart rate after 30 minutes of bagging. If above 100/min bagging may be stopped.
26. Continue bagging if heart rate is between 60 to 100/min for another 30 second and reevaluate heart rate.
27. Check if mother was given inj pethidine in labour. If so, give inj naloxone (0.1mg/kg) IM, IV or S/C.



28. If heart rate is below 60/min, start chest compression
29. Give chest compressions at the lower third of sternum between two nipples but above xiphisternum.
30. Compress at about  $\frac{1}{2}$  to  $\frac{3}{4}$  inches at the rate of 120 per minute using thumb technique or two finger technique. The ratio of massage to inflation should be 3:1. Do 15 cycle (1 cycle=1 breath +3 compression, 1 cycle =2 second)
31. Palpate femoral pulse and reevaluate heart rate after 30 seconds.
  - If HR <60 again do 15 cycles
  - If HR >60 continue ventilation
  - If HR >100 watch for self respiration(Stop ventilation and Chest compression after 20 min if no response.)
32. If heart rate is below 60/minute, assist in administering emergency drugs.
33. Keep baby in supine position with neck slightly extended.
34. Hold laryngoscope in left hand and insert blade through the right angle of mouth pushing tongue to left.
35. Gently lift laryngoscope and apply gently pressure on trachea till the ET tube is in the middle third of trachea.
36. Do gentle suctioning.
37. Insert ET tube with stiletto through the right side of mouth till ET tube is in the middle third of trachea.
38. Hold tube in place and carefully remove laryngoscope from the mouth.
39. Connect tube to a self inflating bag and confirm position of tube.
40. Secure tube with adhesive tapes, continue IPPR.
41. Monitor heart rate. If heart rate is >80. stop discontinue IPPR and give oxygen.
42. Continue to monitor condition of baby, heart rate, respiratory status.
43. Replace equipment in the respective areas.
44. Wash hands.
45. Document procedure, medications given and condition of baby.

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## **ADMISSION PROCEDURE**

**Definition:** Admission of patient to the psychiatric hospital or unit for observation, investigation, treatment and care.

**Purpose:**

- To provide care to the psychiatric condition which are unmanageable at home.
- For diagnostic purpose.
- To provide treatment and care.

**Equipment:**

- Admission slip (nurses cardex, TPR sheet, lab sheet, treatment order sheet etc)
- Thermometer
- BP Apparatus
- Weighing Scale

**Procedure**

1. Provide patient/relatives with a comfortable chair and permit them to sit down for a few minutes before processing with admission procedure
2. Provide orientation to patient and their family regarding the rules of hospital ward, timing of medication, timing of meals and timing of different activities in ward.
3. Informed written consent for admissions.
4. Check for payment receipt/ Deposit or inpatient number.
5. Ensure that room is ready.
6. Check vital sign, weight and height of patient and record appropriately.
7. Give stat medicines if any as per physician's order.
8. Provide safety to the patient.
9. Keep all the harmful items such as knife, rope, nail cutters, glass ware, belts etc of the patient in custody because it may cause harm to self and others.
10. Collect necessary information (demography data, past and present psychiatric history and past and present medical history and treatment history).
11. Assess the patient's mental status examination.
12. Document all the information of admission in the nurse's record and report as needed.

## **DISCHARGE PROCEDURE**

**Definition:** Preparation of patient to leave hospital and return to home environment.

### **Purpose:**

- To permit patient to return and reside at home.
- To impart relevant knowledge and information to patient/relatives regarding home care.

### **Equipment**

- Discharge register book
- Discharge paper
- Stamp
- Census form
- All patient record

### **Procedure**

1. Inform the patient's party at least 24 hours before discharge.
2. Ensure written order for discharge by doctor.
3. Complete discharge slip and get clearance from billing counter and pharmacy.
4. Handover discharge medicine to relatives and explain about the medicine (dose/timing/route/possible side effect).
5. Advise them to keep the hospital document safe/secure and remind them to bring follow up visit.
6. If the patient is a police case, the nurse on duty should inform the police before the patient leaves the hospital and ask the police to sign the date and time.

## MENTAL STATUS EXAMINATION (MSE)

**Definition:** The mental status examination is the part of the clinical assessment that describes the sum total of the examiner's observations and impressions of the psychiatric patient at the time of the interview.

### Propose

- To get a baseline measure of psychological functioning.
- To reach tentative diagnosis.
- To determine the general condition of cerebral function.
- To give a note of prognosis.
- To give a set of management recommendations.
- To find-out of both positive and negative findings of mental status.
- To assess the presence and extent of a person's mental impairment.

### Format for mental status examination

1. Identification data
2. Date and time
3. Venue, language of interview
4. Time taken for interview
5. Ask the patient following components
  - i. General appearance and behavior
  - ii. Speech
  - iii. Mood
  - iv. Thought process
  - v. Perception
  - vi. Cognitive (higher mental functions)
    - + consciousness
    - + orientation
    - + attention
    - + concentration
    - + memory
    - + intelligence
    - + abstract thinking
  - vii. Insight
  - viii. Judgement

## Procedure

1. Greet the client and develop rapport.
2. Explain the purpose and importance of mental status examination to client, care taker and obtain verbal consent.
3. Welcome the client in examination room and make him/her comfortable by requesting to sit on chair.
4. Assure safety for the client and the examiner before starting and during examination.
5. Maintain privacy during examination e.g., Doing MSE in examination or separate room.
6. Observe client's gait while coming to interview.
7. Maintain rapport during examination.
8. Observe client's appearance e.g., Physical cleanliness, clothing and physical characteristics and record accurately.
9. Observe and describe client's behavior during interview i.e., Posture, facial expression, general movements, eye contact, quality of speech and client's relationship with interviewer and record any deviation from normal.
10. Perform subjective and objective assessment of mood and emotional reactions. Ask questions and listen to answers by observing client's feeling (affect/ mood), liability of affect and predominant mood.
11. Ask questions and listen to answers by observing client's thought content, stream of thought.
12. Allow the client to explain things in his/her own way. Listen and observe for cues from client.
13. Record patient's verbatim in descriptive terms.
14. Ask questions and listen attentively to identify the state of perception and very/ differentiate between illusion and different types of hallucination.
15. Encourage the client to elaborate and explain if any abnormality.
16. Acknowledge and validate client's distress/ concerns.
17. Ask questions so as to check the higher mental functions i.e., consciousness, orientation, attention, concentration, memory, intelligence, abstract thinking
18. Ask about time, place and person to identify client's orientation condition.
19. Identify the immediate, recent and remote memory status of client. To check immediate memory, tell the patient to name and repeat 3 unrelated objects and ask to recall after five minutes. For recent memory ask any recent events of 24 hours, and for remote memory, ask for the date and place of marriage, name and birthday of children, school joining age, passed date of S.L.C. and other relevant question from the client's past event.
20. Ask him/her to tell the days or months in reverse order or to do simple arithmetic practice to identify the concentration.

21. Ask question according to his/her educational and social background to identify intelligence level e.g., Name of prime minister/ president, capital of country and simple arithmetic calculation, reading writing etc.
22. Test abstract thinking by asking socio- cultural proverbs (meaning) and asking about similarities and differences between familiar objects e.g., Table/chair, banana/orange, dog/lion, eye/ear
23. Assess the client by giving the situation like road and baby, house and fire, facing a snake suddenly test to identify judgment.
24. Compare client's judgment and decision making between pre-illness and post-onset of symptoms.
25. Ask the questions about his/her present state of illness to identify the level of insight.
26. Record all the findings in descriptive terms.
27. Thanks to the client and care taker and complete the examination.
28. Summarize the findings of examination.

### **Nursing consideration**

- Perform MSE in context of age, developmental level, past history, presenting issues educational level and socio-cultural background.
- Ask the open-ended questions carefully and listen attentively.
- Apply skillful observation.
- Avoid interrupting client.
- Avoid asking 'why' questions during interview.

## COUNSELLING

### Definition

Counselling is face to face communication by which one person help another person to make decision or solve a problem and act on them.

### Purpose

- To identify the problems of person.
- To help people use their existing problem- solving skills more effectively or to develop new or better coping skills.
- To provide an opportunity for the person to describe their feelings and problems for themselves and then to reach decisions and actions that are based on informed choices.
- To helps people build skills they can use in solving their problems.
- To facilitate to increase self-esteem and coping abilities.
- To provide emotional support to a patient and their family, and assist them problems or difficult situations.
- To increase the compliance of treatment by encouraging self-determination.

### Procedure

1. Greet the client.
2. Take informed consent from patient and family.
3. Ensure privacy and quiet environment.
4. Establish rapport with the patient and or family.
5. Arrange the seating in order for comfortable distance and easy eye contact.
6. Maintain eye contact and convey interest in what the patient is saying.
7. Encourage the patient to share by asking open-ended questions.
8. Provide empathy and understanding by being aware of the patient's feelings and cultural beliefs.
9. Communicate understanding by repeating what you understand the patient is saying.
10. Assist the patient to see the situation from a new perspective and focus on what they might do to cope more effectively.
11. Provide realistic reassurance and support.
12. Help the patient see what strengths and resources they might use.
13. Summarize what has been said and the main ideas that have been discussed.
14. Formally terminate the counselling session and plan for the date and time for next session.



### **Nursing consideration**

1. Ensure privacy and quiet environment (if possible, examination or separate room, two exit door)
2. Speak confidently and listen carefully with patience.
3. Communicate acceptance and do not judge the patient.
4. Keep the conversation focused on the patient.
5. Ensure that there are no interruptions and that there is sufficient time for the conversation.
6. Maintain patient confidentiality at all times.

### **MANAGEMENT OF VIOLENT PATIENT**

**Definition:** Violence is physical aggression by one person on another which is common in psychotic disorder, personality disorder, delirium, drug intoxication or withdrawal, etc.

#### **Guidelines to manage violent patient**

1. Protect yourself while taking care of patient.
2. Call for assistance to manage any situation.
3. Keep the harmful weapon far away from the patient.
4. Keep the doors open, but need to have close observation.
5. Approach the patient in cool and calm way with low key voice.
6. Do restrain, if necessary. Be sure that sufficient staff members are there to restrain the patients.
7. Remove neck tie or jewelry.
8. Do not keep any provocative family member or friend in the room and avoid confrontation.
9. Do not sit close to the patient.
10. Show concern, establish support and assure the patient.

## RESTRAINTS

**Definition:** Restraints are methods used to limit or restrict the movement of the patient. They are used to protect the health and safety of the restrained patient, other patient, and caregivers. It should never be used as punishment or for convenience of staff.

### **Purpose:**

- To manage agitation and aggression of violent patient.
- To immobilize the patient safely.
- To facilitate examination, treatment and care.

### **Procedure:**

1. Get doctor's order to restrain a patient. In emergency situation verbal order is acceptable.
  2. Explain about the restraining to relatives and encourage voluntary application of restraints by explaining to patient.
  3. For the physical restraints make sure adequate personnel are present (ideally there should be 5 people).
  4. Gently place patient supine with one arm extended above head and other arm at side.
  5. Apply restraints to upper limbs followed by application to lower limbs. Place legs far to each other.
  6. Hold patient head by one person to prevent biting.
  7. Do not leave patient alone after restraints have been applied.
  8. Provide continuous monitoring of patient's response to procedure and physical need, comfort safety.
  9. Check restrained patient for proper application, colour of skin, adequate circulation to limbs, mental status. respiration, hydration and elimination need, every 15 minutes record accurately.
  10. Orders for restraints or seclusion must be reissued by a physician every 4 hours for adults age 18 and older, 2 hours for children and adolescents ages 9 to 17 and every hour for children younger than 9 years.
  11. Support and reassurance are essential during restraining.
1. Documentation is very important.
    - a) Time of Restraint
    - b) Time of discontinuation/duration of restraints.
    - c) Alternative interventions (verbal communication) and patient's response.

## **GUIDELINES FOR DRUG ADMINISTRATION**

**Definition:** The drugs which have a significant effect on higher mental functions, are called psychoactive or psychotropic drugs.

### **Special instructions for administration of psychotropic drugs**

1. The nurse should not administer any drug unless there is a written order.
2. Do not hesitate to consult the doctor when in doubt about any medication.
3. All medications given must be charted on the patient's case record sheet.
4. In giving medications:
  - Always address the patient by name and make certain of his identification.
  - Do not leave the patient until drug is swallowed.
  - Do not permit the patient to go to the bathroom to take the medicine.
  - Do not allow one patient carry medicine to another.
  - Do not leave the tray within the reach of the patient.
5. Check drugs daily for any changes in color order and number.
6. Bottles should be tightly closed and labeled. Labels should be written legibly and in bold.
7. Do not force oral medication because of the danger of aspiration.
8. Make sure no patient has access to the cupboard.
9. Assess blood pressure before giving medication.
10. Prepare the medication correctly. Ensuring the ten rights of drug administration.
11. If the patient is unable to hold medication place medication cup to the lip and give water to swallow the medication.
12. Documentation the medication administration in medicine cardex.
13. Observe the side effect and therapeutic responses of the drugs.
14. Do not miss any doses of medicine.
15. Teach patient and relatives about importance of continuation of medicine even after recovery.
16. Explain that one of the family members must take the responsibility for medication administration and supervision.

## **PREPARING FOR ELECTROCONVULSIVE THERAPY (ECT)**

**Definition:** ECT is the artificial induction of grandmal seizure through the application of electrical current to the brain.

### **Purpose:**

- To help to treat the patient's psychiatric disorder.
- To treat the major mental illness when the drug therapies fail or have serious side-effects.

### **Equipments:**

- ECT machine, conduct gel
- I/V fluids, I/V set, I/V cannula, syringes
- Emergency trolley: Ambu bag, laryngoscope, ET tube, airway, emergency drugs
- Oxygen supply
- Mouth gag, tongue depressor, kidney tray
- Vital signs tray
- Alcohol swab, gauze pieces,
- Pulse oximeter

### **Procedure:**

#### **Pre-ECT care**

1. Explain about ECT procedure, its indications, side-effects, complication to the patient's relatives.
2. Ensure informed consent is obtained.
3. Keep NPO for at least 6 hours before ECT.
4. Collect and report all investigation.
5. Monitor vital signs and report any abnormal findings.
6. Withhold night doses of drugs which increase seizure threshold like diazepam, barbiturates and anticonvulsants.
7. Withhold the oral medications on the day of ECT.
8. Ensure the patient's hair is washed in the morning and should be dry and clean.
9. Remove all the jewellery, watch, spectacles, prosthesis, contact lenses, hearing aids, dentures, metal objects like hair clips and waist belts.
10. Change the patient's clothes and put on hospital gown.
11. Encourage patient to empty bladder and bowel before entering ECT room.
12. Administer inj. Atropine 0.6mg atropine IM 15 to 30 minutes before the treatment.
13. Take the patient on the stretcher to the waiting room.

### **During ECT care**

1. Keep all the equipment ready.
2. Place the patient comfortable on the ECT table in supine position.
3. Stay with the patient to avoid anxiety and fear.
4. Assist in administering anesthetic agent and muscle relaxant for modified ECT.
5. Monitor vital signs and administer 100% oxygen.
6. Mouth gag or airway should be inserted to prevent possible tongue bite.
7. The place of electrode placement should be cleaned with normal saline or conducting gel.
8. Minimal physical restraints at shoulder, elbow, hips, and knees are applied to prevent injury during convulsion.
9. Monitor voltage, intensity and duration of electrical stimulus given.
10. Check the vital signs immediately after procedure.
11. Record the findings and medicines given in the patient's chart.

### **Post ECT care**

1. Receive the patient from ECT room.
2. Place the patient in side lying position e.g., railing cot, without pillow in comfortable bed.
3. Suction if necessary.
4. Provide oxygen as needed.
5. Check vital signs.
6. Observe for cyanosis, respiratory distress and excess secretions.
7. Check for bleeding from injuries to gum or tongue.
8. Assess for nausea, headache, confusion, delirium.
9. Review and follow doctor's instructions for IV fluids and medication.
10. Instruct relatives to give oral fluids after 2 hours and if there is no vomiting, give normal diet.
11. Provide frequent reassurance and orientation to patient after ECT, because there may be memory impairment and mental confusion.
12. Record the following in the nursing note:
  - Date, time, type of ECT given
  - Amount of voltage and duration of treatment
  - Type and duration of convulsion
  - Complications if any present and action taken
  - Vital signs before, during and after procedure

## **NURSING APPROACH TO A PATIENT EXPERIENCING HALLUCINATION/DELUSION**

**Hallucination:** A hallucination is a perception experienced in the absence of an external stimulus.

### **Guidelines:**

1. Establish therapeutic relationship by developing trust.
2. Keep environment calm, quiet and as free of stimuli as possible.
3. Show calm, patience, acceptance, active listening.
4. Observe for behavior clues
5. Identify whether drugs or alcohol have been used.
6. Assess for symptoms duration, intensity and frequency.
7. Help to record number of hallucinations.
8. Focus on symptoms and help to describe the happening.
9. Help to describe and compare current and past hallucinations.
10. Encourage to remember when it began first.
11. Pay attention to the content may helpful in predicting the behavior.
12. alert for commanding hallucination.
13. Do not argue.
14. Do not make promises, which you cannot keep.
15. Do not joke or judge the client's behavior.
16. Help the client understand the connection between anxiety and hallucination.
17. Keep a comfortable distance away from the patient (arm length)
18. Orient client to reality as required. Call the client by name.
19. Determine the impact of the patient's symptoms on ADL.
20. Engage client in reality-based activity.
21. Provide feedback on coping responses.

**Delusion:** False unshakable belief which is out of keeping with the patient's social and cultural background.

### **Guidelines:**

1. Develop trust
2. Assess for symptoms duration, intensity and frequency.
3. Identify all the components, triggering factors. Triggers related to stress or anxiety.
4. If related with anxiety, teach anxiety management skills.
5. Fleeting delusions can be worked out in a short time frame.

6. Listen quietly.
7. Identify emotional components.
8. Respond to the underlying feeling.
9. Encourage discussions with out assuming right or wrong.
10. Observe for evidence of concrete thinking.
11. Observe speech for symptoms of a thought disorder.
12. Recognize between description and facts of the situation.
13. Encourage personal responsibility in wellness and recovery.
14. Promote distraction as a way to stop focusing on delusions.
15. Promote physical activities
16. Recognize and reinforce healthy and positive aspects of personality.

## BIBLIOGRAPHY

### FUNDAMENTAL OF NURSING

- Smith FS, Dwell DJ. Clinical Nursing Skills: Basic to Advance Skills. 4<sup>th</sup> ed. Appleton & Larger Stamford: Connecticut; 1996.
- Delaune S. Fundamental of Nursing: Standards & Practice, 2<sup>nd</sup> ed. Australai: Delmar Thomson: 2002.
- Suresh S, editor. Potter and perry's fundamentals of nursing: Second south Asia edition. 2nd ed. New Delhi, India: Elsevier; 2017.
- Lynn.P, Cram101 Textbook Reviews. Studyguide for Taylors clinical nursing skills: A nursing process approach by Lynn, Pamela, ISBN 9780781774659. La Vergne, TN: Cram101; 2012.
- Taylor C, Lillis C, Lynn P. Fundamentals of nursing. 8th ed. Baltimore, MD: Wolters Kluwer Health; 2014.
- Japan International cooperation agency (JICA) Nepal. 1<sup>st</sup> edition. kathmandu Nepal ([https://www.jica.go.jp/nepal/english/office/topics/pdf/topics02\\_01.pdf](https://www.jica.go.jp/nepal/english/office/topics/pdf/topics02_01.pdf))
- Standard of care: Arterial line monitoring. critical care trauma centre. **September 30, 2021.** (<https://www.lhsc.on.ca/critical-care-trauma-centre/standard-of-care-arterial-line-monitoring>)
- Prakash.R, Manipal Manual of Nursing Procedures, Fundamentals of Nursing. Vol-1, Part A,B Edition 1<sup>st</sup>ed. Noida ( UP).
- 1-36. ADMINISTRATION OF MEDICATION THROUGH A NASOGASTRIC TUBE | Nursing Care Related to the Gastrointestinal and Genitourinary Systems (brooksidepress.org)
- Medication management of patients with enteral feeding tubes | Working party guideline/algorithm | Guidelines



## MEDICAL SURGICAL NURSING

- Smeltzer, Boyer. Textbook of medical surgical nursing. 10th ed. Philadelphia, PA: Lippincott William and Wilkins; 2003.
- Burke KM, LeMone P, Mohn-Brown E, Eby L. Medical surgical nursing care. 3rd ed. Upper Saddle River, NJ: Pearson; 2010.
- Black JM, Hawks JH. Medical surgical nursing: Elimination, renal and urinary systems disorders. Tutiany T, Syarif H, editors. Singapore, Singapore: Elsevier; 2021.
- Swearingen PL, Ross D. Manual of medical surgical nursing care: Nursing interventions and collaborative management. 4th ed. London, England: Mosby; 1998.
- Lynn.P, Cram101 Textbook Reviews. Studyguide for Taylors clinical nursing skills: A nursing process approach by Lynn, Pamela, ISBN 9780781774659. La Vergne, TN: Cram101; 2012.
- Swearingen PL. Manual of medical surgical nursing care: Nursing interventions and collaborative management. 3rd ed. London, England: Mosby; 1993.
- Osborn KS, Watson AS, Wraa CE. Medical surgical nursing: Preparation for practice, volume 1. Upper Saddle River, NJ: Pearson; 2009
- Leeper B. Cardiac review, an issue of critical care nursing clinics - E-book. Saunders; 2011.

## PEDIATRIC NURSING

- Agrawal, R. Deorari, A. Paul, VK. AIIMS protocols in Neonatology. 1st ed. CBS Publishers & Distributors Pvt.Ltd. 2016
- Gupta, P. Essential Pediatric Nursing. 3rd ed. India. CBS Publishers & Distributors Pvt. Ltd. 2014
- Lippincott Williams & Wilkins. Manual of Nursing Practice. 9th ed. India. Wolters Kluwer publication. 2010
- Prakash, R. Manipal Manual of Nursing Procedure. Volume II. India. CBS Publishers & Distributors Pvt.Ltd. 2010
- Clinical Guidelines (Nursing): The Royal Children Hospital Melbourne ([www.rch.org.au/clinicalguide/suctioning](http://www.rch.org.au/clinicalguide/suctioning))
- Suctioning- Paediatric/ Neonate patient ventilated: Royal University Hospital and Saskatoon City Hospital, St. Paul's Hospital revised on March 2017 ([www.saskatoonhealthregion.ca/about/nursingmanual](http://www.saskatoonhealthregion.ca/about/nursingmanual))
- Guidelines for nasopharyngeal suction of a child or young adult: Association of paediatric chartered physiotherapists ([www.apcp.csp.org.uk/system/file/guidelines](http://www.apcp.csp.org.uk/system/file/guidelines))
- Neonatal/Paediatric Arterial Puncture: UTMB Respiratory Care Services revised on May 2018 ([www.utmb.edu/policies\\_and\\_procedures/Non-IHOP/](http://www.utmb.edu/policies_and_procedures/Non-IHOP/))
- Lumbar puncture: Nurse lab ([www.com/lumbar-puncture-spinal-tap/](http://www.com/lumbar-puncture-spinal-tap/))
- Peripheral Intravenous cannulation Best practice Guidelines. University health Board. Revised on April 2020 (<http://www.wales.nhs.uk/sitesplus/documents/863/18-E-038%20ABM%20peripheral%20cannula%20guidelines%20April%202017.pdf>)
- Service Guidance and Standard for Phototherapy Units. British Association of Dermatologist. Revised on March 2018 (Service Guidance and Standards For Phototherapy ([bad.org.uk](http://bad.org.uk)))
- Guideline on Women and babies: Phototherapy- Nursing Management of the Neonate: Health Sydney Local health District. Reviewed on December 2017 (Women and babies: Phototherapy – Nursing management of the neonate ([nsw.gov.au](http://nsw.gov.au)))

## **MATERNAL AND NEONATAL HEALTH NURSING**

- Dutta, DC. 2019, Textbook of Obstetrics, Ninth edition., Jaypee brothers medical publishers Pvt. Ltd: New Delhi.
- Tuitui R.2018, Midwifery and Gynecological Nursing III, 13th edition., Vidyarthi Pustak Bhandar: Kathmandu
- Subedi D., Gautam S.2017, Midwifery Nursing III, 3rd edition., Medhavi Publication: Kathmandu.
- Subedi D., Gautam S.2019, Midwifery Nursing II, 4th edition., Medhavi Publication: Kathmandu.
- Subedi D., Gautam S.2019, Midwifery Nursing I, 4th edition., Medhavi Publication: Kathmandu.
- Prakash R.2008, Manipal manual of Nursing procedures Volume II, 1 st edition., CBS publishers Pvt.Ltd: New Delhi.
- Ministry of Health and Population, National Health Training Center, Maternal and newborn care 2071

## **PSYCHIATRIC NURSING**

- Ahuja, N. A Short Text of Psychiatry. 7 th ed. New Delhi: Jaypee Brothers; 2011
- Prasai, D. Mental Health & Psychiatric Nursing. 4 th ed. Dillibazaar, Kathmandu: Makalu Publication House; 2018
- Shreevani, R. A Guide to Mental Health & Psychiatric Nursing. 3 rd ed. New Delhi: Jaypee Brothers; 2018
- Sharma, C. Sharma, P. Essentials of Psychiatric & Mental Health Nursing. 2 nd ed. Kathmandu: Saurav & Awish publication; 2016
- Stuart, G. Principle & Practice of Psychiatric Nursing. 10 th ed. St. Louis, Mosby Inc; 2013
- Townsend. M, Psychiatric Mental Health Nursing. 6 th ed. Philadelphia: F. A. Davis company; 2009



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**Thank you !!**