

Part 1

Nursing Foundations

Nursing Knowledge Tree
An Initiative by CBS Nursing Division

Editor

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LIST OF PROCEDURES

1. Admission of the Patient	3	11.2 Measuring Blood Glucose Level Using a Glucometer	135
1.1 Admitting a Patient in the Hospital	3		
2. History Taking and Physical Examination	8	12. Hot and Cold Applications	137
2.1 History Taking and Physical Examination of the Patient	8	12.1 Hot Fomentation	137
3. Discharge of the Patient	15	12.2 Application of Hot Water Bag	140
3.1 Discharging a Patient from the Hospital	15	12.3 Steam Inhalation	143
4. Transferring the Patient	18	12.4 Sitz Bath	146
4.1 Transfer of Patient from One to Another Location	18	12.5 Ice Cap	149
5. Vital Signs	23	12.6 Tepid Sponging	152
5.1 Checking Temperature	23	13. Infection Control	154
5.2 Assessment of Pulse	27	13.1 Hand Washing	154
5.3 Monitoring Respiration	31	13.2 Using Personal Protective Equipment	160
5.4 Measuring Blood Pressure	33	14. Decontamination of Equipment and Unit	167
6. Preparation of Patient's Unit	36	14.1 Antiseptics and Disinfectants	167
6.1 Bed Making	36	15. Pre- and Postoperative Care	171
7. Hygienic Care	46	15.1 Wound Dressing/Bedsore Dressing	171
7.1 Care of the Eyes	46	15.2 Bandaging	174
7.2 Oral Hygiene	49	15.3 Splints and Slings	182
7.3 Hair Care	54	15.4 Oxygen Administration	188
7.4 Pediculosis Treatment	57	15.5 Incentive Spirometry	194
7.5 Sponge Bath/Bed Bath	60	16. Routes of Medication Administration	197
7.6 Back Care	64	16.1 Administering Oral Medication	197
7.7 Back Massage	67	16.2 Administration of Intradermal Injection	200
7.8 Pressure Point Care	71	16.3 Administration of Subcutaneous Injection	204
7.9 Use of Comfort Devices	75	16.4 Administration of Intramuscular Injection	207
7.10 Hand and Foot Care	79	16.5 Instilling Medication into Ear	213
8. Bowel Elimination	82	16.6 Administering Nasal Drops	215
8.1 Administration of Enema	82	16.7 Instilling Eye Drops	218
8.2 Rectal Suppository Administration	90	16.8 Application of Eye Ointment	221
9. Alignment and Mobility	93	16.9 Topical Application	222
9.1 Positioning	93	16.10 Maintenance of Intravenous Fluid	226
9.2 Moving, Lifting, and Transferring the Patient	106	16.11 Measuring Intake and Output	231
10. Assistance/Collection of Specimen for Investigations	114	17. Care of the Deceased	233
10.1 Collection of Specimen	114	17.1 Care of the Deceased	233
11. Performing Lab Tests	129	18. Nutrition	238
11.1 Urinalysis	129	18.1 Feeding and Nutritional Care of Patients Admitted to the Hospital	238

15. PRE- AND POSTOPERATIVE CARE

PROCEDURE 15.1 WOUND DRESSING/BEDSORE DRESSING

Key Terms

- **Aseptic:** Technique to prevent microbial contamination and maintain sterility.
- **Comfort:** Ensuring physical ease and minimizing pain or distress for the patient.



INTRODUCTION

Our body has a protective covering of skin and subcutaneous tissues. Any trauma either intentional or unintentional results in wound, which breaks the skin continuity, mucous membranes, bones or any body organ. Dressing is cleaning a wound and applying protective sterile covering using aseptic technique with or without medication. There are various types of dressings used on the basis of location, size, type of wound, type and amount of exudates and frequency of change of dressing.

PURPOSES

- To support the wound site
- To protect the wound from contamination
- To maintain a moist wound environment
- To protect the wound from further injury
- To promote healing
- To promote physical, psychological and aesthetic comfort.

INDICATIONS

- Prevents microbial contamination.
- Facilitates tissue repair.

CONTRAINDICATIONS

- Clean, dry healing wound.
- Active bleeding present.

Points to Remember

- Maintain strict asepsis to prevent the cross infection.
- Use one dressing set for a single dressing only.
- Dressing should not be done immediately after sweeping and dusting, wait for 15–20 minutes.
- Avoid coughing, talking and sneezing when wound is open.
- Wash hands thoroughly before and after procedure.
- Maintain sterile field around wound by spreading drape sheet.
- Clean wound from center to periphery.
- Disinfect all articles thoroughly after use.

ARTICLES

The articles used are shown in Figure 1.



1. Disposable gloves (clean or sterile): one pair for removing the dressing and another pair for redressing.
2. Plastic bag or kidney tray
3. Measuring device
4. Cotton-tipped applicators
5. Artery and thumb forceps
6. Hand rubs
7. Sterile dressing pack
8. Mackintosh or towel
9. Topical cleansing agent (normal saline, betadine, H₂O₂)
10. Sterile dressing (gauze, transparent)
11. Documentation record
12. Screen

FIGURE 1: Tray for wound dressing

PRELIMINARY ASSESSMENT

- Identify the patient
- Check the condition of the bedsore/wound
- Check the physician's orders for the type of dressing to be applied and the specific instructions. If any, regarding the cleaning solutions
- Assess the consciousness of the patient and the ability to follow instructions
- Assess the abilities and limitations of the patient
- Assess patient's level of comfort and need for pain medication
- Determine if the patient has allergies to topical agents
- Review order for topical agent or dressing. Spread mackintosh and draw sheet under the area to be dressed
- Assemble the articles.

PROCEDURE

Steps	Procedure	Rationale
Preprocedural steps		
1.	Explain the procedure to the patient	Reduces anxiety, ensures cooperation.
2.	Provide privacy to the patient	Maintains dignity.
3.	Screen the patient or close the room door. Position the patient to allow dressing removal.	Prevents interruptions. Allows safe, comfortable dressing removal.
Intraprocedural steps		
1.	Perform hand hygiene and apply clean gloves. Remove dressing and place in a yellow plastic bag	Prevents infection and controls contamination.



Hand hygiene

- | | | |
|----|---|---|
| 2. | Assess wound. All pressure ulcers should be individually assessed. Note the color, type, length, width, and depth of the wound. | Examine each pressure ulcer individually, noting color, type, size, length, width, and depth. |
|----|---|---|



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Steps	Procedure	Rationale
		
3.	Assess the peri-wound skin, checking for maceration, redness, and denuded areas.	Detects early signs of skin breakdown or infection, allowing timely intervention and preventing wound deterioration.
4.	Change the gloves. Wear the sterile gloves.	Maintains asepsis and prevents contamination of the wound during dressing.
5.	If there is an ulcer, thoroughly cleanse it with normal saline or a cleansing agent. Use an irrigating syringe for deep ulcers.	Removes debris and exudate, reducing microbial load and promoting wound healing.
		
6.	Clean the wounds from inner to outer or center to periphery. Use one swab for one stroke only.	Prevents spread of infection from the wound to surrounding healthy skin.
7.	Apply topical agents as prescribed (enzymes or hydrogel or calcium alginate). Apply a dressing (gauze or transparent) directly over the wound. Secure the dressing in place.	Promotes healing, maintains a moist environment, and protects the wound from contamination.
		
8.	Remove gloves and dispose of the infected soiled dressing. Perform hand hygiene.	Prevents cross-contamination and maintains infection control.

Contd...

Steps	Procedure	Rationale
		
A		B
Postprocedural steps		
1.	Help the patient attain a comfortable position in bed	Ensures comfort and safety.
2.	Remove the mackintosh and the towel	Maintains hygiene and patient comfort.
3.	Replace the bed linen, if necessary	Organizes materials for proper cleaning.
4.	Take all the articles to the utility room	Organizes materials for proper cleaning.
5.	Discard the soiled dressings in the yellow bin	Prevents infection and contamination.
6.	Clean the instrument with the disinfectant solution and dry it. Replace the articles in the proper place	Ensures asepsis for future use.
7.	Wash hands	Prevents cross-contamination.
8.	Return to the bedside to assess the comfort of the patient	Confirms well-being post-procedure.
9.	Tidy up the bed and unit of the patient.	Maintains a safe and clean environment.

COMPLICATIONS

- Active uncontrolled bleeding.
- Severe tissue ischemia.
- Presence of dry necrotic tissue

SPECIAL CONSIDERATION

- **Pediatric:** Use gentle handling and distraction techniques to reduce fear and pain.
- **Geriatric:** Ensure fragile skin protection and avoid excessive pressure during dressing.

DOCUMENTATION

- Record wound size, color, exudate, and surrounding skin condition.
- Document dressing type, topical agents used, and any complications.
- Note patient's comfort, pain, and response.

PROCEDURE 15.2 BANDAGING



See & Perceive

Learn through
Real-time/Infographic video

PGI NINE Clinical Nursing Procedures (PHYGTAL)

Covered in e-CBSPD app

Key Terms

- **Circular:** One complete turn around a body part.
- **Figure-of-eight:** Overlapping turns forming a figure 8, for joints.
- **Reverse spiral:** Turns overlap in opposite direction, used for tapered limbs.
- **Spiral:** Successive overlapping turns along a straight limb.

INTRODUCTION

It is a process by which a wound or injured part is covered and protected with the help of a bandage. When done correctly, it shows the art as well as the knowledge of the nurse about wound care. Bandaging is the process of covering a wound or injured part using the most appropriate bandage.

PRINCIPLES OF BANDAGING

- Make the patient comfortable
- Hold the head of the bandage in the right hand when bandaging a left limb and vice versa
- Use bandage of correct width
- Support the part to be bandaged throughout the procedure
- Bandage should not be too loose or too tight that it interferes with circulation
- When possible, leave fingertips or toes exposed to check blue discoloration of skin
- Never apply adhesive tape directly over the wound
- Always stand in front of the patient, except when applying capeline bandage
- Never unroll more than a few inches of bandage at a time
- Apply bandage from below to upward maintaining even pressure throughout
- Pad the axilla or groin so that two surfaces of skin do not touch each other beneath the bandage (contractures)
- Initiate and terminate the bandaging with 2–3 circular turns
- Never initiate or terminate bandage turns directly over the wound
- End the bandage on the outer side of the body. Do not end a bandage on exact wound
- Whenever possible, leave the end of the body part (e.g., the toe) exposed so that it will be able to determine the adequacy of the blood circulation.

TYPES OF BANDAGES

1. **Roller bandages:** Made of different materials and are of various lengths and width as per the body part to be bandaged.
2. **Triangular bandage:** Made by cutting a piece of linen or calico, not <38 inches square, diagonally into 2 pieces. A triangular bandage has 3 borders. The longest is called the 'base' and the other 2 sides is called the 'sides'. There are three corners; upper one opposite to the base is called the 'point' and the other the 'ends'.
3. **T bandaging:** A method of securing dressings on the chest or pelvis using a T-shaped bandage.

PURPOSES

- To immobilize an injured part and relieve pain
- To support the wound and dressing
- To immobilize a fracture or dislocation
- To prevent contamination of a wound
- To control hemorrhage
- To improve venous blood flow from lower extremities by applying pressure
- To reduce or prevent swelling.

INDICATIONS

- Support injured joints or muscles.
- Immobilize fractures or sprains.
- Protect wounds or dressings.

CONTRAINDICATIONS

- Severe peripheral vascular disease
- Active infection or cellulitis

ARTICLES

The articles are shown in Figure 1.

- **Appropriate size of bandage**
 - Fingers : 1 inch
 - Head, arm, eye and ear : 2–2.5 inches (2 inch)
 - Lower limbs and shoulder : 3–3.5 inches (4 inch)
 - Trunk and groin : 4–6 inches (6 inch)
- Type of bandage according to body part and of appropriate width and length
- **Scissors:** (to cut the bandage)
- **Adhesives/safety pins:** (to secure the bandage)
- **Padding material:** If required to pad the area

- **Kidney tray:** *(to collect the waste)*
- **Mackintosh with towel:** *(to protect the bed linen if have any wound discharge optional).*



1. Types of bandage
2. Scissors
3. Adhesives/safety pins
4. Padding material
5. Kidney tray

FIGURE 1: Tray set-up for bandaging

PROCEDURE

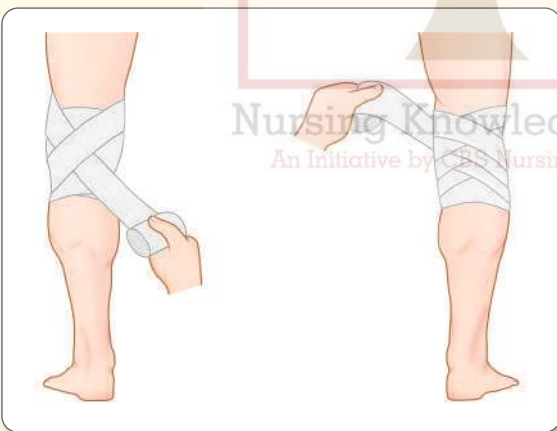
Steps	Procedure	Rationale
Preprocedural steps		
1.	Inspect for the presence of and status of wounds	Open wounds will require a dressing before a bandage is applied
2.	Ask the patient about any pain (its location, intensity, onset, and quality)	Identifies patient discomfort and guides gentle handling.
3.	Note the presence of drainage (amount, color, odor, and viscosity)	Detects infection or abnormal wound healing.
4.	Inspect underlying dressing and if soiled, it must be changed	Ensures hygiene and decides if dressing change is needed.
5.	Choose a neatly rolled bandage of correct width and length	Provides proper support and coverage.
6.	Clean and dry the part to be bandaged	Prevents infection and ensures bandage adherence.
7.	Provide a comfortable position with the part properly supported	Reduces strain and promotes patient comfort.
8.	Whenever possible, bandage the part in its normal position with the joint slightly flexed to avoid putting strain on ligaments and muscles of the joint.	Prevents ligament or muscle strain during immobilization.
Intraprocedural steps		
1.	Cover dressings with bandages at least 2 inches beyond the edges of the dressing to prevent the dressing and wound from becoming contaminated	Prevents contamination of the wound and dressing.
2.	Never roll or unroll a bandage and drag it around a limb as it causes discomfort to patient	Reduces patient discomfort and skin trauma.
3.	Do not unwind more bandage than it is absolutely necessary	Prevents waste and ensures neat application.
4.	Never ignore any complaints of pain or discomfort experienced by patient, it should be investigated and cause should be removed immediately	Prevents injury and ensures safety.
5.	Do not use wrinkled bandages as they would be uncomfortable to the patient.	Ensures comfort and even pressure distribution.
Postprocedural steps		
1.	When completed, fix the bandage with a circular turn and secure it with safety pin or adhesive tape or clips in case of crepe bandage	Keeps bandage in place and maintains support.
2.	Pins, knots or ties should be away from wound because these materials can exert localized pressure and irritation.	Prevents localized pressure, irritation, and injury.

METHODS OF APPLICATION

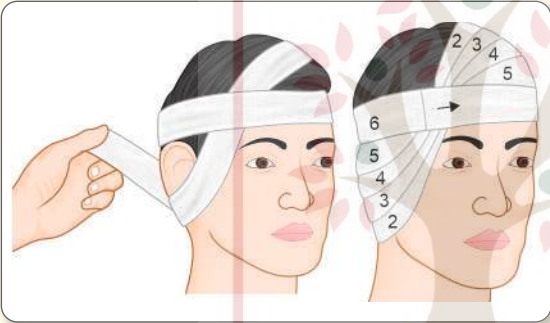
The principle methods of applying the roller bandage are as follows:

Sl. no.	Methods	Application
1.	Circular	 • The roller bandage encircles the part with several layers of bandage on top of the previous one. • Place the end of the bandage over the dressing covering the wound, and wrap it around the head • When wrapping a roller bandage around the head, keep the bandage near the eyebrows and low on the back of head to prevent it from slipping.
2.	Simple spiral	 • It is used to cover a uniform circumference, such as the upper arm and the upper leg. • Make two circular turns to anchor the bandage • Continue spiral turns at about a 30° angle, each turn overlapping the preceding one by two-thirds the width of the bandage • Terminate the bandage with two circular turns and secure the end using adhesive tape.
3.	Reverse spiral	 • It is used on a cone/cylindrical-shaped part such as the forearm or lower leg. • Anchor the bandage with two circular turns • It is made by some spiral turns in which the bandage is reversed downward upon itself by placing the thumb of the free hand on the upper edge of the bandage at each of the limbs • Overlap each previous turn by two-thirds the width of the bandage • Terminate bandage with two circular turns and secure end as described for circular turns.

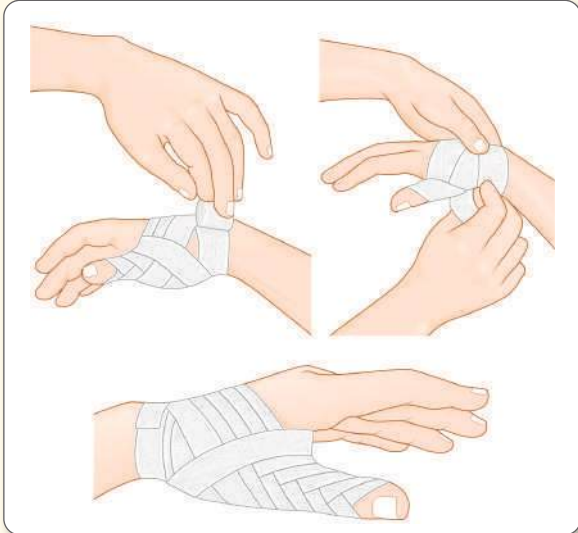
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Sl. no.	Methods	Application
4.	Figure-of-eight 	• Slightly flexed in functional position, it is used for joints, such as the elbow, knee and ankle, and wrist. • Anchor bandage with 2 circular turns • Carry the bandage above the joint, around it, and then below it, making a figure-of-eight • Continue above and below the joint, overlapping the previous turn by two-thirds the width of the bandage • Terminate bandage above the joint with circular turns and secure.
5.	Spica at elbow 	• Place a cotton pad in the armpit. • Take a 4-inch bandage, initiate with two circular turns • Make two spiral turns, so that the bandage reaches the shoulder. Then take a bandage over the shoulder, toward the back, and under the opposite armpit • Bring back around the chest and arms, under the armpit pit and over the shoulder once again • New turn needs to cover 2/3 of the previous turn • Repeat until the entire shoulder is covered • End bandage with two circular turns.
6.	Knee bandage (Figure-of-eight) 	• Flex the knee and apply a bandage • Take 2 straight/circular turns over the knee cap • Take a turn below and above, covering 1/3rd of the previous turn • Continue the turns below and above the joint until the whole knee is covered around the thigh • Fix the end with adhesive tape.
7.	Head Bandage or capeline bandage 	• It is used to cover the whole scalp; a double-headed roller bandage is used. • Position the patient to sit on a stool or chair and stand behind the patient • Place the center of the outer surface of the bandage in the center of the forehead, with the lower border of the bandage lying just above the eyebrows • Bring the head of the bandage around the temples and above the ears to the nape of the neck when the ends are crossed • Bring the upper bandage around the head and the other end of the bandage over the center of the top of the scalp, and then to the root of the nose • Bring a bandage, which circles the victim's head over the forehead, covering and fixing the bandage, which crosses the scalp. This bandage is then brought back over the scalp

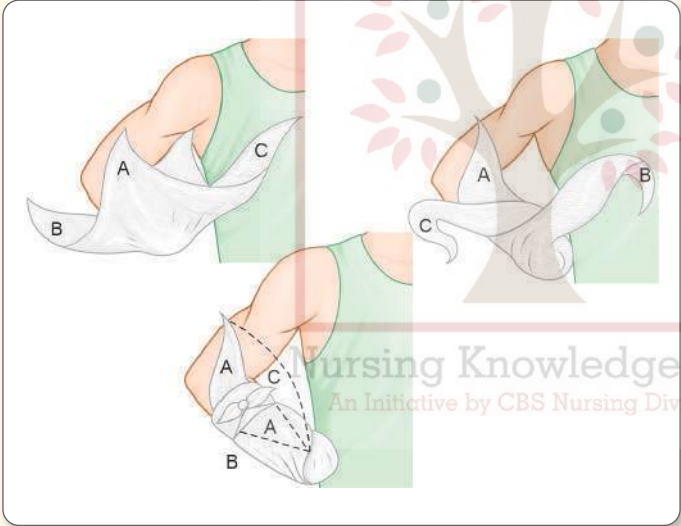
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Sl. no.	Methods	Application
		• Ensure that each turn of the bandage covers 2/3rd of the previous turn • Cross it again at the back and fix using the encircling bandage and turn back over the scalp to the opposite side at the central line, now covering the other margin of its original turn • Repeat the backward and forward turns to alternate sides of the center, each one being in turn fixed by the encircling bandage until the whole scalp is covered. • End the bandaging by taking two circular turns round the head • Secure it with adhesive tape or safety pin over the forehead.
8.	Ear bandage 	• Lay outer surface of bandage against the forehead and carry bandage round the head in 2 circular turns, banding away from the injured ear. • Carry bandage round the back of the head on the unaffected side and then down the nape of the neck • Repeat the turns with each turn being slightly higher than previous one • Bring bandage slightly lower as it covers the hair • Continue turns until whole ear on the affected side is covered and complete the bandage by 2 circular turns around the forehead • Secure it with adhesive tape or safety pin, where all the turns cross one another.
9.	Eye bandage 	• Lay the outer surface of the bandage against the forehead and take 2 circular turns around the head away from the injured eye. • Carry a bandage, round the head until it reaches eye on the affected side • Take it obliquely to the back of head under the prominences on the back of skull and from it upward beneath the eye of the affected side • Take it further over the pad of the eye to circular turn and continue over head to starting point • Repeat this turn 2 or 3 times until the dressing is covered • Finish with safety-pin just above the unaffected eye.
10.	Crossed bandage of both eyes 	• Anchor bandage with circular bandage around the head • Continue obliquely down across back of head, under ear, and obliquely up across bridge of nose joining primary turn • Continue around head to forehead, then obliquely down across bridge of nose and cheek to point below other ear • Repeat procedure, each circular turn covering its predecessor, and each oblique turn overlying upper one-half or two-third of the preceding turn • Continue until eyes are completely covered, apply circular turns around head and secure.

Contd...

Sl. no.	Methods	Application
11.	Elbow bandage 	• Bend/flex the elbow at right angles. Support arm on a table or surface. • Anchor the bandage with two circular turn away from wound site • Proceed the bandage above the elbow joint around it, and then below it, making a figure-of-eight • Carry it above and below the elbow joint, which will overlap the previous turn by two-thirds of the width of bandage • Finish/step the bandage above the joint with two circular turns and secure the end appropriately.
12.	Hand bandage 	• Fix bandage by doing two circular turns over the wrist • Carry it over the back of hand on the back of hand from the little finger • Continue bandage around palm after encircling the finger with one horizontal turn, then give simple spiral turns. • Then again bring bandage to the palm, and return oblique to the wrist • Give one turn over the wrist • Repeat the same steps until the whole hand get covered. Finish bandaging with two circular turn.
13.	Finger bandage 	• With the hand pronated fix the bandage by 2 circular turns around the wrist • Carry the bandage obliquely over the back of hand to the base of the finger to be bandaged, proceeding in order from the little finger side. • Take one spiral turn to the base of the finger nail and then cover the finger by simple spiral turns • Then carry bandage across the back of the hand to the wrist and complete it with 2 circular turns around the wrist • Secure the bandage by safety-pin or adhesive tape.
14.	Thumb spica bandage 	• Place the hand so that back of the thumb is uppermost (dorsal side of the thumb) • Encircle thumb with 1 or 2 straight turns so that the lower border of the bandage is in level with root of nail • Carry the bandage back over the back of the hand, around the wrist, and repeat figure-of-eight turns around the thumb • Ensure body of the thumb is completely covered • Complete the bandage with two circular turns around the wrist and secure it with adhesive tape.

Contd...

Sl. no.	Methods	Application
15.	Ankle and foot bandage 	• Make 2 circular turns around the ankle to fix the bandage. • Take an oblique turn across the foot to root of little toe • Make 1 horizontal turn around foot at this level and then carry the bandage back over foot and take a turn around the ankle just above the heel • Repeat the figure of eight turns around the foot and ankle, each turn overlapping the previous one by two-third, of its width, until the whole foot is covered • If the bandage is to be continued up to the leg, the reverse spiral or figure-of-eight turns may be used • Terminate the bandage with 2 circular turns in the ankle.
16.	Stump bandage 	• Use a 4 inch bandage • Make 2 circular turns around the limb and place the end of the bandage at the center of the upper side of the limb • Carry the bandage over the center of the stump to the same level behind holding the turns back and front with the thumb and finger of the other hand • Repeat the recurrent turns over the end of the stump first on the left and then on the right side of the original turn, until the whole of the dressing is covered • Fix the loop with a straight turn around the stump and continue the bandage with figure-of-eight turns around the limb until the dressing is completely covered • Secure with a safety pin.
Postprocedural steps		
1.	The waste is discarded in the respective dustbins	Prevents infection and maintains hygiene.
2.	The articles are washed and dried.	Ensures cleanliness and readiness for reuse.

COMPLICATIONS

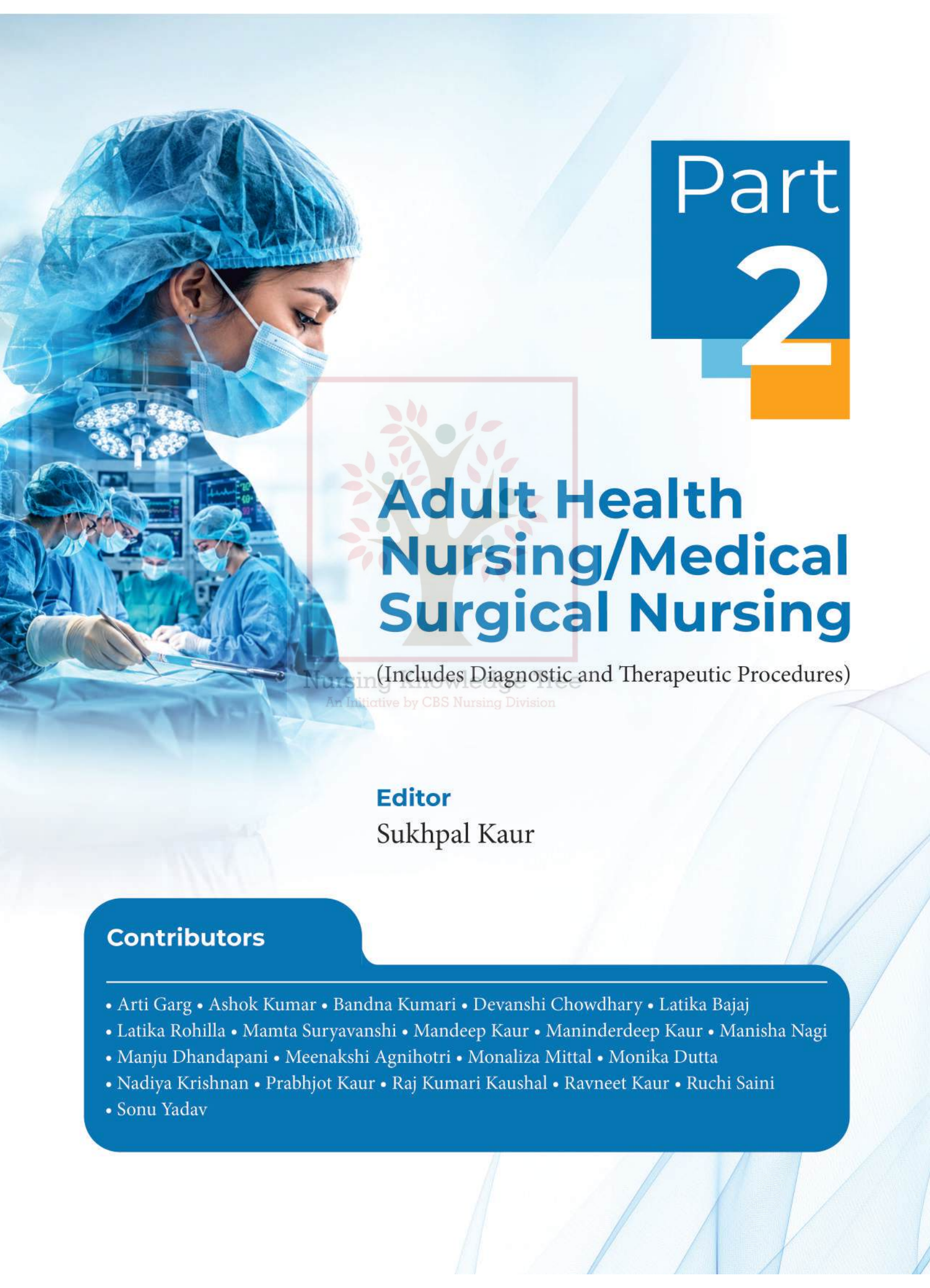
- Impaired circulation
- Skin irritation or breakdown
- Nerve compression
- Swelling (edema) distal to bandage

SPECIAL CONSIDERATION

- **Pediatric patients:** Use gentle pressure, soft bandages, and distraction to reduce fear and pain.
- **Geriatric patients:** Handle fragile skin carefully, avoid excessive pressure, and monitor for slow healing.
- **Patients with circulation issues:** Ensure bandage is not too tight to prevent impaired blood flow.
- **Patients with sensory impairment:** Check frequently for signs of pressure or discomfort.

DOCUMENTATION

Recording should include details of the procedure, patient comfort, site of bandaging, condition of the skin and wound, type of bandage material used, and time of application.



Part 2



Adult Health Nursing/Medical Surgical Nursing

(Includes Diagnostic and Therapeutic Procedures)

Nursing Knowledge Tree
An Initiative by CBS Nursing Division

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LIST OF PROCEDURES

ADULT HEALTH NURSING/MEDICAL SURGICAL NURSING

1. Assessment of the Patient	247	5.5	Application and Removal of Cast.....	363
1.1 History Taking and Physical Assessment	247	5.6	Stump Care	366
2. Respiratory System	258	5.7	Wound Irrigation	369
2.1 Assessment: Respiratory Patterns/Breathing Patterns	258	6. Integumentary System	372	
2.2 Respiratory Assessment Pro Forma	263	6.1 Integumentary Assessment.....	372	
2.3 Managing the Patient with Water-Seal Chest Drainage.....	267	6.2 Assessment of Pressure Sores.....	379	
2.4 Nebulization Therapy	270	6.3 Bedsore Dressing	380	
2.5 Chest Physiotherapy	272	7. Nervous System	383	
2.6 Suctioning—Endotracheal, Oropharyngeal, Nasopharyngeal	278	7.1 Neurological Assessment.....	383	
3. Gastrointestinal System	284	7.2 Neurorehabilitation	398	
3.1 Gastrointestinal Assessment	284	7.3 Electroencephalography	400	
3.2 Colostomy Irrigation	289	8. Genitourinary System	402	
3.3 Colostomy Care	292	8.1 Urinary Catheterization—Female.....	402	
3.4 Total Parenteral Nutrition	294	8.2 Bladder Irrigation	406	
3.5 Insertion and Removal of Nasogastric Tube.....	299	9. ENT	411	
3.6 Nasogastric Tube Feeding.....	303	9.1 Assessment of Ear, Nose, Throat.....	411	
3.7 Jejunostomy Feeding.....	307	9.2 Tracheostomy Care.....	414	
3.8 Bowel Wash	310	10. Reproductive System	419	
3.9 Gastric Lavage/Stomach Wash	312	10.1 Breast Self-Examination.....	419	
3.10 Performing Gastric Suctioning.....	316	11. Burn	422	
4. Cardiovascular System	322	11.1 Burn Assessment	422	
4.1 Cardiovascular Assessment.....	322	11.2 Fluid Management in Burn.....	428	
4.2 Measuring Oxygen Saturation	327	11.3 Prevention of Contractures	431	
4.3 Electrocardiogram (ECG)	330	11.4 Dressing of Burn Wound/Care of Graft Site.....	435	
4.4 Different Types of Central Venous Catheters	337	12. Oncology	440	
4.5 Central Venous Pressure Monitoring	340	12.1 Administration of Chemotherapy.....	440	
4.6 Application of Antiembolic Stockings and Intermittent/Sequential Pneumatic Compression Devices	344	12.2 Care of Patients Undergoing Chemotherapy.....	445	
5. Musculoskeletal System	348	12.3 Care of the Patients Undergoing Radiotherapy.....	448	
5.1 Range of Motion Exercises	348	12.4 Postmastectomy Exercises.....	450	
5.2 Muscle Strengthening Exercises.....	353	13. Critical Care	454	
5.3 Crutch Walking.....	356	13.1 Maintaining the Flowsheets.....	454	
5.4 Pin Site Care/Management of External Fixator	360	13.2 Use of Ventilator.....	462	
		13.3 Care of Central Line.....	470	
		14. Fluid and Drug Calculation	474	
		14.1 Fluid and Drug Calculation.....	474	

14.2	Intravenous Cannulation	479	16.5	Consent Taking	526
14.3	Administration of Intravenous Fluid	484	16.6	Transferring the Patient to Operation Theater	532
14.4	Discontinuing an Intravenous Infusion.....	487			
15.	Medical-Surgical Asepsis and Operation Theater Techniques	488	17.	Postoperative Care	535
15.1	Disinfection of Surgical Instruments.....	488	17.1	Performing a Test Feed Postoperatively	535
15.2	Fumigation.....	494	17.2	Care of Patient in Recovery Room.....	536
15.3	Identification of Surgical Instruments.....	496	17.3	Discharging the Patient from Recovery Room.....	540
15.4	Packing Instruments for Sterilization.....	513	17.4	Care of Surgical Wound.....	541
16.	Preoperative Preparation	516	17.5	Care of Surgical Drain (Noncardiac)	543
16.1	Preparation of Operating Room.....	516	17.6	Ambulation	547
16.2	Preoperative Assessment Checklist.....	518	17.7	Suture Removal.....	551
16.3	Preoperative Skin Preparation.....	521			
16.4	Prenesthetic Medication	524			

DIAGNOSTIC AND THERAPEUTIC PROCEDURES

1.	Assisting in Diagnostic and Therapeutic Procedures	563	1.13	Mammography	605
1.1	Assisting with Arterial Blood Gas Sampling.....	563	1.14	Lumbar Puncture.....	607
1.2	Blood Transfusion	567	1.15	Nursing Care of Patients Undergoing Angiography	614
1.3	Biopsy (Liver and Kidney).....	571	1.16	Positron Emission Tomography.....	620
1.4	Bone Marrow Aspiration	575	1.17	Single-Photon Emission Computed Tomography.....	622
1.5	Chest Tube Insertion.....	578	1.18	Endoscopy.....	624
1.6	Thoracentesis.....	581	1.19	Barium Studies	626
1.7	Abdominal Paracentesis	586	1.20	Caloric Test	629
1.8	Cardiopulmonary Resuscitation	589	1.21	Ear Irrigation.....	631
1.9	X-ray	598	1.22	Eye Irrigation.....	635
1.10	Computed Tomography.....	599	1.23	Urinary Catheterization—Male	637
1.11	Magnetic Resonance Imaging.....	601	1.24	Endotracheal Intubation.....	641
1.12	Ultrasound	603	1.25	Assisting with Electromyography.....	645

5. MUSCULOSKELETAL SYSTEM

PROCEDURE 5.1 RANGE OF MOTION EXERCISES

Key Terms

- **Abduction:** Movement of a body part away from the body's midline.
- **Active exercise:** Physical activity performed independently by the patient using their own muscle strength and effort.
- **Adduction:** Movement of a body part toward the body's midline.
- **Circumduction:** Circular movement of a limb that combines flexion, extension, abduction, and adduction.
- **Extension:** Movement that straightens a joint and increases the angle between two body parts.
- **External rotation:** Rotation of a body part away from the body's midline.
- **Flexion:** Movement that bends a joint and decreases the angle between two body parts.
- **Hyperextension:** Extension of a joint beyond its normal anatomical range.
- **Internal rotation:** Rotation of a body part toward the body's midline.
- **Isometric exercise:** Exercise involving muscle contraction without visible movement of the joint.
- **Isotonic exercise:** Exercise involving muscle contraction with movement of the joint and a change in muscle length.
- **Passive exercise:** Movement of a body part performed with assistance when the patient is unable to move it independently.
- **Pronation:** Rotation of the forearm so that the palm faces downward or posteriorly.
- **Supination:** Rotation of the forearm so that the palm faces upward or anteriorly.

INTRODUCTION

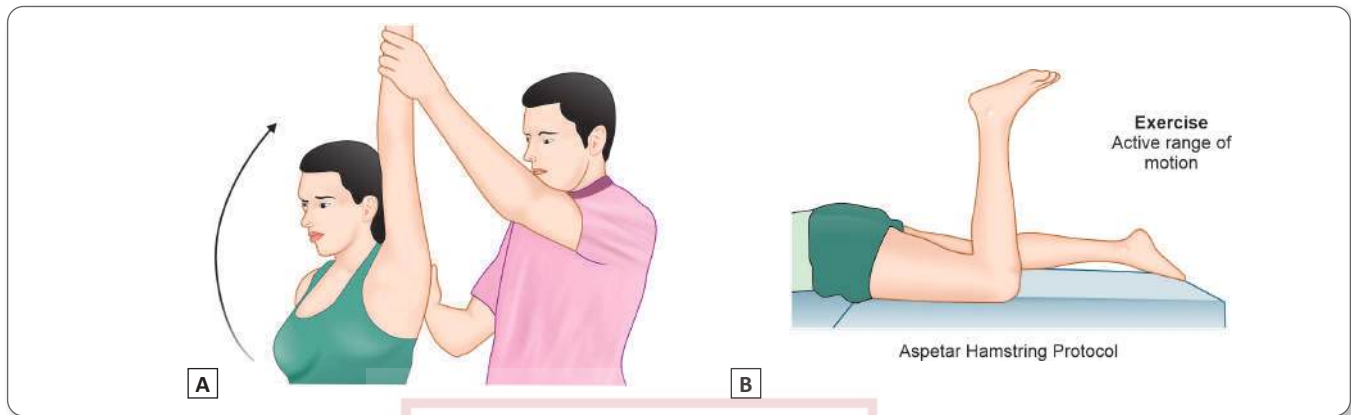
Range of motion (ROM) exercises are therapeutic movements performed independently by the patient or with assistance to move joints through their available range. They help maintain joint flexibility and mobility, promote circulation, prevent joint stiffness and contractures, and support optimal musculoskeletal function. (Fig. 1).



FIGURE 1: Range of motion exercises

CLASSIFICATION

- **Active range of motion exercises:** Exercises in which the patient independently moves the joints through their available range of motion without assistance.
- **Passive range of motion exercises:** Exercises in which a joint is moved through its available range by another person when the patient is unable to move independently. (Fig. 2B).



FIGURES 2A AND B: A. Passive; B. Active exercise

PURPOSES

- To increase muscle strength and endurance.
- To maintain normal physiological function.
- To prevent complications caused by immobility like contractures.
- To improve patient participation in activities of daily living.
- To improve physical activities.
- To increase joint flexibility.

INDICATIONS

- Prevent joint stiffness and maintain mobility.
- Improve circulation and muscle function.

CONTRAINDICATIONS

- Acute pain or joint inflammation.
- Recent fracture or injury.

GENERAL GUIDELINES FOR RANGE OF MOTION (ROM) EXERCISES

- Assess the patient's physical condition, joint mobility, pain level, and any medical restrictions before initiating ROM exercises.
- Explain the procedure and its benefits to the patient to promote understanding and cooperation.
- Encourage active ROM exercises whenever possible to maintain muscle strength, joint mobility, and coordination.
- Perform movements slowly, smoothly, and rhythmically within the patient's comfortable range.
- Support the joint above and below during passive ROM exercises to provide stability and prevent injury.
- Avoid forceful or jerky movements and stop the exercise if the patient experiences pain, dizziness, fatigue, or discomfort.
- Exercise both sides of the body when appropriate and compare the range of movement bilaterally.
- Maintain proper body and joint alignment throughout the procedure.
- Follow the prescribed frequency, duration, and repetitions according to the healthcare provider's order and institutional policy.

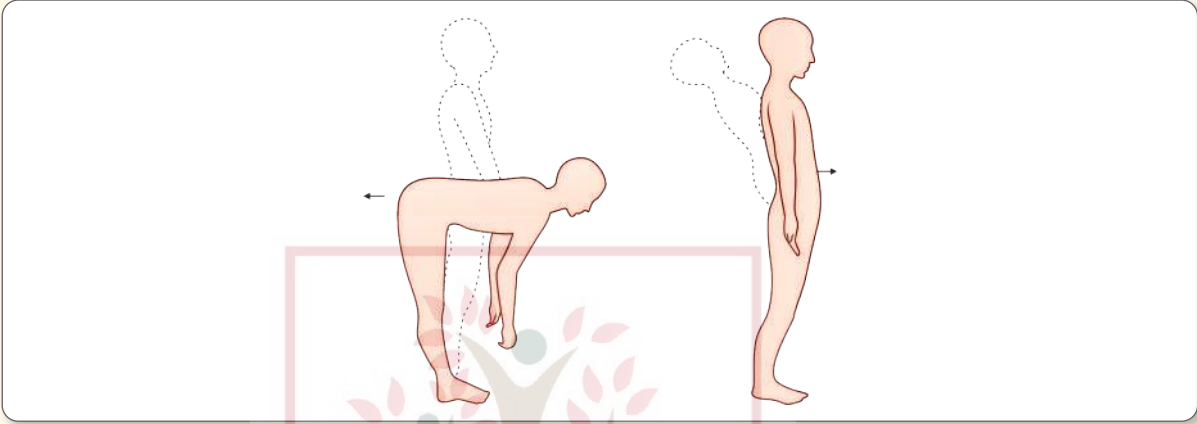
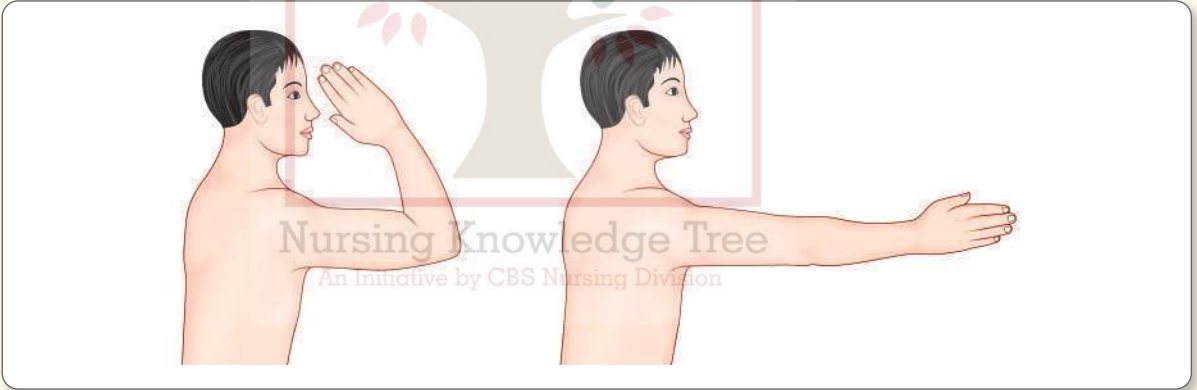
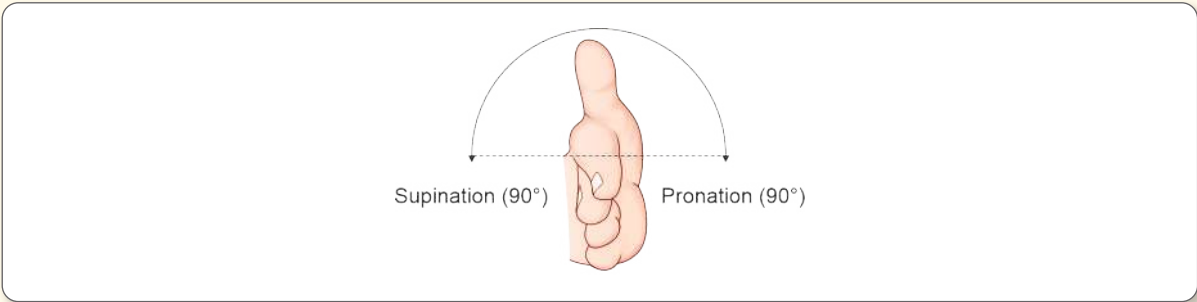
Points to Remember

- Passive range of motion exercise should be done only on patients who are unable to do it on their own.
- Passive ROM exercise should be done to point of slight resistance. Never do ROM exercises beyond capacity of individual that is to the point of discomfort.
- Move body parts smoothly, slowly and rhythmically.
- Expect heart rate, respiratory rate to increase during exercise which return to resting level within 3 minutes, if not, exercises are strenuous for patient.
- If muscle spasticity occurs during movement, stop movement temporarily, but continue to apply slow gentle pressure on part until the muscles relax, then proceed with ROM exercises.

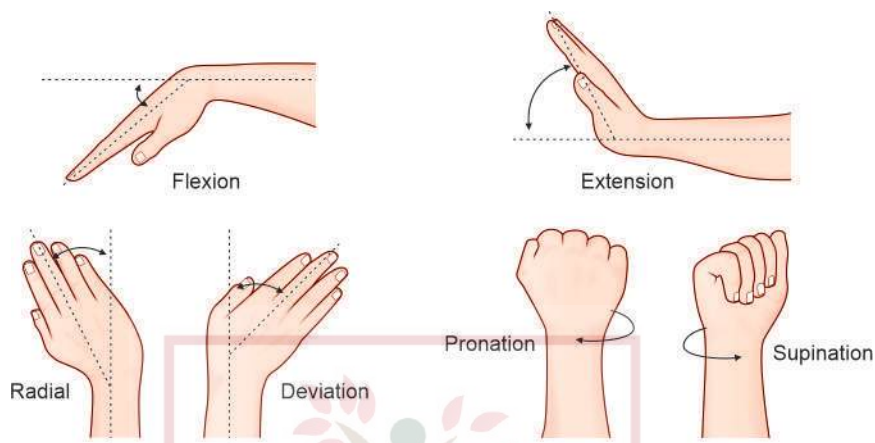
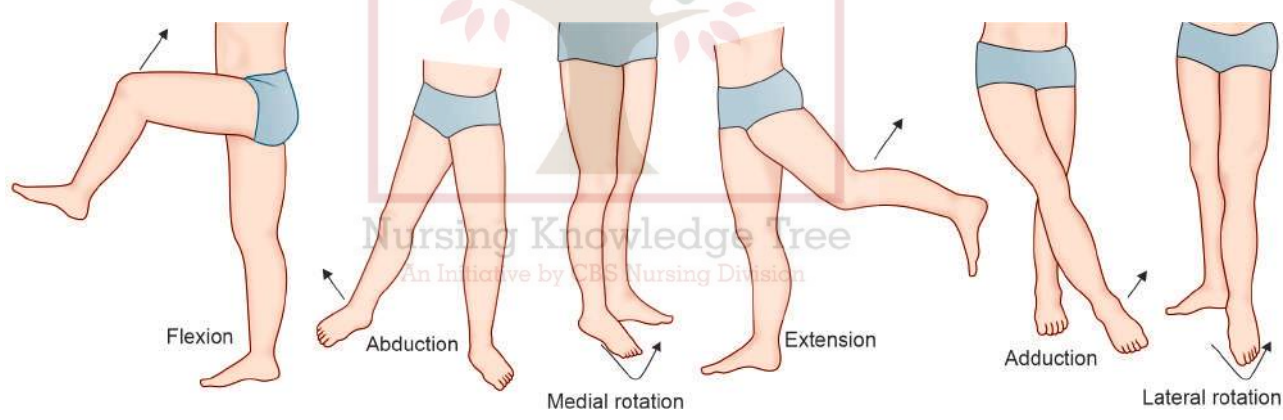
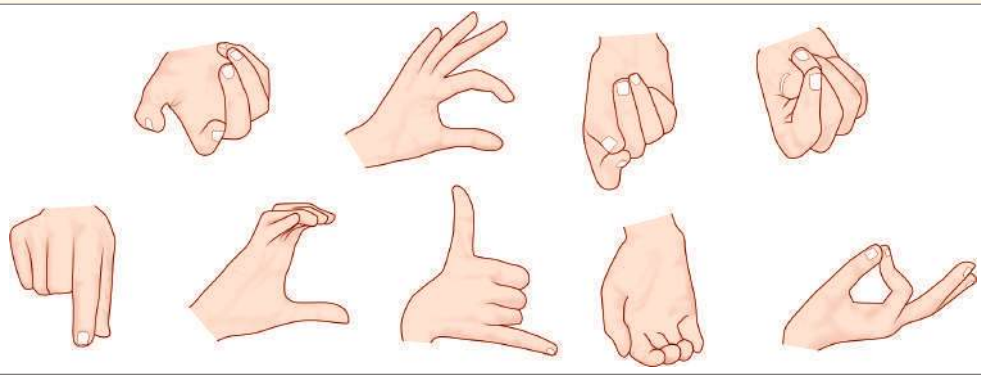
PROCEDURE

Steps	Procedure	Rationale
Preprocedural steps		
1.	Remove all tight clothes and provide a hospital gown or loose clothes	To promote comfort and allow free joint movement during exercises.
2.	Cover the patient with a sheet and assist in assuming a supine position	To maintain proper body alignment and ensure patient comfort.
3.	Explain the purposes of doing exercises to the patient	To gain cooperation and encourage active participation in exercises.
4.	Provide privacy and wash your hands	To maintain patient dignity and prevent the spread of infection.
5.	Expose only the area that is being exercised.	To preserve privacy and prevent unnecessary exposure.
Intraprocedural steps		
1.	Begin ROM exercises systematically from the head and progress downward	To ensure organized and complete joint mobilization.
2.	Neck - Move the head through flexion, extension, lateral, rotation, and hyperextension - Movement of the head is contraindicated in spine surgery, spine trauma, and patients having central vein line.	- To maintain neck joint mobility and muscle flexibility. - To prevent injury and complications.
The diagrams show a person's head and neck in four different positions. Flexion is shown with the head tilted forward, labeled 85°. Extension is shown with the head tilted backward, labeled 70°. Rotation is shown with the head turned to the side, labeled 80°. Lateral flexion is shown with the head tilted to the side, labeled 40°.		
3.	Shoulder - Flexion, extension, hyperextension, abduction, adduction, circumduction, external rotation, internal rotation. - The shoulder should be supported proximally and distally.	- To maintain shoulder joint mobility and muscle function. - To prevent strain and ensure safe joint movement.
The diagrams show a person's arm in two different positions. Abduction is shown with the arm raised away from the body, labeled 180°. Adduction is shown with the arm raised towards the body, labeled 50°.		

Contd...

Steps	Procedure	Rationale
4.	Trunk Flexion, extension, hyperextension, lateral flexion and rotation.	To maintain trunk flexibility, posture, and spinal mobility.
		
5.	Elbow Flexion, extension, pronation, and supination.	To maintain elbow and forearm joint mobility and muscle flexibility.
		
6.	Forearm Pronation and supination. Position the wrist in functional position.	To maintain forearm mobility, promote comfort, and prevent joint strain.
		
7.	Wrist Flexion, extension, hyperextension, and lateral flexion. Position the wrist in a functional position.	To preserve wrist mobility, ensure comfort, and prevent stiffness.

Contd...

Steps	Procedure	Rationale
		
8.	Hip Move the hip through flexion, extension, abduction, adduction, internal rotation, external rotation, and support above and below the joint. 	To maintain hip mobility and prevent strain or injury during movement.
9.	Hand Move through flexion, extension, hyperextension, abduction, adduction, and apposition of the thumb. 	To maintain hand mobility, dexterity, and functional movement.
10.	Knee Move through flexion, extension, abduction, and adduction	To maintain knee joint mobility and support functional leg movement.

Contd...

12. ONCOLOGY

PROCEDURE 12.1 ADMINISTRATION OF CHEMOTHERAPY

Key Terms

- **Cytotoxic spill:** Accidental spill of cytotoxic drugs.
- **Extravasation:** Leakage of IV drug into surrounding tissue.
- **Vesicants:** Drugs that cause tissue damage if leaked outside vein.

INTRODUCTION

Chemotherapy refers to the use of antineoplastic drugs to treat cancer by destroying or inhibiting the growth of tumor cells through interference with cellular functions and reproduction. It is a form of cancer treatment in which medications circulate throughout the body to target and eliminate cancer cells. Chemotherapy may be used alone or in combination with surgery, radiation therapy, or biotherapy, depending on the type and stage of cancer. Its main goals include cure, disease control, and palliation (symptom relief).

Chemotherapeutic drugs are classified based on their action on the cell cycle into cell cycle-specific and cell cycle-nonspecific agents. Cell cycle-specific drugs act on actively dividing cells and target specific phases of the cell cycle, especially the S-phase by inhibiting DNA and RNA synthesis, while others such as vinca alkaloids act on the M-phase by disrupting mitosis. In contrast, cell cycle-nonspecific drugs act on cells regardless of the phase of the cell cycle and generally produce prolonged cellular damage leading to cell death.

ROUTES OF CHEMOTHERAPY ADMINISTRATION

- Intravenous (IV)—Most common.
- Oral (PO)—Tablets or capsules.
- Subcutaneous (SC)—Injection under skin.
- Intramuscular (IM)—Injection into a muscle.
- Intrathecal (IT)—Injection into a cerebrospinal fluid.
- Intraperitoneal (IP)—Injection into a peritoneal cavity.
- Intra-Arterial (IA)—Directly into an artery supplying the tumor.
- Intravesical—Injection into the urinary bladder.

PRINCIPLES FOR HANDLING CHEMOTHERAPEUTIC DRUGS

- Wear appropriate PPE (gloves, gown, mask, eye protection).
- Prepare drugs in a biological safety cabinet.
- Transport in labeled, leak-proof containers.
- Follow safe administration practices.
- Prevent and manage drug spills promptly.
- Dispose of cytotoxic waste properly.
- Use precautions when handling patient body fluids.
- Ensure regular staff training.
- Conduct health surveillance of healthcare workers.
- Maintain proper documentation and reporting.

TABLE 1: Classification of chemotherapeutic agents

Chemotherapeutic agents	Examples
Alkylating agents	Busulfan, carboplatin, chlorambucil, cisplatin, cyclophosphamide, dacarbazine, hexamethyl melamine, ifosfamide, melphalan, nitrogen mustard, and thiotepa
Nitrosureas	Carmustine (BCNU), lomustine (CCNU), semustine (methyl CCNU), streptozocin
Topoisomerase I inhibitors	Irinotecan, and topotecan
Antimetabolites	Cytarabine, edatrexate fludarabine, 5-fluorouracil (5-FU), FUDR, gemcitabine, hydroxyurea, leustatin, 6-mercaptopurine, methotrexate, pentostatin, 6-thioguanine
Antitumor antibiotics	Bleomycin, dactinomycin, daunorubicin, doxorubicin (Adriamycin), idarubicin, mitomycin, mitoxantrone, plicamycin
Mitotic spindle poisons	Paclitaxel, and docetaxel
Plant alkaloids	Etoposide, teniposide, vinblastine, vincristine (VCR), vindesine, vinorelbine

PURPOSES OF CHEMOTHERAPY

- To treat the systemic disease.
- To reduce tumor size preoperatively.
- To destroy any remaining tumor cells postoperatively.
- To treat some forms of leukemia.
- To kill cancer cells.

Points to Remember

- Use a biologic safety cabinet for the preparation of all chemotherapy agents.
- Wear surgical gloves when handling antineoplastic agents and the excretions of patients who received chemotherapy.
- Wear disposable, long-sleeved gowns when preparing and administering chemotherapy agents.
- Use Luer-Lok fittings on all intravenous tubing used to deliver chemotherapy.
- Dispose off all equipment used in chemotherapy preparation and administration in appropriate, leak-proof, puncture proof containers according to biomedical waste category 5 (Cytotoxic drugs).
- Dispose off all chemotherapy wastes as hazardous materials.

CHEMOTHERAPY DOSAGE CALCULATIONS BY BODY SURFACE AREA (BSA)

Formula for calculating BSA is:

$$BSA = \sqrt{\frac{\text{Weight (kg)} \times \text{Height (cm)}}{3600}}$$

For example, if the weight of the patient is 60 kg and height is 150 cm, then **BSA: 1.58**.

Further, if the dose of cisplatin is 50 mg/m² then multiply it with calculated BSA. The given dose of cisplatin will be 80 mg.

Calculation of dosage for intravenous infusions

- Flow rate = $\frac{\text{Total volume infused in mL}}{\text{Total time of infusion in minutes}} \times \text{drops/mL}$

- Infusion time = $\frac{\text{Total volume to infuse}}{\text{mL/hr being infused}}$

- IV infusion rate in mL/hr = $\frac{\text{Total volume in mL}}{\text{No. of hours}}$

ARTICLES

The articles used in the procedure are displayed in Figure 1.



FIGURE 1: Articles for administration of chemotherapy

PROCEDURE

Steps	Procedure	Rationale
Preprocedural steps		
1.	Explain the procedure to the patient and obtain consent. Educate the patient regarding the adverse effects of chemotherapy and the strategies to manage these effects. Instruct the patients to report any side effects of chemotherapy.	Ensures patient understanding, cooperation, and informed consent while improving awareness of side effects.
2.	Check for the following: - Physician's orders, including any supportive care medications, including premedications, antiemetics, hydration, growth factors, or emergency medications. - Review the patient's medication history, including over-the-counter medications, for possible interactions.	Ensures correct treatment plan and prevents harmful drug interactions.
3.	Check current laboratory values: complete blood count, differential, platelets, liver function tests, and creatinine. Drugs may be withheld in severe neutropenia, thrombocytopenia, or impaired liver or kidney function.	Ensures patient safety by identifying contraindications like myelosuppression or organ dysfunction.
4.	Check the 10 rights like right drug, route, dose, time, patient, evaluation, etc., during drug administration.	Prevents medication errors and ensures safe drug administration.
5.	Calculate the dosage according to milligrams per kilogram (mg/kg) or milligrams per meter squared (mg/m ²) and by body surface area (BSA).	Ensures accurate and safe dosing based on patient body parameters.
6.	Be aware of agents that cause anaphylactic reaction, such as asparaginase, paclitaxel, and docetaxel, so keep the emergency resuscitation equipment and drugs available.	Ensures immediate management of life-threatening hypersensitivity reactions.
Intraprocedural steps		
1.	Insert IV/check for patency of IV line: - Select vein puncture site free from sclerosis, thrombosis, or sac formation, if possible. If the patient has an established IV, assess the site for erythema, pain, or tenderness. - Check for a blood return by aspirating at a Y-site close to the IV catheter. Do not pinch the catheter tubing. - If doubt exists about vein patency or the safety of chemotherapy administration, discontinue the administration and treat as an extravasation if a vesicant chemotherapeutic agent has been used. - Assess the chemoport site for redness, swelling, pain, leakage, or signs of infection. Verify proper needle placement and confirm blood return before administering chemotherapy.	- Ensures safe administration and reduces risk of complications like infiltration or extravasation. - Confirms IV line patency and correct placement in the vein. - Prevents tissue injury, especially with vesicant drugs. - Ensures patency and correct placement of the chemoport, prevents extravasation, and helps identify complications such as infection, thrombosis, or catheter malfunction before chemotherapy administration.
		
	- Monitor for pain; the patient may describe it as localized to severe burning and radiating along with the vein. Examine the site for erythema or swelling. - If extravasation is suspected, stop the infusion immediately and follow the procedure for extravasation.	- Early detection of extravasation or tissue irritation. - Minimizes tissue damage and prevents further drug leakage into surrounding tissues.

Contd...

Steps	Procedure	Rationale
2.	Drug administration: - Use a disposable, absorbent, plastic-backed pad under the work area. - Put on a protective gown, gloves, and eyewear. - Monitor the patient, particularly during the first 15 minutes, for signs of hypersensitivity or anaphylaxis. - Monitor the IV site throughout the infusion.	- Prevents contamination and protects surfaces from cytotoxic drug spills. - Ensures safety of healthcare worker from exposure to hazardous chemotherapy drugs. - Detects early signs of hypersensitivity or anaphylactic reactions for prompt intervention. - Ensures early identification of infiltration or extravasation to prevent tissue damage.
		
Postprocedural steps		
1.	Observe regularly after administration for pain, erythema, induration, and necrosis.	Enables early detection of extravasation-related tissue injury such as pain, redness, swelling, or necrosis.
2.	Monitor for other adverse effects of infusion: - Patient may describe sensations of pain and pressure within the vessel, originating near the venipuncture site or extending 3–5 inches (7.5–12.5 cm) along the vein. Discoloration: Red streak following the line of the vein (called a flare reaction) or darkening of the vein. - Itching, urticaria, muscle cramps, or pressure in the arm caused by irritation of the surrounding subcutaneous tissue.	- Indicates possible vein irritation or early extravasation requiring immediate attention. - Suggests vascular inflammation or drug irritation of the vein. - Sign of hypersensitivity or local tissue irritation due to drug leakage or reaction.

EXTRAVASATION

Extravasation is the process by which any liquid (fluid or drug) accidentally leaks into the surrounding tissues. In terms of cancer therapy, extravasation refers to the inadvertent infiltration of chemotherapy into the subcutaneous or subdermal tissues surrounding the intravenous or intra-arterial administration site (Fig. 3).

Management of Extravasation

- If an extravasation is suspected, stop the infusion of the chemotherapy.
- Disconnect IV tubing and attempt to aspirate all residual chemotherapy in the IV catheter using a syringe to prevent further infusion of chemotherapeutic agent.



FIGURE 3: Extravasation

- Apply warm or cold packs to area for 15–20 minutes four times a day for 24 hours
 - **Cold packs** for injection Dactinomycin, Idarubicin, Daunorubicin, Mechlorethamine, Doxorubicin, Mitomycin-C, Epirubicin, Streptozocin.
 - **Warm packs** for injection Vincristine, Vinorelbine, Vinblastine.
- Notify the healthcare provider.
- If an antidote is available, administer as prescribed. Gently clean the area around the extravasation with an alcohol pad. Inject the antidote subcutaneously in a circular pattern around the site of extravasation using a 25 Gauge needle. 1–5 injections will be needed, depending on the volume of extravasation. Change the needle with each new injection.
- Elevate affected limb if applicable for 48 hours.
- Reapply warm or cold compress as indicated, depending on the chemotherapeutic agent that has been extravasated.

Management of Chemotherapeutic Spill

Chemotherapy spills should be cleaned up immediately by the trained personnel. A spill should be identified with a warning sign so that other person will not be contaminated.

A spill kit contains:

- Heavy duty rubber gloves.
- Respiratory mask for air borne powder spills, goggles, disposable gown.
- Disposable scoop.
- Absorbent pads.
- Absorbent towel.
- Waste disposable bags.
- Container of detergent solution.
- Puncture-proof and leak-proof container.

Chemotherapeutic Spill Management

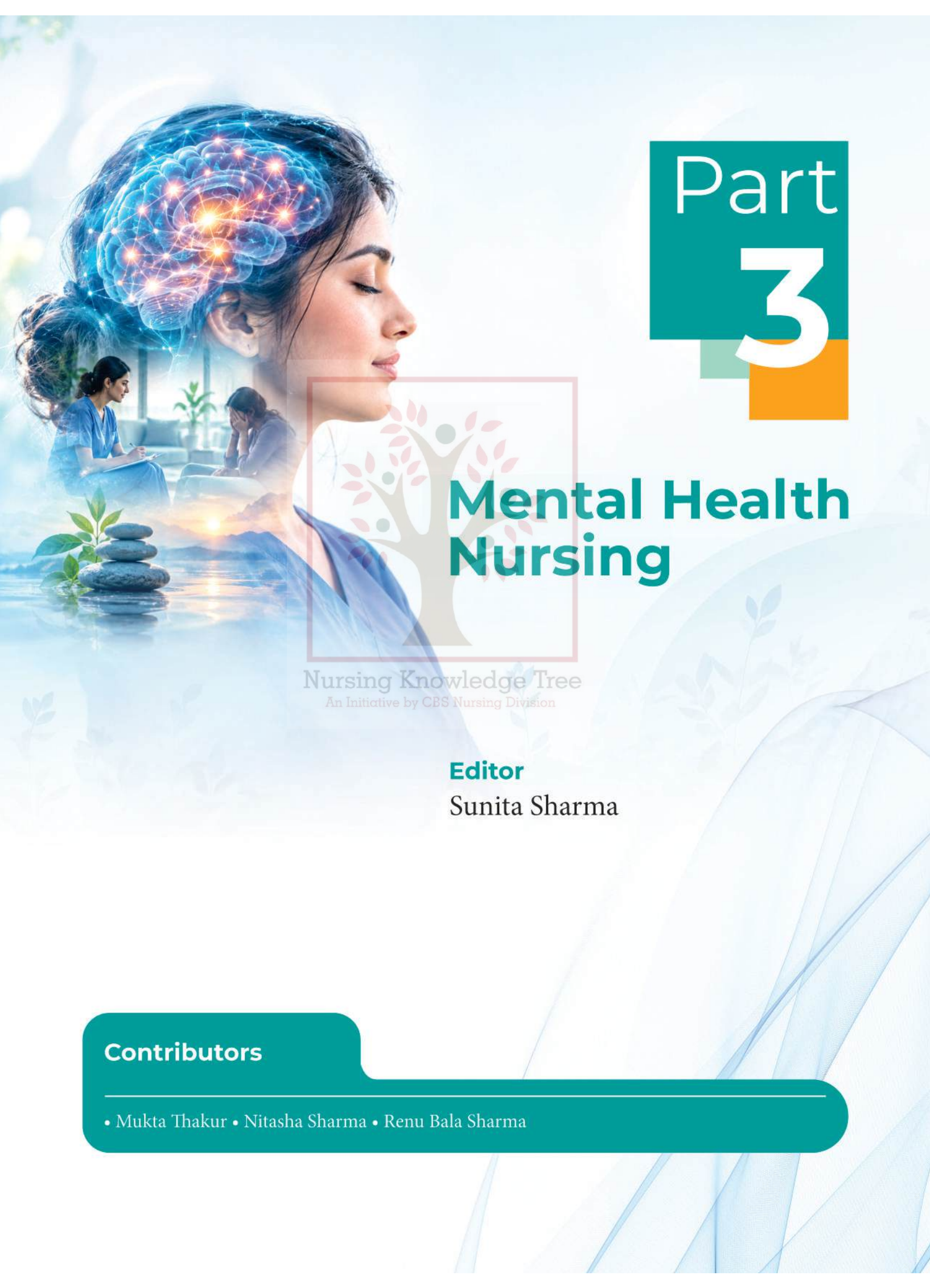
- Alert other staff in the area of the potential hazard; limit access to the area while a spill kit is obtained and then place the warning sign in a prominent position.
- Don personal protective equipment (PPE) in this order: The mask/face shield, the safety glasses, gloves, gown.
- For a liquid spill, carefully place an absorbent pad over the spilled liquid. Absorb as much liquid as possible into the pad.
- If there is broken glass in the spill, carefully pick up the glass pieces using the disposable scoop and place all glass in the puncture-proof container.
- Gather the contaminated pads. Discard all of this waste into the cytotoxic waste container or bag.
- Use the cleaning solution to wash the area of the spill thoroughly, discarding all waste generated into the waste container.
- Rinse the area well with clean water.
- Document the event.

SPECIAL CONSIDERATION

- Always follow the ten rights of drug administration.
- Correct use of personal protective clothing and equipment should be instituted to minimize exposure and health risks.
- Disposable gloves should be used for dispensing. Hands must be washed before and after glove application.
- All disposable protective clothing as well as any disposable materials used while handling chemotherapeutic agents should be disposed off as cytotoxic waste according to the local waste disposal regulatory guidelines.
- Keep information ready for necessary action in the event of accidental exposure.
- Minimize the number of individuals coming in contact with the cytotoxic medications.

DOCUMENTATION

Document side effects experienced by the patient, interventions implemented to manage them, the effectiveness of those interventions, and patient education provided regarding the chemotherapy agent, potential side effects, management strategies, and expected outcomes.



Part 3

Mental Health Nursing

Nursing Knowledge Tree
An Initiative by CBS Nursing Division

Editor
Sunita Sharma

Contributors

• Mukta Thakur • Nitasha Sharma • Renu Bala Sharma

LIST OF PROCEDURES

1. Admission and Discharge Procedure of a Psychiatric Client	651	8. Psychological Testing	695
1.1 Admission Procedure.....	651	8.1 Psychological Testing in Psychiatric Patient.....	695
1.2 Discharge Procedure.....	653	9. Convulsive Therapies	701
2. History Taking of Psychiatric Patient	655	9.1 Electroconvulsive Therapy in Psychiatric Patient.....	701
2.1 History Taking (General).....	655	9.2 Patient Care During Chemical Convulsive Therapy	706
2.2 History Taking (Substance Dependents).....	657	10. Restraining	707
3. Neurological Examination	661	10.1 Restraining in Psychiatric Patient.....	707
3.1 General Neurological Examination.....	661	11. Therapies in Psychiatric Patients	713
4. Conducting Mental Status Examination	673	11.1 Recreational Therapy	713
4.1 Mental Status Examination.....	673	11.2 Group Therapy in Psychiatric Patient	715
4.2 Mini-Mental Status Examination.....	677	11.3 Individual Therapy	720
5. Process Recording	680	11.4 Relaxation Therapies.....	723
5.1 Process Recording	680	11.5 Milieu Therapy.....	727
6. Oral Medication in Psychiatric and Substance-Dependent Patients	686	11.6 Behavior Therapy.....	729
6.1 Administration of Oral Medication to Mentally Ill Patients	686		
7. Monitoring of Postural/Orthostatic Hypotension	689		
7.1 Monitoring of Hypotension in Psychiatric Patient.....	689		

8. PSYCHOLOGICAL TESTING

PROCEDURE 8.1 PSYCHOLOGICAL TESTING IN PSYCHIATRIC PATIENT

INTRODUCTION

A psychological test is an objective and standardized measure of an individual's mental and/or behavioral characteristics. It is a systematic procedure for observing person's behavior or performance and describing it with the aid of a numerical scale or category system.

CHARACTERISTICS OF PSYCHOLOGICAL TEST

There are five important characteristics of a good psychological test that are illustrated below.

Characteristic	Description
1. Objectivity	The test should be free from subjective judgment regarding the ability, skill, knowledge, trait or potentiality to be measured and evaluated.
2. Reliability	This refers to the extent to which the obtained results are consistent or reliable. It is the measure of trustworthiness of obtained results on a given test.
3. Validity	A psychological test is said to be valid if it measures accurately what it intends to measure.
4. Standardization	It refers to the consistency or uniformity of the conditions and procedures for administering a test.
5. Norms	To interpret the results of a psychological test, a frame of reference or point of comparison must exist so that the performance of one individual can be compared with the performance of other, similar individuals. This is obtained from test norms that refers specifically to the average or typical performance of a large group of people similar in nature being tested
6. Practicability	The test must be practicable in terms of the time required to complete it, the length, the number of items or questions, the scoring, and so on. The test should not be too long or difficult to answer or score.

TYPES OF PSYCHOLOGICAL TEST

The psychological tests can be classified in different ways in terms of the construction, the scoring, the administration or in terms of the behavior they are purported to measure. However, we shall limit our discussion to the following common types of psychological tests.

- **Intelligence test:** These tests are used to measure the level of intelligence and the ability of a person to relate to the external environment. The most well-known intelligence scales are discussed below:
 - **Stanford-Binet Intelligence Scale:** The scale is suitable for assessing intelligence for children aged 2 years to adults aged 85 years or higher. The scale produces a full scale IQ, verbal IQ and nonverbal IQ, along with five composite indices including fluid reasoning, knowledge, quantitative reasoning, visual-spatial processing, and working memory.
 - **Wechsler Adult Intelligence Scale (WAIS):** The original WAIS scale was developed by David Wechsler in 1939. The scale is used to assess the cognitive abilities in children aged 10 years to adults. The scale has been subsequently revised to have the latest version WAIS IV.

Index scores verbal	Subtest
Verbal comprehension index	• Similarities: Abstract Verbal Reasoning, e.g., "In what way are an apple and a pear alike?") • Vocabulary: The degree to which one has learned, comprehended, and been able to verbally express vocabulary (e.g., "What is a car?") • Information: Degree of general information acquired from culture (e.g., "Who is the President of India?") • Comprehension (Supplemental): Ability to deal with abstract social conventions, rules, and expressions (e.g., "What does 'Kill two birds with one stone' metaphorically mean?")
Perceptual reasoning index	• Block design: Spatial perception, visual abstract processing, and problem solving. • Matrix reasoning: Nonverbal abstract problem solving, inductive reasoning, spatial reasoning • Visual puzzles: Nonverbal reasoning • Picture completion (supplemental): Ability to quickly perceive visual details • Figure weights (supplemental): Quantitative and analogical reasoning

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Index scores verbal	Subtest
Working memory index	• Digit span: Attention, concentration, mental control (e.g., Repeat the numbers 1-2-3 in reverse sequence) • Arithmetic: Concentration while manipulating mental mathematical problems. • Letter-number sequencing (supplemental): Attention and working memory (e.g., Repeat the sequence Q-1-B-3-J-2, but place the numbers in numerical order and then the letters in alphabetical order)
Processing speed index	• Symbol search: Visual perception, speed • Coding: Visual-motor coordination, motor and mental speed • Cancellation (supplemental): Visual-perceptual speed
Full scale IQ	• Based on the total combined performance of the VCI, PRI, WMI, and PSI
General ability index	• Based only on the six subtests that comprise the VCI and PRI

- **The Raven's Progressive Matrices:** This is a nonverbal intelligence test requiring interactive reasoning about an abstract geometric pattern. The respondent is provided with 60 abstract geometric patterns with a missing part. In each case, the subject must select from several alternatives the one that fits in a missing part of the pattern. The RPM is available in three forms, differing in level of difficulty (Fig. 1). The Standard Progressive Matrices (SPM-1996 Edition) is the form suitable for average individuals between the ages 6 and 80 years. The Colored Progressive Matrices (CPM-1990 Edition) is available for younger children and for special groups. The Advanced Progressive Matrices (APM-1994 Edition) was developed for above-average adolescents and adults.

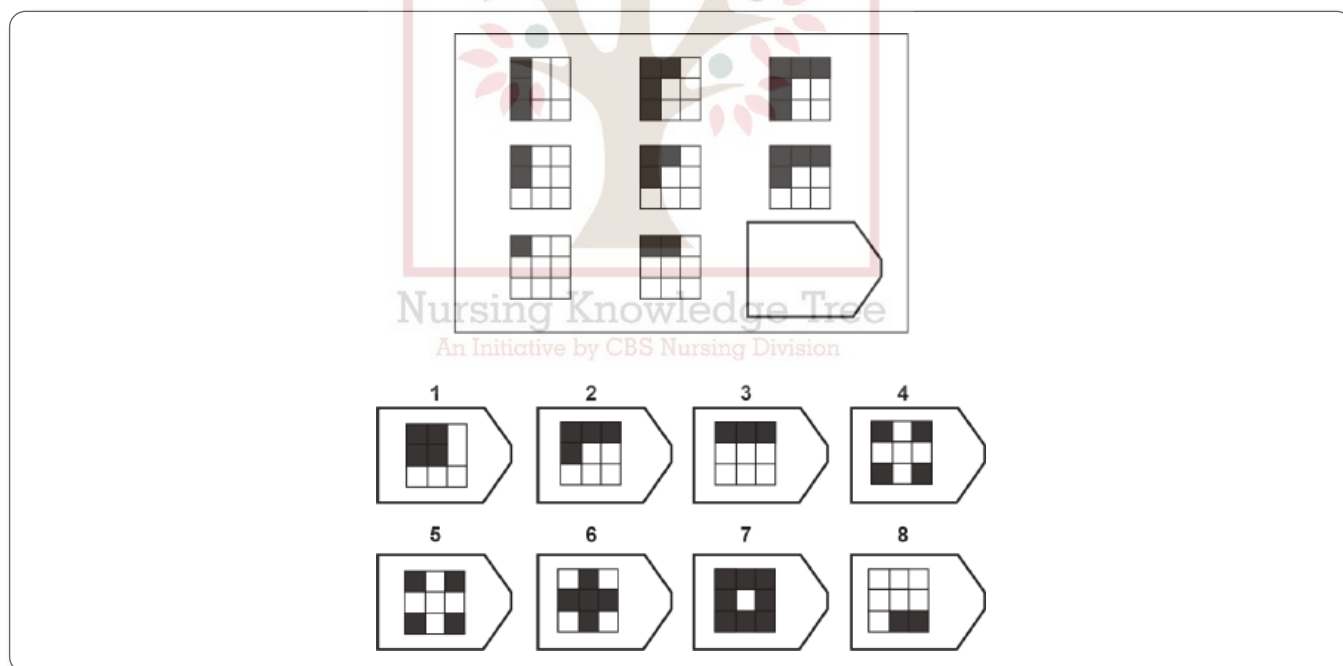
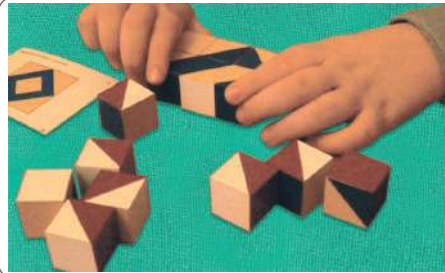
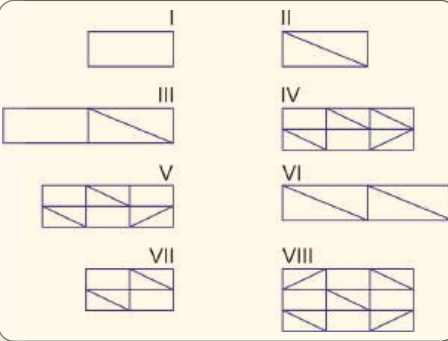


FIGURE 1: Depicts the typical item from Raven's Progressive Matrices

- **Bhatia's Battery:** This test of intelligence was developed by CM Bhatia for Indian population in 1955. The battery comprises 5 subsets as depicted below:

Subtest	Description	Visual representation
Kohs' block design	Designed to assess visuospatial ability, mental coordination, motor skills, and the capacity for analysis and synthesis. The subject is presented with a card showing a colored geometric design and is required to reproduce the same design using colored blocks.	

Contd...

Subtest	Description	Visual representation
Alexander pass along test	Designed to measure intelligence when subjects involve in activities such as shifting colored pieces in an open box and placing them with similar designs.	
Pattern drawing test	In this subtest, there are eight cards on each of which there is a particular form. The subject draws particular figure or pattern after seeing this form.	
Immediate memory test	It is designed to measure the immediate memory of the subject when they immediately repeat the recited digits or words.	
Picture construction test	It is a test in which pieces of five different pictures relating to Indian rural life fragmented into 2, 4, 6, 8 and 12 pieces are placed before the subject who puts them in order and constructs the picture.	

- Aptitude test:** The traditional intelligence test tends to assess the individual's general intellectual level and gives a global score that provides limited information about individual's true abilities. Thus, a need for specialized tests leads to development of aptitude tests. Aptitude is a condition, a quality or a set of qualities which is indicative of the probable extent to which an individual may be able to acquire under suitable training, some knowledge, understanding or skill. The aptitude tests have utility in career counseling, clinical services, personnel selection as well as on-the-job training. The most widely used aptitude tests are described below:
 - Differential aptitude test (DAT):** DAT is developed by Bennett, Seashore, and Wesman (1947, 1982, 1984). The fifth edition of the battery has been designed for use in educational and career counseling of students in grades seven through twelve, and even adults.

Subset	Description
1. Verbal reasoning	This test measures the ability of a student to see relationships among words. The test consists of analogies. For example: is to bark as cat is to
2. Numerical reasoning	This test measures the ability to perform mathematical reasoning tasks. For example, $16 \times 2 + 4y2 + 3 \times 2 = \dots$
3. Abstract reasoning	It is a nonverbal measure of reasoning ability. It assesses how well individuals can reason geometric shapes or design. Each test item is a geometric series in which the elements change according to a given rule. The student is asked to infer the rule/s that are operating and predict the next step in the series. It is a measure of an individual's logical, analytical, and conceptual skills.

Contd...

Subset	Description
4. Perceptual speed and accuracy	This test measures the ability to compare and mark written lists quickly and accurately. This test may predict success in certain kinds of routine clerical tasks, such as filing and coding. Good scores are also desirable for certain jobs involving technical and scientific data.
5. Mechanical reasoning	This test measures the ability to understand basic mechanical principles of machinery, tools, and motion. Each item consists of a pictorially presented mechanical situation and a simply worded question. Items require reasoning rather than special knowledge.
6. Space relations	This test measures the ability to visualize a three-dimensional object from a two-dimensional pattern and to visualize how this object would look if rotated in space.
7. Spelling	This test measures how well the student can spell common English words. The words are presented in a format that includes three correctly spelled words and one misspelled word.
8. Language use	This test measures the ability to detect errors in grammar, punctuation, and capitalization. The test consists of sentences that divide into four parts. The student must choose whether one part has an error in punctuation, capitalization or grammar or whether the sentence is correct as written.
9. Educational aptitude (Verbal reasoning and numerical reasoning)	This combines the scores from verbal and numerical reasoning above. The resulting score provides the best general measure of educational aptitude or the ability to learn from books and teachers and to perform well in academic subjects.

- **General aptitude test battery (GATB):** It is a work-related cognitive test developed by the US Employment Service (USES) that has been extensively used to study the relationship between cognitive abilities, primarily general intelligence, and job performance. **GATB measures the following aptitudes:**

Aptitude	Description	Test(s)
G—General learning ability	The ability to 'catch on' or understand instructions and underlying principles; the ability to reason and make judgments. Closely related to doing well in school.	Vocabulary arithmetic reasoning, three-dimensional space
V—Verbal aptitude	The ability to understand the meaning of words and to use them effectively. The ability to understand relationships between words and to understand the meaning of whole sentences and paragraphs.	Vocabulary
N—Numerical aptitude	The ability to perform arithmetic operations quickly and accurately.	Computation, arithmetic reasoning
S—Spatial aptitude	The ability to think visually of geometric forms and to comprehend the two-dimensional representation of three-dimensional objects. The ability to recognize the relationships resulting from the movement of objects in space.	Three-dimensional space
P—Form perception	The ability to perceive pertinent detail in objects or in pictorial or graphic material. Ability to make visual comparisons and discriminations and see slight differences in shapes and shading of figures and widths and lengths of lines.	Tool matching, form matching
Q—Clerical perception	The ability to perceive detail in verbal or tabular material. Ability to observe differences in copy, to proofread words and numbers, and to avoid perceptual errors in arithmetic computation.	Name comparison
K—Motor coordination	The ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make movement response accurately and swiftly.	Mark making
F—Finger dexterity	The ability to move fingers and manipulate small objects with fingers rapidly or accurately.	Assemble, disassemble
M—Manual dexterity	The ability to move hands easily and skillfully. Ability to work with hands in placing and turning motions	Place, turn

- **Personality test:** The personality assessment can be performed in three broad ways:
 1. Self-report personality inventories
 2. Observation (Situational tests)
 3. Projective techniques

- **Self-report inventories:** These are self-rating questionnaires where the subject describes their own feelings, environment, and reactions of others toward them in the light of questions presented to them. The different types of self-report inventories are given here:

Construct measured	Types
Social traits; specific traits like dominance, ego strength	The Eysenck personality questionnaire Differential personality inventory (DPI) NEO Personality inventory
Evaluate person's ability to adjust in different environments	The Bell adjustment inventory
Screen individuals in particular groups	Cornell index
Evaluate pathological traits like hysteria, paranoia, etc.	The Minnesota multiphasic personality inventory
Inventories to measure attitudes, interests and values	The Kuder inventories

- **Observational methods:** These methods of personality assessment provide subject with structured or unstructured situation, and a careful, impartial and accurate assessment of behavior is done. This observation is used as basis for assessing the personality.
- **Projective tests:** These tests of personality assessment are based on premise that important thoughts, feelings, and motives operate outside of conscious awareness. These tests are based on projective hypothesis which states that if a person is asked to describe or interpret ambiguous stimuli, their responses will be influenced by nonconscious needs, feelings, and experiences. The two most popular types of projective tests are the Rorschach Inkblot Test (Rorschach, 1921) and the Thematic Apperception Test (TAT) (Morgan and Murray, 1935).
 - ◆ **Rorschach inkblot test:** The Rorschach test employs a series of ten bilaterally symmetrical inkblot cards, of which some are black or gray, and others could contain applications of color (Fig. 2). The test taker is asked to provide their perceptions or perspectives on the presented ambiguous inkblot images. This test was designed to look for patterns of thought disorder in schizophrenia and has evolved to include other areas, like personality, emotional disorders, and intelligence. The Rorschach has been standardized using the Exner system and is effective in measuring depression, psychosis, and anxiety.

Administration of the test is conveniently divided in three stages:

1. Performance proper
2. Inquiry
3. Testing of the limits.

On an average, it takes about 1.5 hours to administer and score the test.

Scoring: The scoring as per Comprehensive Scoring System starts with the classification of the responses in four major categories:

Category	Description	Sample scoring key
Location	Part of the blot which produces response	The <i>W</i> response (whole response when whole blot instigates the response). <i>Dw</i> (when examinee attends to unusual details) <i>D</i> response (response based upon usual or normal details of blot) <i>Dd</i> (unusual details) <i>S</i> response (space details)
Determinants	Features of the blot which produces a particular response.	<i>F</i> for form <i>M</i> for movement <i>C</i> for color <i>T</i> for texture
Content	Selecting symbol for content of the response	<i>H</i> (Human response) <i>A</i> (Animal response) <i>An</i> (Anatomical) <i>Na</i> (Nature)

Contd...

Category	Description	Sample scoring key
Popular responses and original responses	Compare given responses with popular responses	Card I : Bat or butterfly Card II : Human figures Card III : Two human figures/dolls Card IV : Animal skin Card V : Moth, vulture, eagle Card VI : Animal skin Card VII : Head or face of women or child Card VIII: Animal figures Card IX : A head or face of male, camel head, tree Card IX : Creature like crab
**All scores are systematically interpreted to make final report.		



FIGURE 2: Rorschach inkblot test card

- ♦ **Thematic apperception test (TAT):** This test is also based upon projective hypothesis found to be useful in revealing a patient's dominant motivations, emotions, and core personality conflicts (Fig. 3). The TAT consists of a series of 20 cards depicting people in various interpersonal interactions that were intentionally created to be ambiguous. It is administered by presenting 8 to 10 of these cards, one at a time, with the following instructions: "Make up a story around this picture. Like all good stories, it should have a beginning, a middle, and an ending. Tell me how the people feel and what they are thinking." It is presumed that the content of imagined stories would provide clues to the underlying dynamics of a subject's interpersonal relationships and self-attitudes. Like the Rorschach, test examiners write each response to the card verbatim. Typical administration time for an eight-card set is about 30–45 minutes depending on the verbal ability and the motivation of the patient.

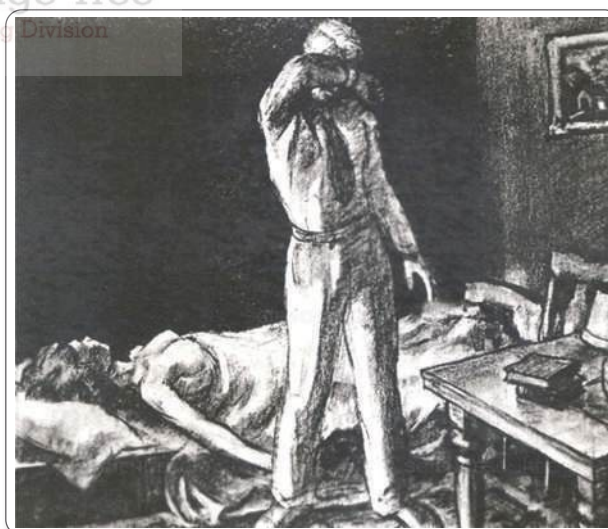


FIGURE 3: Sample thematic apperception test card

- **Neuropsychological testing:** Neuropsychological assessment (NPA) is the systematic evaluation of the brain-behavior relationships in an individual. The purpose of an NPA is to define the client's specific cognitive strengths and weaknesses and to identify the relationships between the neuropsychological findings and the client's medical and psychiatric condition. A neuropsychological assessment also aims to determine the impact of a known or suspected brain-related condition on thinking skills (cognition), behavior and mood. This is undertaken by clinical interview and *via* administration of a set of psychometric scales and tests designed to ascertain current level of function and detect changes, impairments, problems or symptoms experienced by the individual in any aspect of cognition or behavior or in mood. These structured assessments



Part 4

Midwifery/ Obstetrics and Gynecological Nursing

Nursing Knowledge Tree
An initiative by CBS Nursing Division

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LIST OF PROCEDURES

1. Antenatal Care	737	3. Postnatal Care	817
1.1 Antenatal Examination	737	3.1 Postnatal Assessment.....	817
1.2 Antenatal Exercises.....	742	3.2 Breast Care.....	823
1.3 Urine Analysis	749	3.3 Perineal Care	827
1.4 Setting the Trolley and Assisting in Amniocentesis	751	3.4 Postnatal Exercises.....	830
1.5 Daily Fetal Movement Count Chart.....	753	4. Setting the Trolley and Assisting for Procedures	838
1.6 Nonstress Test.....	756	4.1 Insertion of Intrauterine Contraceptive Device (IUCD).....	838
1.7 Preparation of Woman for Obstetric Ultrasound.....	759	4.2 Removal of Intrauterine Contraceptive Device (IUCD).....	846
2. Intranatal Care	763	4.3 Postplacental IUCD Insertion.....	848
2.1 Admitting Woman in Labor Room	763	4.4 Forceps Delivery	850
2.2 Induction of Labor	765	4.5 Destructive Operation	854
2.3 Tray Setting and per Vaginal Examination in Labor	769	4.6 Dilatation and Curettage.....	860
2.4 Assessment of Mother in Intranatal Period.....	773	4.7 Colposcopy.....	863
2.5 Oxytocin Challenge Test.....	780	5. Endometrial and Breast Biopsy	866
2.6 Setting the Trolley and Conduction of Normal Vaginal Delivery	784	5.1 Endometrial Biopsy.....	866
2.7 Performing and Suturing Episiotomy	789	5.2 Breast Biopsy.....	869
2.8 Placental Examination	793	5.3 Hysterosalpingography.....	875
2.9 Setting the Trolley and Assisting for Cesarean Section.....	798	6. Drugs Used in Obstetrics	878
2.10 Immediate Postoperative Care of Mother after Cesarean Section	804	6.1 Drugs Commonly Used in Obstetrics	878
2.11 Assisting in Bakri Balloon Insertion.....	807	7. Gynecological Surgical Care	896
2.12 Assisting with Ventouse Extraction	813	7.1 Preoperative and Postoperative Care of Patients Undergoing Gynecological Surgery	896

2. INTRANATAL CARE

PROCEDURE 2.1 ADMITTING WOMAN IN LABOR ROOM

Key Terms

- **Obstetric history (GTPAL):** Records gravida, term births, preterm births, abortions, and living children to assess maternal risk.
- **Assessment of uterine contractions:** Evaluates frequency, duration, and intensity of contractions to determine labor progress.
- **Per vaginal (PV) examination:** Assesses cervical dilatation, effacement, station, and status of membranes.
- **Fetal heart rate (FHR) monitoring:** Monitors fetal well-being by assessing the baby's heart rate during labor.
- **Partograph recording:** A graphical tool used to monitor labor progress and detect complications early.

INTRODUCTION

When a pregnant woman arrives at the labor room with signs and symptoms of labor, the midwife or nurse must systematically collect relevant history and perform a thorough assessment to ensure safe and effective management of labor. Proper admission procedures help in identifying risk factors, monitoring maternal and fetal well-being, and promoting a safe delivery outcome.

PURPOSES

- To prepare the woman for safe delivery.
- To monitor high-risk woman.
- To induce the labor.
- To monitor fetal and maternal condition.

INDICATIONS

- True labor pains
- Rupture of membranes

CONTRAINDICATIONS

- False labor pains
- No signs of active labor

ARTICLES

- Gauze pieces razor with blade
- Proctoclysis enema and lubricating jelly
- Kidney tray
- Thermometer tray
- Clean gloves
- **Patient records:** Previous records of antenatal care (ANC) follow-up, TT record, high-risk condition, blood group, referral, all investigations.

PROCEDURE

Steps	Procedure	Rationale
Preprocedural steps		
1.	Admit woman with contractions, leaking or bleeding per vagina, reduced or absent fetal movements, and woman with 26 or above weeks of gestation, if she has pregnancy-induced hypertension or heart disease, etc., as per physician's order.	To ensure timely monitoring and prevent maternal and fetal complications.
2.	Admit the woman with a communicable disease, HIV positive, and HbsAg positive in a separate room.	To prevent cross-infection and maintain infection control measures.
3.	If a woman is referred from elsewhere, the reference letter should be pasted in her folder for the physician's reference.	To provide continuity of care and help the physician understand previous management and condition.

Contd...



Steps	Procedure	Rationale
Intraprocedural steps		
1.	Welcome the woman to the unit to develop rapport.	To establish trust, reduce anxiety, and promote effective communication between the woman and healthcare provider.
2.	Collect the history and reason for admission, and ask for the admission slip	Helps in knowing about a woman's condition and needs
3.	Explain the admission procedures to the woman and relatives	Helps in obtaining the cooperation of the patient. Advise them to take the admission slip, make a file, and pay for the same
4.	Help the woman to change clothes, give a hospital gown, and handover valuable items to relatives.	To prevent the chance of losing valuable
 A nurse giving gown to woman		
5.	Check the height and weight of the patient	To obtain baseline data
6.	Check vital signs	Gives information about the patient's general condition
7.	Collect samples of blood and urine	Helps in diagnosing any complications
8.	Assess maternal and fetal conditions	Give information about the conditions of the mother and fetus
9.	Collect the following information from the woman: • Booked or unbooked status • Gestational age: Obstetrical score • Any bleeding or leaking per vagina • Time of onset of labor contractions • Fetal movements • Any other complaints	To assess maternal and fetal condition, identify risk factors, and determine the stage and urgency of labor for appropriate management.
 Assessing maternal and fetal condition		

Contd...

Steps	Procedure	Rationale
10.	To perform a careful abdominal examination, which includes inspection, palpation, auscultation of fetal heart sounds, and monitoring of contractions	Aids in the identification of any deviation from normal conditions
11.	Check the condition of membranes	Gives information about the progress of labor
12.	Prepare the pubic area with a trimmer	To prevent infection and for clear visualization during delivery
13.	Administer an evacuant enema unless contraindicated	To prevent contamination by fecal matter during bearing down
Postprocedural steps		
1.	Instruct the patient to lie on the bed allotted to her in the labor room and inform the physician about her admission.	To ensure proper monitoring, comfort, and timely medical evaluation for safe management of labor.

CONTRAINDICATIONS FOR GIVING ENEMA

- Severe pregnancy-induced hypertension
- Cardiac disease
- Preterm labor
- Leaking per vaginam
- Bleeding per vaginam
- Decreased fetal movements
- Woman in second stage of labor
- Grand multipara
- Malpresentation

DOCUMENTATION

Document time of admission, reason for admission, assessment findings and procedures done in examination room (*serve as a communication between hospital staff*).

PROCEDURE 2.2 INDUCTION OF LABOR

Key Terms

- **Cervical ripening:** It is the process of softening, thinning, and dilating of the cervix in preparation for labor.
- **Oxytocin administration:** It is the controlled use of oxytocin to stimulate uterine contractions for inducing or augmenting labor.
- **Amniotomy:** It is the artificial rupture of the amniotic sac to induce or accelerate labor.
- **Fetal heart rate monitoring:** It is the continuous assessment of the FHR to evaluate fetal well-being during pregnancy and labor.

INTRODUCTION

Induction of labor is the deliberate initiation of uterine contractions after 28 weeks of gestation, using medical or surgical methods, when continuation of pregnancy poses risk to the mother or fetus. It is performed to achieve safe vaginal delivery under careful monitoring by the healthcare team.

PURPOSES

- To prevent risks of continuation of pregnancy to the mother or fetus.
- Preeclampsia and eclampsia.
- Maternal medical disorders (e.g., diabetes mellitus, chronic renal disease).
- Postmaturity (post-term pregnancy).
- Abruption placentae.
- Intrauterine growth restriction (IUGR).
- Rh isoimmunization.
- Premature rupture of membranes (PROM).
- Fetus with major congenital anomaly.
- Intrauterine fetal death (IUFD).
- Oligohydramnios.
- Polyhydramnios.

INDICATIONS

- Post-term pregnancy
- Preeclampsia/Eclampsia
- Premature rupture of membranes
- Intrauterine growth restriction
- Intrauterine fetal death (IUFD)

CONTRAINDICATIONS

- Placenta previa
- Cephalopelvic disproportion (CPD)
- Transverse lie
- Previous classical cesarean section
- Fetal distress requiring immediate cesarean section

ARTICLES

- Handwashing article for cleaning hands (*to prevent infection*).
- Screen (*for providing privacy*).
- Spot light or flash light (*for proper visualization of vein for insertion of venflon*)
- Stethoscope.
- Mask and apron to *maintain asepsis and prevent cross infection*, sterile gloves (*to maintain asepsis and prevent cross infection*)
- **Tray containing following items (Figs 1 to 3):**
 - Small mackintosh (*to prevent soiling of bed sheet*).
 - Article for cleansing the skin—spirit, betadine, adhesive plaster, sterile cotton swabs, kidney tray.
 - Venflon (*for infusion of oxytocin in normal saline*).



FIGURE 1: A tray containing articles for induction of labor by oxytocin injection

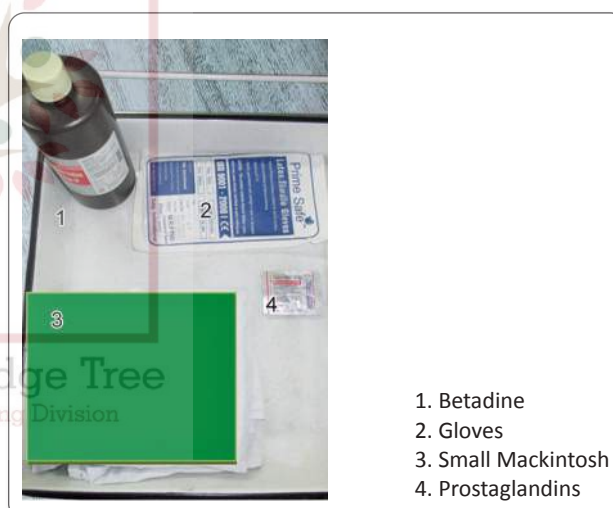


FIGURE 2: Articles needed for medical induction of labor



FIGURE 3: Articles needed for surgical induction of labor

- A sterile IV set (*for giving oxytocin solution*).
- Disposable syringe.
- Distilled water (*for oxytocin preparation*).
- Normal saline solution (*for preparing oxytocin solution for induction of labor*).
- **Medication:** Oxytocin/Cerviprime/Mifepristone.

PROCEDURE

Induction of Labor by Oxytocin

Steps	Procedure	Rationale
Preprocedural steps		
1.	Check the written order carefully	To avoid any mistakes
2.	Explain the procedure to the mother	To obtain cooperation and reduce anxiety.
3.	Wash hands	To prevent cross-infection
4.	Ask mother to void	To empty the bladder and promote comfort.
5.	Check fetal heart rate, uterine contractions, abdominal, and vaginal findings	To assess the maternal and fetal conditions at baseline.
6.	Give an enema (if prescribed)	To empty the bowel before the procedure.
7.	Prepare the perineal area (shaving if indicated)	To minimize the risk of infection.
8.	Keep all articles ready	To ensure a smooth and timely procedure.
Intraprocedural steps		
1.	Place the Mackintosh under the mother's arm.	To protect the bed from accidental spillage and maintain cleanliness.
2.	Set up the IV tubing, pump, and adjust the drops/min.	To ensure accurate and controlled administration of medication.
3.	Add the loaded oxytocin in the IV bottle after accurate dose calculation, prescribed by the doctor.	To prevent dosage errors and ensure safe induction of labor.
Postprocedural steps		
1.	Observe uterine contraction	For intensity, duration, and frequency, and record accurately
2.	Record fetal heart sound throughout the course of the drip.	To continuously assess fetal well-being during induction.
3.	Watch for the vital signs of the mother	To detect early signs of maternal complications.
4.	When strong contraction lasting over 60 seconds and occurring frequently with intervals <3 minutes, tonic uterine contraction, fetal distress, occurrence of increased or decreased fetal movement, and notify the doctor immediately.	To prevent uterine hyperstimulation and fetal compromise.
5.	Gradually increase the drops once prescription of doctor, ensuring that everything is normal.	To achieve effective contractions safely without causing complications.
6.	Contraindications of induction of labor are cephalopelvic disproportion, fetal distress, previous cesarean section, multiple birth, heart conditions, prematurity, and unengaged presentation.	To avoid serious maternal and fetal risks.

Induction of Labor by Prostaglandin

Steps	Procedure	Rationale
Preprocedural steps		
1.	Approach the woman pleasantly	To establish rapport
2.	Check the written order carefully	To avoid any mistakes
3.	Keep all the articles ready	To save time
4.	Explain the procedure to the mother	To reduce anxiety
5.	Wash hands	To prevent cross-infection
6.	Provide privacy	To reduce anxiety

Contd...

Steps	Procedure	Rationale
Intraprocedural steps		
1.	Assist the doctor in inserting prostaglandin (Misoprostol) gel into the posterior fornix close to the cervix.	To promote cervical ripening and initiate uterine contractions for labor induction.
Postprocedural steps		
1.	Advise the woman to stay recumbent as contraction begins.	To ensure proper absorption of the drug and prevent its leakage.
2.	Observe uterine contraction for intensity, duration, and frequency, and record accurately.	To monitor progress of labor and detect hyperstimulation.
3.	Record fetal heart sound.	To assess fetal well-being and detect fetal distress early.
4.	Watch for vital signs of the mother.	To identify maternal complications such as hypertension or shock.
5.	The doctor must be notified immediately for any abnormal observation.	To ensure prompt medical intervention and prevent complications.

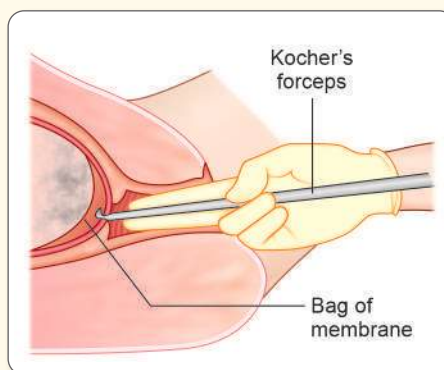
SURGICAL INDUCTION OF LABOR WITH KOCHER'S FORCEPS

Articles

- Sterile tray
- Bowl and swabs
- Sponge-holding forceps
- Kocher (to rupture the membranes)
- Kidney tray
- Perineal pads

Procedure

Steps	Procedure	Rationale
Preprocedural steps		
1.	Check the written order carefully	To avoid any mistakes
2.	Keep all the articles ready	To save time
3.	Wash hands	To prevent cross-infection
4.	Approach the woman pleasantly	To establish rapport
5.	Provide privacy	To reduce anxiety
6.	Explain the procedure to the mother	To reduce anxiety
Intraprocedural steps		
1.	Assist the doctor in passing a long Kocher up to the cervical canal and rupture the membranes.	To facilitate artificial rupture of membranes (ARM) in order to induce or augment labor and promote progress of delivery.



Technique of rupture of the membrane with long Kocher's forceps

Contd...

PROCEDURE 4.4 FORCEPS DELIVERY

Key Terms

- **Forceps:** Instrument used to assist the delivery of the fetal head.
- **Cephalic presentation:** Position where the fetal head presents first.
- **Traction:** Gentle pulling applied with forceps to help deliver the baby.

INTRODUCTION

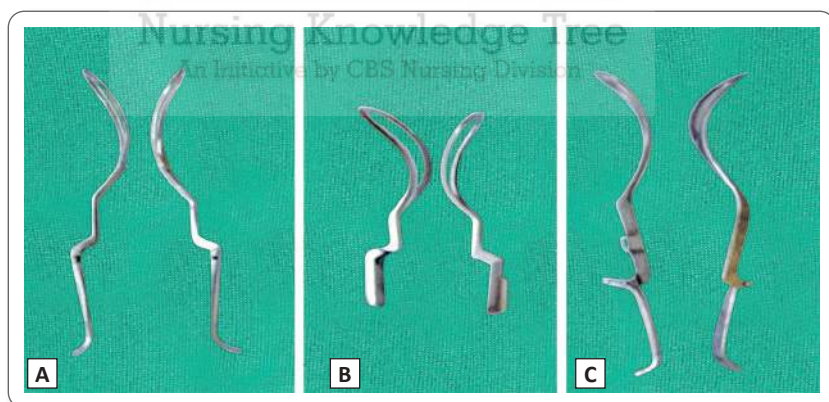
Forceps delivery is a type of assisted vaginal delivery in which the healthcare provider applies specially designed forceps to the fetal head and uses gentle traction to aid in the delivery of the baby during childbirth.

TYPES OF FORCEPS APPLICATION ACCORDING TO THE STATION OF FETAL HEAD

- **High forceps:** Application on a nonengaged fetal head (not practiced nowadays).
- **Mid forceps:** Application on fetal head that is engaged in the pelvis, but presenting part is above +2 station.
- **Low forceps:** Presenting part of fetal head is at +2 station.
- **Outlet forceps:** When the fetal head lying on the perineum and is visible at the introitus between the contractions. Most commonly used (90%).

CLASSIFICATION

- Long-curve forceps with or without traction (Fig. 1A)
- Short-curve forceps (Fig. 1B)
- Kielland's forceps (Fig. 1C).



FIGURES 1A TO C: Forceps: A. Long curved; B. Short curved; C. Kielland's

CRITERIA

Fetal Criteria

- Head must be engaged
- Position and station of head must be suitable to apply the blades of forceps correctly to the sides of the head

Maternal Criteria

- No cephalopelvic disproportion (CPD)
- Empty bladder
- Adequate analgesia should be given
- Fully dilated cervix
- Ruptured membranes
- Presence of good uterine contractions
- **Others:** Written consent.

Mnemonic for Forceps

F – Favorable head position and cervix
 O – Open os
 R – Ruptured membranes
 C – Contractions
 E – Engaged head and empty bladder
 P – Pelvimetry
 S – Stirrups (lithotomy position)

INDICATIONS**Maternal**

- Distress
- Severe preeclampsia

Fetal

- Distress
- Low birthweight

CONTRAINDICATIONS

- Cephalopelvic disproportion.

- Heart disease
- Postmaturity
- Aftercoming head of breech
- Unengaged fetal head.

Points to Remember

- Follow strict aseptic technique.
- Never ask the mother to bear down before full dilatation.
- Always give episiotomy at the peak of uterine contraction.
- Check that the resuscitation set, suction apparatus and other equipment are in working condition.
- Record any alteration in uterine contraction and fetal heart rate (FHR). Record the time of rupture of membrane and color of amniotic fluid.
- Note FHR when the contractions are not present.

ARTICLES

The articles used in the procedure are shown in Figures 2 and 3.



1. Mackintosh (Melin's) sheet
2. Lignocaine 1%
3. Urinary tube
4. ID band
5. Gown, mask cap, shoe cover
6. Gloves
7. Sterile delivery set
8. Normal saline
9. Betadine solution
10. Catgut suture
11. Inj. Lignocaine
12. IV plaster syringe, set IV cannula

FIGURE 2: Accessory articles needed for forceps delivery



1. Sterile pad
2. Kidney tray
3. Bowl with gauze pieces
4. Sponge-holding forceps
5. Scissors
6. Artery forceps
7. Kocher's forceps
8. Plain thumb forceps
9. Artery forceps
10. Toothed thumb forceps
11. Needle holder
12. Nontoothed thumb forceps

FIGURE 3: Articles needed for normal vaginal delivery

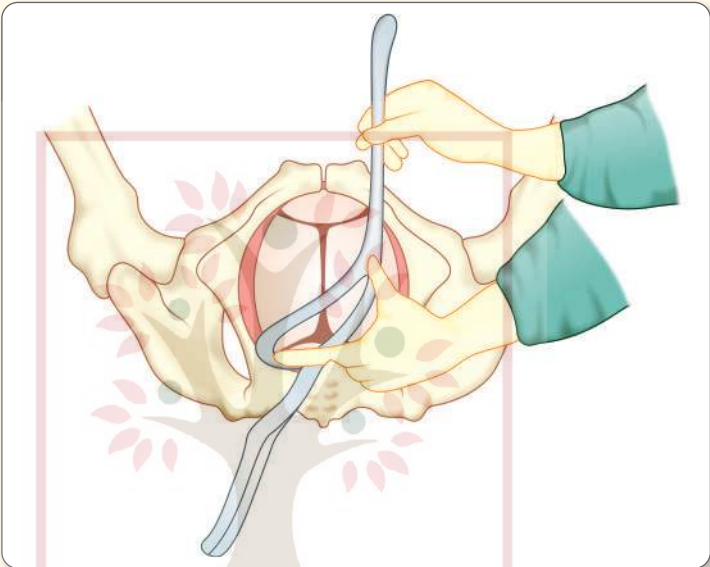
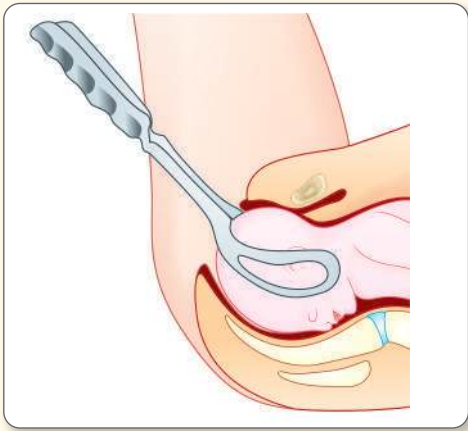
For newborn:

- Baby blanket
- Neonatal resuscitation equipment
- Oxygen source with tubing
- Suction apparatus
- Cord clamp

PROCEDURE

Steps	Procedure	Rationale
Preprocedural steps		
1.	Administer enema	To prevent interference of the full rectum with the labor process
2.	Help the mother wear loose clothing	To provide comfort
3.	Full surgical asepsis should be taken. • The surgeon should wear a sterile mask, gown, and gloves • The vulva and vagina should be swabbed with an antiseptic solution • The perineum should be draped with a sterile towel, and the legs with leggings	To maintain surgical asepsis and prevent infection during the procedure.
4.	Informed consent should be taken	To avoid legal complications
5.	Explain the need for forceps delivery to the mother and family	To obtain cooperation
Intraprocedural steps		
1.	The patient is to be placed in the lithotomy position	For easy delivery of the fetus
2.	Assess fetal heart rate	To assess the status of the fetus
3.	Assess the state of the cervix, membranes, presentation, and position of the head by an internal examination	To assess the progress of labor
4.	Open the delivery pack, arrange the articles, and pour cleansing solution into the bowl	To save time as well as any complications
5.	Empty the bladder	To prevent interference with contractions
6.	Infiltrate the perineum with local anesthetic (1% lignocaine)	To provide an anesthetic effect
7.	Give an episiotomy when the perineum becomes bulged and thinned out by the advancing head at the time of contraction	For easy insertion of forceps blades
8.	Assess fetal heart rate frequently (every 5–10 minutes)	To assess the fetal status for distress
9.	The physician identifies the forceps blades	To prevent any complications or injury to the birth canal
10.	Insert four fingers of the semisupinated right hand along the left lateral vaginal wall; the palmar surface of the fingers rests against the side of the fetal head	To guide the forceps during application and protect the vaginal wall

Contd...

Steps	Procedure	Rationale
11.	The handle of the left blade is taken in the left hand in a pen-holding manner and is held vertically. The fenestrated portion of the blade is then introduced between the internal fingers, and the fetal head is manipulated by the left thumb. (When correctly applied, the blade should be over the parietal eminence, the shank in contact with the perineum, and the handle directed upward. As the blades are pushed up, the handle is carried downward and backward.	To ensure the correct and safe application of the forceps blade over the fetal head and facilitate proper positioning for delivery.
 Application of forceps		
12.	Introduction of the right blade is done after introducing two fingers of the left hand into the right lateral wall of the vagina along the sides of the baby's head.	To guide the right blade safely along the fetal head and prevent injury to maternal tissues.
13.	With the right blade over the left one, the physician articulates and locks the blades. In case of any difficulty in locking, remove the blades and reapply	To avoid any injury
14.	During the next uterine contraction, the physician gives steady but intermittent traction	Because the direction of pull corresponds to the axis of the birth canal
15.	In outlet forceps, the traction may be continuous, and contraction is not awaited	As the head is already on the perineum
16.	Once the head is crowned, the direction of pull is gradually changed to upward and forward toward the mother's abdomen	To deliver the head by extension
 Extraction of the fetus after application		

Contd...

Steps	Procedure	Rationale
17.	Once the baby's head is delivered, the blades are removed one after the other, the right one first, then the left.	To safely remove the forceps and prevent injury to the mother and baby.
18.	Further steps are to be followed as in a normal vaginal delivery. Intravenous methergine is administered with the delivery of the anterior shoulder	To prevent the chances of increased blood loss
19.	Episiotomy is repaired in a usual manner.	To restore the integrity of the perineal tissues and promote proper healing.
20.	Clean the vulva and surrounding area with an antiseptic solution and place a perineal pad	To prevent infection
Postprocedural steps		
1.	Clean and replace the articles	To maintain cleanliness and prepare for future use.
2.	Remove gloves and wash hands	To prevent cross-infection.
3.	Assist the patient to a comfortable position	To promote comfort and relaxation.
4.	Records the details of delivery and the condition of the mother and the baby in the patient's chart.	To maintain accurate medical records.
5.	Assess the patient for excessive bleeding	To observe for postpartum hemorrhage

COMPLICATIONS

Maternal

- Immediate
 - *Injury*: Vaginal laceration, cervical tear, extension of episiotomy, complete vaginal tear
 - *Nerve injury*: Femoral, lumbosacral trunk with mid cavity forceps delivery
 - Postpartum hemorrhage (PPH)
 - Anesthetic complication
 - Puerperal sepsis and maternal morbidity
- Remote
 - Painful perineal scars
 - Dyspareunia
 - Low backache
 - Genital prolapsed
 - Stress urinary incontinence
 - Sphincter dysfunction

Fetal

- Immediate
 - Asphyxia
 - Facial bruising
 - Intracranial hemorrhage
 - Cephalohematoma
 - Facial palsy
 - Skull fracture
 - Cervical spine injury
- Remote
- Cerebral or spastic palsy due to residual cerebral injury.

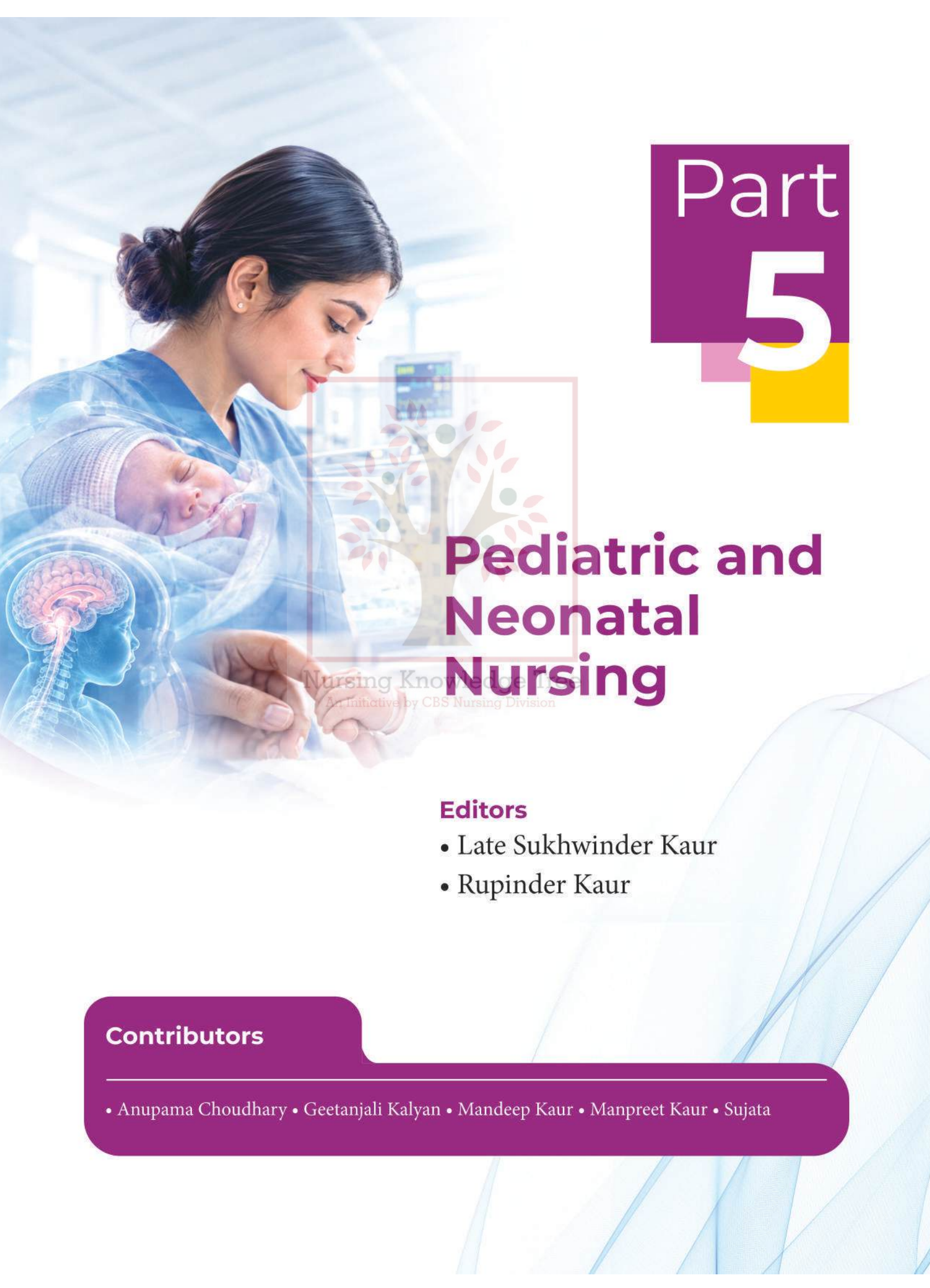
DOCUMENTATION

Record the indication for forceps delivery, type of forceps used, time of delivery, and condition of the mother and newborn in the patient's record.

PROCEDURE 4.5 DESTRUCTIVE OPERATION

Key Terms

- **Craniotomy**: Perforation of the fetal skull to aid delivery.
- **Evisceration**: Removal of fetal organs to reduce size.
- **Cleidotomy**: Cutting the clavicle to reduce shoulder width.
- **Spondylotomy**: Cutting the vertebral column to reduce fetal bulk.
- **Decapitation**: Separation of fetal head from the body to aid delivery.



Part 5

Pediatric and Neonatal Nursing

Nursing Knowledge Base
An Initiative by CBS Nursing Division

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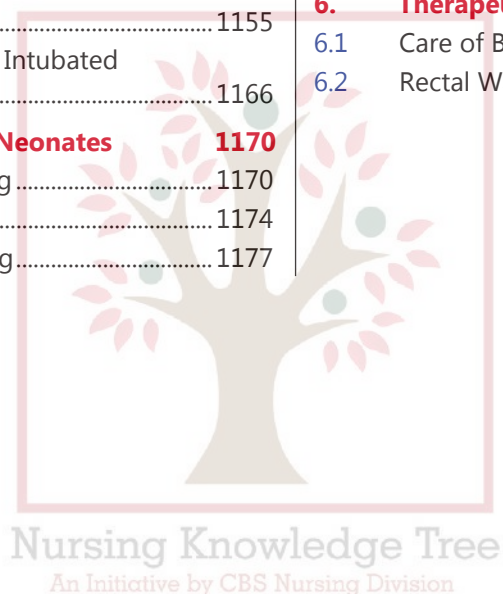
LIST OF PROCEDURES

PEDIATRIC NURSING

1. Assessment of the Patient (Neonate and Child) 909	6.7 Removal of Ryle's Tube/Nasogastric Feeding Tube..... 1020
1.1 History Taking..... 909	6.8 Jejunostomy Feed 1023
1.2 Physical Assessment..... 912	6.9 Total Gut Irrigation (Whole Bowel Irrigation)..... 1032
1.3 Measurement of Weight 923	7. Procedures of Administration of Medication 1035
1.4 Measurement of Height 926	7.1 Intramuscular Injection 1035
2. Assessment of Growth and Development 931	7.2 Intradermal Medication 1039
2.1 Assessment of Growth and Development of Newborn, Infant, Toddler, Preschooler, School Aged Child and Adolescent 931	7.3 Intravenous Medication..... 1044
3. Basic Nursing Care Procedures for Children 939	7.4 Subcutaneous Medication..... 1050
3.1 Skin Care..... 939	7.5 Oral Medication 1054
3.2 Eye Care 942	8. Elimination and Bowel Management Procedures 1059
3.3 Pressure Ulcer Risk Assessment Among Children..... 944	8.1 Urinary Catheterization..... 1059
3.4 Play Therapy..... 952	8.2 Rectal Suppository Administration..... 1065
3.5 Care of the Preterm Baby..... 963	8.3 Administration of Enema 1069
4. Assessment of Respiratory System 970	8.4 Colostomy Care 1071
4.1 Respiration Pattern in Children..... 970	9. Restraining in Pediatric Patients 1076
5. Procedures on Sick Child 973	9.1 Restraints in Children..... 1076
5.1 Chest Drainage..... 973	10. Pediatric Critical Care 1079
5.2 Nebulization..... 977	10.1 Care of Child on Ventilator..... 1079
5.3 Oxygen Administration..... 979	10.2 Nursing Care of Central Venous Catheter (Central Line)..... 1086
5.4 Steam Inhalation..... 985	10.3 Calculation of Drugs and Doses for Children..... 1096
5.5 Metered-Dose Inhaler with Spacer 989	10.4 Collection of Specimen 1105
6. Procedures of the Gastrointestinal System 994	11. Assisting in Diagnostic and Therapeutic Procedures 1111
6.1 Total Parenteral Nutrition 994	11.1 Blood Transfusion 1111
6.2 Expression of Breast Milk..... 1001	11.2 Exchange Transfusion..... 1115
6.3 Colonic Irrigation..... 1004	11.3 Lumbar Puncture 1118
6.4 Nasogastric Tube Insertion 1007	11.4 Care of Child with Chest Tube Insertion and Removal 1123
6.5 Insertion of Orogastric Tube and Orogastric Tube Feeding 1012	11.5 Bone Marrow Aspiration 1129
6.6 Administration of Medication through Nasogastric Tube 1017	

NEONATAL NURSING

1. Immediate Care and Assessment of the Newborn	1139	4. Thermal Care and Special Neonatal Support	1180
1.1 Immediate Newborn Care	1139	4.1 Kangaroo Mother Care	1180
1.2 Neonatal Assessment	1143	4.2 Care of Baby in Radiant Warmer	1184
2. Neonatal Resuscitation and Airway Management	1150	4.3 Care of Baby in Incubator	1187
2.1 Newborn Resuscitation	1150	5. Skin Care and Hygiene	1192
2.2 Neonatal Resuscitation and Endotracheal Intubation	1155	5.1 Skin Care (Oil Massage) of Newborn	1192
2.3 Endotracheal Suction for Intubated Neonates	1166	6. Therapeutic Procedures	1196
3. Feeding Techniques in Neonates	1170	6.1 Care of Baby Under Phototherapy	1196
3.1 Initiation of Breastfeeding	1170	6.2 Rectal Wash in Neonate	1200
3.2 Tube Feeding	1174		
3.3 Spoon and Katori Feeding	1177		



4. ASSESSMENT OF RESPIRATORY SYSTEM

PROCEDURE 4.1 RESPIRATION PATTERN IN CHILDREN

Key Terms

- **Tachypnea:** Abnormally fast breathing rate
- **Bradypnea:** Abnormally slow breathing rate
- **Apnea:** Temporary absence of breathing
- **Dyspnea:** Difficulty or labored breathing

INTRODUCTION

Monitoring a child's respiration pattern is an important aspect of assessing overall health and detecting illness at an early stage. Respiration, a vital sign, reflects the body's ability to take in oxygen and remove carbon dioxide effectively. A normal breathing pattern in children involves a coordinated movement of the diaphragm followed by the rib cage, ensuring efficient ventilation. Respiratory rates are typically higher in younger children and gradually decrease with age. Assessment of respiration can be performed by observing chest movement, feeling the rise and fall of the abdomen or using a stethoscope. Careful monitoring of respiration pattern helps in identifying abnormalities such as rapid, slow or irregular breathing, which may indicate underlying health problems.

PURPOSES

- To establish a baseline for future comparison of the child's health status.
- To monitor changes in the child's condition and detect early signs of illness.
- To evaluate the effectiveness of treatment and nursing interventions.

INDICATIONS

- To monitor the child's health status during illness or hospitalization.
- To detect respiratory distress or any abnormal breathing pattern.

CONTRAINDICATIONS

- Avoid disturbing the child if it may alter the natural breathing pattern (e.g., crying or agitation).
- Avoid immediate measurement after crying, feeding or physical activity as it may give inaccurate readings.

Points to Remember

- All persons should be made comfortable and reassured that recording vital signs is normal part of health checks, and that it is necessary to ensure that the state of their health is being monitored correctly.
- Gather all the equipment before procedure.
- Communicate with the child appropriately to their age.
- Provide comfort during the procedure.
- Count the respirations for 1 full minute, document and note level of activity, such as awake or asleep.
- Any abnormalities in vital signs should be reported to the healthcare professional in charge of care.
- When taking the pulse and respiration, do not drop the wrist until both the pulse and respiration are taken. This way the person does not know when their respirations are being measured – ensuring a more accurate measurement.
- The respiration rate is the rate at which a person breathes. It increases with fever and some illnesses. The best time to count the respiration rate is when a person is resting, perhaps after you take the person's pulse while your fingers are still on the person's wrist.

ARTICLES

- Wrist watch with seconds
- Patient's treatment/vital charts
- Pen
- Pencil
- Stethoscope

PROCEDURE

Steps	Procedure	Rationale
Preprocedural steps		
1.	Check the name, bed number, and other identifications of the patient	Ensures correct patient care and prevents errors.
2.	Introduce yourself to the parent and child	Builds trust and reduces anxiety.
3.	Explain the procedure to the parents and the child	Gains cooperation and reduces fear.
4.	Help the parents understand the purpose of the procedure	Increases compliance and awareness
5.	Discuss their fears and concerns about the child's therapy	Provides emotional support and reassurance
6.	Include the parents in planning for the child's care. Promote their participation in caring for the child	Promotes involvement and better care outcomes
7.	Recognize that the parents will need rest periods. Encourage them to take breaks and eat regularly	Prevents caregiver fatigue and stress.
8.	The neonate must be quiet and calm while looking and listening to their breathing	Ensures accurate respiratory measurement.
9.	If the baby is frightened, crying or angry, you will not be able to obtain an accurate count of the infant's breaths	Crying alters respiratory rate and gives inaccurate results.
10.	Ask the mother to keep her infant calm	Helps obtain a correct and reliable breathing count.
11.	If the infant is sleeping, do not wake	Sleeping provides an accurate, natural respiratory rate.
12.	To count the number of breaths in 1 minute, use a watch with a second hand or a digital watch	Ensures accurate counting of breaths per minute.
13.	Put a watch in such a way that you can easily see the seconds while counting the breaths of the infant it takes in a minute	Helps maintain accuracy without losing count.
14.	Auscultate breath sounds for a full cycle of inspiration and expiration over all lung fields. Note airflow and presence of adventitious sounds such as crackles, wheeze or stridor	Provides complete assessment of breath sounds and detects abnormalities.
15.	Observe degree of respiratory effort—normal, difficult or labored. Normal breathing is effortless	Helps identify the child's breathing status and detect respiratory distress.
16.	Document character of dyspnea or labored breathing; continuous, intermittent, worsening or sudden onset. Note: Relation to activity, such as rest, exertion, crying, feeding, and association with pain, positioning or orthopnea while documenting	Aids in assessing the severity and possible causes of breathing difficulty.
17.	Note the presence of additional signs of respiratory distress: Nasal flaring, grunting, and retractions. Note: Location of retractions and character (mild, moderate or severe)	Early indicators of increased work of breathing and hypoxia.
18.	Observe for head bobbing, usually noted in a sleeping or exhausted infant. The infant is held by the caregiver with the head supported on the caregiver's arm at the suboccipital area. The head bobs forward with each inspiration	Indicates severe respiratory distress, especially in infants
19.	Observe the child's color. Note the presence and location of cyanosis—peripheral, perioral, facial, and trunk. Note the degree of color changes, duration, and association with activity such as crying, feeding, and sleeping	Indicates oxygenation status and severity of hypoxia.
20.	Observe the presence of cough, noting type and duration, such as dry, barking, paroxysmal or productive. Note any pattern, such as time of day or night, association with activity, physical exertion or feeding. The severity of croup may be determined by cough and signs of respiratory effort	Helps identify the underlying respiratory condition and its severity.
21.	Impending respiratory failure—barking cough (often not prominent), audible stridor at rest (may be hard to hear), sternal retractions (may be marked), lethargy or decreased level of consciousness, and often dusky appearance in the absence of supplemental oxygen.	Detects severe deterioration early for immediate intervention.

Contd...

Steps	Procedure	Rationale
Intraprocedural steps		
1.	Count the breaths: Breathing is measured in breaths per minute or bpm. To get an accurate measurement, the infant/child must be at rest. This means the child is not breathing faster than usual due to exercising. The child should be still for at least 10 minutes before you count the breaths	Ensures an accurate baseline respiratory rate.
2.	Have the child sit up straight. If you are measuring an infant, lay the baby flat on her back on a firm surface	Promotes proper chest movement and accurate observation.
3.	Use a stopwatch to time one minute. Count the number of times the child's chest rises and falls during that minute	Provides precise measurement of breaths per minute.
4.	Look for breathing movements anywhere on the infant's chest or abdomen	Helps correctly identify each breath.
5.	If the infant starts to cry, ask the mother to calm the infant before starting the counting	Crying alters breathing and gives inaccurate results.
6.	If you are not sure about the number of breaths you counted (for example, if the infant was actively moving and it was difficult to watch the chest or if the infant was upset or crying), repeat the count	Ensures reliability and accuracy of the respiratory count.
7.	If the count is 60 breaths or more in a young infant (0–2 months), the count should be repeated because the breathing rate of a young infant is often irregular. The young infants may occasionally stop breathing for a few seconds, followed by a period of faster breathing	Infants have irregular breathing; repetition ensures accuracy. Reduces error and confirms abnormal respiration.
8.	If the second count is also 60 breaths or more, the young infant has fast breathing	Awareness can alter the natural breathing pattern and give inaccurate results.
9.	If you tell the child that you are going to measure their breathing, they are likely to change their breathing rate without realizing it. Tell them to breathe normally. To improve the accuracy of your result, you can take the measurement three times and average the answers.	Improves the accuracy and reliability of the measurement.
10.	Determine Whether the Breathing Rate is Within the Normal Range Children breathe faster than adults. There is a need to compare your number to the normal number of breaths per minute for the child's age group. The rates are as follows: • 40–60 bpm for an infant who is 0–6-month-old. • 24–40 bpm for an infant who is 6–12-month-old. • 20–30 bpm for a child who is 1–5-year-old. • 12–20 bpm for a child who is 6–11-year-old. • 12–18 bpm for someone who is 12-years or older.	Comparing the child's respiratory rate with age-specific normal values helps determine whether breathing is normal or abnormal, allowing early detection of respiratory problems.
11.	Look for Severe Chest Indrawing • Ask the mother to lift the shirt of the child and expose the chest and abdomen • Look for chest indrawing when the young infant breathes in • Look at the lower chest wall (lower ribs) • Chest indrawing occurs when the effort required to breathe in is much greater than normal. In normal breathing, the whole chest wall (upper and lower) and abdomen move out when the young infant breathes in. When chest indrawing is present, the lower chest goes in when the young infant breathes in • For chest indrawing to be present, it must be clearly visible and present all the time • If only the soft tissue between the ribs goes in when the infant breathes in (also called intercostal indrawing or intercostal retractions), the infant does not have chest indrawing. In this assessment, chest indrawing is lower chest wall indrawing. It does not include 'intercostal indrawing'.	• Allows clear visualization of chest movements. • Helps detect inward movement indicating distress. • Lower chest indrawing is a key sign of severe respiratory distress. • Suggests difficulty in breathing and possible hypoxia. • Confirms true chest indrawing, not a temporary or mild change. • Helps avoid misinterpretation and ensures accurate diagnosis.

PROCEDURE 6.5 INSERTION OF OROGASTRIC TUBE AND OROGASTRIC TUBE FEEDING



See & Perceive

Learn through
Real-time/Infographic video

PGI NINE Clinical Nursing Procedures (PHYGTAL)

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Key Terms

- **Enteral feeding:** Administration of nutrients directly into the gastrointestinal tract via a tube.
- **Gastric intubation:** Insertion of a tube into the stomach through the mouth or nose.
- **Aspiration:** Inhalation of food, fluid or gastric contents into the lungs.
- **Bolus feeding:** Delivery of a measured amount of feed into the stomach at one time.

INTRODUCTION

Orogastric tube feeding is a method of providing nutrition by inserting a catheter through the mouth, passing it via the pharynx and esophagus into the stomach. It is commonly used in neonates who are unable to coordinate sucking and swallowing, particularly low birth weight infants weighing 1,200–1,800 g or those born at 30–34 weeks of gestation. These infants are initially managed with gavage feeding to ensure adequate nutrition. As their feeding reflexes improve over 1–3 days, they can be gradually transitioned to spoon or paladai feeding and eventually to breastfeeding.

PURPOSES

- For gastric decompression
- For gastric lavage
- For feeding infants unable to feed orally (gavage feeding)

INDICATIONS

- Neonates unable to feed orally (preterm, low birth weight, neurologically depressed)
- Neonates with surgical conditions
- Neonates on CPAP

CONTRAINDICATIONS

- Esophageal abnormalities (e.g., atresia)
- Severe respiratory distress
- Facial/oral trauma or anomalies
- Recent gastrointestinal surgery

ARTICLES

The articles used in procedure are shown in Figure 1.

- Nasogastric tube feeding tube 8 Fr size for babies >2000 g, 5–6 Fr size for <2,000 g babies.
- 2 mL syringe
 - Selection for appropriate size nasogastric tube:

Age	NG tube (Fr)
<1 months	6–8
>2,000 g babies	6 FG
<2,000 g babies	8 FG
1–6 months	8–10

- **Hypoallergic tape (dynaplast, micropore or leucoplast):** *(To secure the tube).*
- **Glass of sterile water:** *(To lubricate the tube and to check its placement inside stomach).*
- **Stethoscope:** *(To check the correct placement of tube).*
- **Syringe:** *(To aspirate gastrointestinal (GI) secretion and to confirm Ryle's tube placement).*
- **Gloves:** *(To prevent contaminations of hands).*
- **Kidney tray:** *(To discard the aspirate, if any).*

- **Towel, Mackintosh and draw sheet:** *(To prevent soiling of bed sheet and clothes of child).*
- **Paper bag:** *(To discard waste papers)*
- **Scissors**
- **Container with expressed breast milk (EBM)**
- **Penlight:** *To allow visualization of nares*



1. Paper bag for waste
2. Kidney tray
3. Stethoscope
4. Draw sheet with Mackintosh
5. Disposable syringes
6. Container with water
7. Tegaderm tape
8. Clean gloves
9. Orogastric feeding tube
10. Scissors

FIGURE 1: Tray containing articles for insertion of orogastric feeding tube

PROCEDURE

Steps	Procedure	Rationale
Preprocedural steps		
1.	Assess the neonate/infant for the need of enteral tube insertion, whether it is for feeding, aspiration or for some other purpose.	Ensures the procedure is indicated and avoids unnecessary intervention. Helps choose the safest and most effective route (oral/nasal).
2.	- Assess the neonate/infant to determine the appropriate route of insertion and the presence of a gag reflex. - Review the patient's medical history for oral problems and risk for aspiration.	- Determines risk of aspiration and tolerance to tube insertion. - Identifies contraindications and risk factors (e.g., aspiration, anomalies).
3.	Review the physician's order for the type and size of the tube to be inserted.	Ensures the correct type and size of tube for safe procedure.
4.	Bring a tray with articles near the patient and wash your hands.	Maintains asepsis and prevents infection.
5.	Explain the procedure to the patient or attendant, if the child is too small to understand.	Reduces anxiety and gains cooperation from the caregiver.
6.	Stand on the same side of the bed of the neonate.	Provides better control and ease during insertion.
7.	Place the neonate/infant in the supine position with the head slightly elevated.	Facilitates easy insertion and reduces aspiration risk.
8.	Place a small towel over the chest. Keep facial tissues or wipes within reach.	Protects clothing and maintains cleanliness.
9.	Determine the length of the tube to be inserted and mark the tape. Method: Open the feeding tube package and starting at the tip of the tube, measure the length of the tube to be inserted from the bridge of the nose to the tip of the earlobe down to the tip of the xiphoid process. This length is the approximate distance from nose to stomach in 98% of patients. Mark the tube with tape or maintain measurement with thumb and finger.	Ensures accurate and safe placement of the tube in the stomach by using a standard measurement method, preventing misplacement, and guiding correct depth during insertion.

Contd...

Steps	Procedure	Rationale
	 Orogastric tube Measuring the orogastric tube from the bridge of the nose to the tip of the ear lobe  Orogastric tube Measuring the orogastric tube from the tip of ear lobe to the tip of the xiphoid process	
10.	Cut a tape 10 cm (4 inches) long.	Provides adequate length of tape to secure the tube firmly and prevent displacement.
Intraprocedural steps		
1.	Wash your hands properly.	Prevents infection and maintains asepsis.
2.	Put on clean gloves to protect your hands from contamination.	Protects caregiver and prevents contamination.
3.	Lubricate the nasogastric tube with sterile distilled water or expressed breastmilk.	Reduces friction and prevents mucosal injury.
4.	Hold the feeding tube 1"–2" away from the tip.	Provides better control during insertion.
5.	Use the natural bend of the tube to follow the natural curves of the mouth and throat.	Follows anatomical curves for easy insertion.
6.	Insert the tube gently in the mouth and toward the back of the throat, gently pushing it down the esophagus until it reaches the premeasured mark on the tube.	Ensures safe, accurate placement and prevents trauma.
	 Orogastric tube Insertion of the orogastric tube in a neonate	

Contd...

Steps	Procedure	Rationale
7.	Do not forcefully insert the tube.	Prevents trauma to the mucosa and reduces risk of injury or complications.
8.	Perform measures to verify the placement of the tube by following the methods: - Connect the syringe to the other end of the feeding tube and gently aspirate stomach contents. It may be necessary to advance or withdraw the tube slightly from its original position. The aspirate would look like curdled milk if the tube is in the stomach. Note the amount, color, and appearance of the aspirate. This aspirate is usually fed again. Disconnect the syringe from the feeding tube. - Draw up 1–2 cc of air in a 5 mL sterile syringe. Reconnect the syringe to the tube. Inject the air into the stomach, simultaneously auscultating the air sound by keeping the stethoscope at the lower part of the xiphisternum. If sounds are present, the tube is in the stomach. Gently aspirate the air before commencing feed. - Another method to check the correct placement of Ryle's tube is to keep the distal end of the tube in water. If bubbles start appearing, that means the tube is in the trachea, and if does not appear, that ensures correct placement of Ryle's tube.	- Confirms correct gastric placement by checking appearance and prevents complications like aspiration while also assessing tolerance. - Verifies tube position by hearing air entry in the stomach and prevents improper placement before feeding. - Detects incorrect (tracheal) placement by presence of air bubbles and helps ensure safe tube positioning.
		
9.	Remove gloves.	Prevents cross-contamination and maintains hygiene.
10.	Ryle's tube should be fixed properly with adhesive or micropore. A neonate's skin is very delicate; one can use transpore directly on the skin and follow with the sticking plaster. In neonates, fix the tube in place at the angle of the mouth or on one side of the lips, not in the middle.	Ensures secure fixation of the tube, prevents displacement, protects delicate neonatal skin from injury, and enhances comfort by avoiding pressure on the center of the lips.
		

Contd...

Steps	Procedure	Rationale
11.	Observe the neonate/infant for choking, grasping or cyanosis during insertion of the tube. Withdraw the tube immediately if the baby appears to be in any distress.	Detects incorrect placement and prevents complications like aspiration.
12.	Obtain X-ray film of abdomen as per hospital policies	Ensures accurate and definitive tube placement.
13.	Ask the doctor on duty to re-check the placement of Ryle's tube to ensure placement of Ryle's tube	Provides additional safety and confirmation before use.
14.	Wash your hands, remove the plunger of a 10, 20 or 50 mL sterile syringe	Maintains asepsis and prepares for safe feeding.
15.	Connect the barrel of the syringe to the end of the orogastric tube	Facilitates safe and controlled administration of feed.
16.	Fill the barrel with the required volume of expressed breastmilk/ formula milk	Ensures accurate and adequate feeding.
17.	Let the milk run from the syringe through the gastric tube by gravity. Do not force milk through the gastric tube by using the plunger	Prevents forceful entry and reduces the risk of aspiration.
18.	Hold the syringe 5–10 cm above the neonate/infant until the syringe is empty	Maintains appropriate flow rate for safe feeding.
19.	It should take about 10–15 minutes for the milk to flow into the infant's stomach. Changing the height of the syringe will also affect the speed of milk flow. Lowering the syringe slows the milk flow; raising the syringe makes the milk flow faster	Ensures controlled and safe feeding by regulating flow rate, preventing rapid infusion, discomfort or risk of aspiration.
20.	Observe the neonate/infant during the entire gastric tube feed	Detects early signs of intolerance or distress.
21.	Do not leave the neonate/infant unattended	Ensures immediate action in case of complications.
22.	Stop the tube feed if the neonate/infant shows any of these signs: breathing difficulty, changes color, looks blue, becomes floppy or vomits	Prevents aspiration and serious complications.
23.	While removing the tube, pinch the tube or close the proximal end	Prevents air entry and regurgitation.
24.	Cap the end of the gastric tube between feeds	Maintains hygiene and prevents contamination.
25.	Keep the tube open after 30 minutes of feed, if the baby is on continuous positive airway pressure (CPAP)	Prevents gastric distension due to air entry.
26.	Document the feed amount on the neonate/infant's monitoring chart.	Ensures accurate monitoring and continuity of care.
Postprocedural steps		
1.	Replace equipment and wash hands	Maintains cleanliness and prevents infection.
2.	Inspect the oropharynx for any irritation after insertion	Detects irritation or injury early.
3.	Ask if the patient feels comfortable	Assesses patient tolerance and well-being.
4.	Observe patient for any difficulty in breathing or gagging.	Identifies complications like misplacement or distress.

SPECIAL CONSIDERATION

- Measure the nasogastric tube correctly
- Do not push the tube while inserting
- Pass the gastric tube gently so as to avoid trauma
- Passage of the gastric tube may lead to stimulation of vagal nerve resulting in apnea or bradycardia. If this occurs, tactile stimulation will assist the infant to breathe
- Let milk flow under gravity
- Pinch tube while filling the syringe
- Feed slowly
- Pinch the tube during removal.

DOCUMENTATION

Record and report type and amount of feed, time and date, type and size of tube, position confirmation (X-ray), patient tolerance, and any gastric aspirate (color and amount) accurately in the intake-output chart.

1. IMMEDIATE CARE AND ASSESSMENT OF THE NEWBORN

PROCEDURE 1.1 IMMEDIATE NEWBORN CARE



See & Perceive

Learn through
Real-time/Infographic video

PGI NINE Clinical Nursing Procedures (PHYGITAL)

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Key Terms

- **Airway clearance:** Clearing secretions to maintain breathing.
- **Skin-to-skin contact:** Placing the baby on the mother's chest for warmth and bonding.
- **Vitamin K prophylaxis:** Vitamin K injection to prevent bleeding.
- **Infection prevention:** Aseptic care to reduce infection risk.

INTRODUCTION

Immediate newborn care refers to the essential care provided to the baby immediately after birth to ensure a smooth transition from intrauterine to extrauterine life. As the placenta stops functioning as an organ of gas exchange after birth, the newborn must establish effective breathing to maintain adequate oxygen supply. Therefore, maintaining a clear airway and supporting respiration are crucial for the survival and well-being of the newborn during the first few minutes of life.

PURPOSES

- To clear air passage and facilitate breathing
- To observe for any external anomalies
- To provide adequate warmth
- To help the newborn to adapt to the extrauterine environment
- To keep the baby clean
- To establish, maintain and support respirations
- To provide warmth and prevent hypothermia
- To ensure safety, prevent injury and infection
- To identify actual or potential problems that may require immediate attention.

INDICATIONS

- To ensure effective breathing after birth.
- To maintain body temperature and stability.

CONTRAINDICATIONS

- Newborn requiring immediate resuscitation/ICU care.
- Severe congenital anomalies needing urgent intervention.

ARTICLES

The articles used in the newborn care are given in Figure 1.

- Radiant warmer (*to place the baby after delivery*)
- Prewarmed draw sheet (*to receive the baby*)
- Sterile gloves
- Suction machine with infant feeding tube (*for suctioning of secretions from the baby's mouth and nose*)
- Extra sheets (*to dry the baby*)
- Cord clamp (*to clamp the cord before cutting*)
- Surgical blade (*to cut the cord*)
- Baby clothes
- Towel (*to wrap the baby*)
- Vitamin K injection with a 2 mL syringe
- Incubator and weighing machine (*to measure the weight of the infant Figs 2 and 3*).
- Identification tag (*to ensure accurate newborn identification.*) (Fig. 4)



1. Infant feeding tube
2. Sterile gloves
3. Identification tag
4. Thermometer
5. Surgical blade
6. Cord clamp
7. 2-cc syringe with injection vitamin K
8. Stethoscope
9. Baby clothes
10. Diaper
11. Towel
12. Draw sheet
13. Watch

FIGURE 1: Articles for newborn care



FIGURE 2: Incubator



Figure 3: Weighing machine for newborn



FIGURE 4: Identification tag on the newborn

PROCEDURE

Steps	Procedure	Rationale
Preprocedural steps		
1.	Arrange all articles before receiving the baby after the bath.	Ensures immediate and smooth care without delay.
2.	Use a prewarm sheet to receive the baby.	Helps to prevent heat loss and maintains body temperature.
3.	Maintain delivery room temperature >25°C.	Reduces the risk of neonatal hypothermia.
4.	Check that all the equipment is in perfect working condition.	Ensures readiness for safe and effective newborn care.
Intraprocedural steps		
1.	Explain to the mother that as soon as the baby is born, it will be kept first on her abdomen.	Prepares the mother and promotes bonding between mother and baby.
2.	Call out the time of birth of the baby.	Ensures accurate documentation of birth time.
3.	Receive the baby on a clean, dry towel and place the baby on the mother's abdomen.	Prevents infection and promotes warmth and bonding.
4.	Thoroughly dry the baby by wiping the eyes, face, head, front and back, arms, and legs.	Prevents heat loss and stimulates breathing.
5.	Remove the wet towel.	Reduces heat loss from moisture.
6.	Cover the baby's head with a cap.	Prevents heat loss from the head.
7.	Assess the baby's breathing while drying.	Helps identify breathing problems early.
8.	Clamp and cut the cord after 1 minute.	Allows delayed cord clamping for better blood volume.
9.	Record the time of cutting the cord.	Ensures proper documentation.
10.	Show the sex of the baby to the mother.	Confirms the baby's identity and reassures the mother.
11.	If the baby is crying, place the baby on the mother's chest and continue skin-to-skin contact and breastfeeding. Cover the baby with a warm cloth and a cap. Give an injection of vitamin K. Apply an identification tag, and a footprint should be taken.	Promotes bonding, warmth, and early breastfeeding. Maintains body temperature. Prevents bleeding disorders in the newborn. Ensures proper identification of the newborn.
12.	If the baby is not crying, take the baby to the nursery and perform the following steps: - Place a small pillow or rolled towel at the back - Suction secretions from the mouth and nose - Turn the baby's head to one side - Suction gently and quickly - Suction the mouth first before the nose - Stimulate the baby to cry if the baby does not cry spontaneously or if the cry is weak. Never stimulate a baby to cry unless secretions have been drained out - Do not slap the buttocks; rather, rub the soles of the feet. - Stimulate to cry after secretions are removed - The normal infant cry is loud and husky Observe for the following abnormal cry: - High-pitched cry - Weak cry - Hoarse cry	- Helps maintain the proper positioning of the newborn. - Clears the airway for effective breathing. - Prevents aspiration of secretions. - Reduces trauma and prevents hypoxia. - Prevents aspiration of secretions. - Helps initiate effective respiration. - Provides safe stimulation to initiate breathing. - Ensures the airway is clear before stimulation. - Indicates good lung expansion and effective breathing. - May indicate neurological problems, illness or airway issues.
13.	APGAR Scoring: The APGAR Scoring System was developed by Dr. Virginia APGAR for assessing newborns immediately after birth at 1 minute and 5 minutes. The 1-minute score indicates the need for resuscitation, and the 5-minute score predicts mortality and neurological defects. Five signs to be checked are given in Table. - Total score: 10 - No depression: 7–10 - Mild depression: 4–6 - Severe depression: 0–3	Developed by Dr. Virginia APGAR, it assesses the newborn at 1 and 5 minutes after birth based on heart rate, respiration, muscle tone, reflex irritability, and color. The maximum score is 10; 7–10 indicates normal condition, 4–6 mild depression, and 0–3 severe depression requiring immediate resuscitation.

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Steps	Procedure	Rationale		
	APGAR Score			
	Parameters	Score		
	Signs	0	1	2
	Heart rate	Absent	Below 100	Above 100
	Respiration	Absent	Slow, irregular	Good, crying
	Muscle tone	Flaccid	Flexion of extremities	Active body movements
	Reflex irritability	No response	Grimace	Vigorous cry
	Color	Blue, pale	Body pink, extremities blue	Complete pink
14.	Give a quick look for birth injuries or congenital malformations.	Helps in early detection and prompt management of abnormalities.		
15.	Administer vitamin K: The newborn has a sterile intestine at birth; hence, the newborn does not possess the intestinal bacteria that manufacture vitamin K, which is necessary for the formation of clotting factors. This makes the newborn prone to bleeding. As a preventive measure, 0.5 mg (preterm) and 1 mg (full term) Vitamin K is injected IM in the newborn's vastus lateralis (lateral anterior thigh) muscle.	Prevents bleeding disorders in newborns due to lack of intestinal bacteria needed for vitamin K production.		
16.	Assessment of weight and height is done.	Helps evaluate the newborn's growth and nutritional status.		
17.	Place the identity label on the wrist of the baby.	Ensures correct identification of the baby.		
18.	Check the baby's axillary temperature with a thermometer after 1 hour.	Helps detect hypothermia and maintain thermal stability.		
19.	Temperature 36.5°–37.2°C Heart rate: 120–140 beats/min Respiration: 40–60 breaths/min Blood pressure: 80/46 mm Hg 100/50 mm Hg (by 10th day)	These values represent the normal vital signs of a newborn and indicate proper thermal regulation, effective cardiac and respiratory function, and normal circulatory adaptation after birth.		
20.	Cover the baby with a warm cloth.	Helps maintain body temperature and prevents hypothermia.		
21.	Take footprints of the baby.	Ensures proper identification and legal record		
22.	Keep the baby in a prone position on the mother's chest between the breasts for skin-to-skin contact.	Promotes bonding, warmth, and early breastfeeding.		
23.	Document the birth record.	Ensures accurate medical and legal documentation.		
24.	Transfer the mother to the postnatal unit along with the baby.	Provides continued monitoring and care.		
25.	Continue skin-to-skin contact till first breastfeeding is completed.	Encourages successful initiation of breastfeeding.		
26.	Weigh the baby after the first breastfeeding.	Provides accurate birth weight and avoids early heat loss.		
Postprocedural steps				
1.	Check the baby's temperature	Helps detect hypothermia and ensure thermal stability.		
2.	Clean all the articles.	Prevents infection and maintains hygiene.		

SPECIAL CONSIDERATION

- The emergency equipment for neonatal resuscitation is to be always kept ready in neonatal area.
- Suctioning should be done first in the mouth then the nose.

DOCUMENTATION

Record the newborn's condition, vital signs, procedures performed, time of birth and cord clamping, medications given, identification details, and initiation of breastfeeding.

Part 6

Community Health Nursing

Nursing Knowledge Tree
An Initiative by CBS Nursing Division

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LIST OF PROCEDURES

1. Home Nursing	1207	5.3	Steam Inhalation.....	1345
1.1	Initiation of Relationship and Rapport Building with Family.....	1207	5.4	Hydrotherapy.....
1.2	Family Care Study Format.....	1211	5.5	Water Purification at the Household Level
1.3	The Bag Technique.....	1225	6. Drug Administration	1359
1.4	Adult Assessment.....	1229	6.1	Administration of Medication in Eye.....
1.5	Breast Self-Examination.....	1237	6.2	Administration of Medication in Ear.....
1.6	Testicular Self-Examination	1240	6.3	Intramuscular Injection
2. Maternal and Child Healthcare	1242	6.4	Management of Scabies.....	1371
2.1	Antenatal Examination	1242	6.5	Treatment for Pediculosis
2.2	Postnatal Assessment.....	1251	6.6	Minor Wound Dressing.....
2.3	Assessment of Growth and Development of Under-Six Children	1256	6.7	Management of Minor Ailments
2.4	Expression of Breast Milk	1271	7. Diagnostic Tests	1393
2.5	Visual Inspection with Acetic Acid (VIA).....	1276	7.1	Hemoglobin Estimation.....
2.6	Intrauterine Contraceptive Device Insertion	1280	7.2	Urine Analysis
2.7	Intrauterine Contraceptive Device Removal	1292	7.3	Preparation of Slide for Malarial Parasite.....
3. Neonatal Care	1296	8. Procedures at Health Center	1407	
3.1	Neonatal Assessment	1296	8.1	Directly Observed Short-Course (DOTS) for Treatment of Tuberculosis.....
3.2	Baby Bath	1304	8.2	Immunization.....
3.3	Kangaroo Mother Care	1309	8.3	Vitamin A Prophylaxis.....
3.4	Feeding of Preterm/Low Birth Weight Infant or Spoon and <i>Katori</i> Feeding	1312	8.4	Biomedical Waste Management at Community Health Settings.....
4. Nutrition	1316	8.5	Age Assessment.....	1440
4.1	Breastfeeding.....	1316	8.6	Community Health Survey.....
4.2	Complementary Feeding.....	1326	8.7	Health Camps
4.3	Preparation of Nutritious Ladoos	1329	8.8	Organization of Clinics in Community
4.4	Oral Rehydration Therapy.....	1333	8.9	Community Mapping.....
5. General Procedures in Family	1339	8.10	Identification of Community Leaders.....	1466
5.1	Performing Hand Hygiene at Home.....	1339	8.11	Investigating an Epidemic.....
5.2	Checking Temperature at Home.....	1342	8.12	Oral Visual Examination.....
		8.13	Capillary Blood Glucose Monitoring.....	1477

PROCEDURE 1.3 THE BAG TECHNIQUE

Key Terms

- **Public health bag:** A portable bag with essential nursing supplies for community care.
- **Clean technique field:** A clean surface used to place articles during procedures.



INTRODUCTION

The bag technique is an important tool used by community health nurses to perform nursing procedures efficiently and skillfully during home visits. It helps in saving time and effort while ensuring effective and safe patient care. The community health bag is an essential and indispensable equipment that the nurse carries during visits, containing all necessary articles and supplies required for providing care in the community.

OBJECTIVES

- To render effective nursing care to clients and/or members of the family during home visits.
- To prevent contamination of the nursing bag.
- To prevent cross-contamination and spread of infectious organisms.

PRINCIPLES

- Performing the bag technique will minimize, if not prevent, the spread of any infection from individuals to families, hence, to the community.
- Bag technique saves time and effort in the performance of nursing procedures.
- Bag technique should not overshadow concern for the patient rather should show the effectiveness of total care given to an individual or family.
- Bag technique can be performed in variety of ways depending upon agency policies, actual home situation, etc. as long as principles of avoiding transfer of infection are carried out.

PURPOSES

- To provide safe and effective nursing care during home visits.
- To prevent cross infection between clients, family, and nurse.
- To maintain cleanliness and asepsis while performing procedures.
- To organize and carry necessary equipment conveniently.
- To save time and effort by ensuring systematic and efficient work.

Points to Remember

- The bag should contain all the necessary articles, supplies and equipment that will be used to answer the home-based nursing care needs
- The bag and its contents should be cleaned very often; the supplies should be replaced regularly so that they are ready for use anytime
- Observe the principles of standard precautions always. The inside of the nursing bag should be regarded and maintained as a clean area
- The bag and its contents should be well protected from contact with articles in the patient's home
- As far as possible, use the articles of family; bag articles should be only used when articles are not available at home. For example, if the family has thermometer then use their thermometer instead of taking it from the bag
- The arrangement of the contents of the bag should be the one most convenient to the user; it is to facilitate efficiency and avoid confusion
- The newspaper, folders, flash book, apron, and handwashing articles should be in the outer pocket of bag, and the articles for home-based procedures should be in the inner pockets. You need to open the bag only if you want to do some procedure
- **The following should be considered when selecting work areas in the patient's home:** (a) Adequate work space (preferably a clean surface); (b) Protection of the family's property; (c) Protection of the nursing bag (place in a safe place, away from children and/or pets); (d) Raised surface not the floor
- Wash your hands again if you need to re-enter the bag for additional supplies during patient care
- Clean and disinfect the healthcare bag weekly by handwashing with mild soap and warm water, followed by air drying.

ARTICLES

The following articles (Fig. 1) are present in public health nurse bag:



1. Soap in a soap dish/soap strips and hand towel
2. Newspaper
3. Apron
4. Measuring tape
5. Baby's scale/spring balance
6. BP apparatus and stethoscope
7. Diary and pen
8. Hemoglobin testing scale
9. Lancet
10. Blotting paper
11. Thermometers
12. Torch
13. Glass slides
14. Cotton balls
15. Sterile dressing
16. Puncture-proof container to receive used lancet or needles
17. Urine analysis kit (candle, test tube holders, Benedict's solution and acetic acid, test tubes (3–4), cotton, matchbox, syringe for measuring urine, dropper, urine analysis color matching scale for testing urine sugar)
18. Folders
19. Flash book
20. Watch

One pair of sterile gloves, scale, syringes (5 mL and 2 mL), scissors, plastic sheet (not shown in the picture).

Apart from it, as per local needs and policies of institute, articles can be added or deleted.

FIGURE 1: Articles of community health nurse bag

PROCEDURE

Steps	Procedure	Rationale
Once in the patient's home		
1.	Greet the patient and introduce yourself.	To establish rapport and gain the patient's trust.
		
2.	State the purpose of the visit	To inform the patient and obtain cooperation.
3.	Select the cleanest and most convenient work area. Take out the newspaper from the outer pocket of the bag and spread it on a raised surface (not on the floor). Raised surface could be a table/bed/chair/stool/bench, etc. Place the bag on it	To maintain cleanliness and prevent contamination of the bag and articles.
4.	Take out the family folder from the outer pocket of the bag and have a talk with the family members. Write down all the necessary data that were gathered, observations, nursing care, and treatment rendered.	To assess, record data, and identify the health needs of the family.
5.	If you want to do a home-based procedure, ask for water to wash your hands. Take soap strips and a towel from the outer pocket of the bag. Wash your hands with soap and water, and dry them with a hand towel	To maintain hand hygiene and prevent cross-infection.
6.	Take out the apron from the outer pocket of the bag and put it on	To protect the nurse's uniform and maintain asepsis.
7.	Take a newspaper from the outer pocket of the bag and spread it near the bag	To create a clean working area for placing articles.
8.	Open the bag and take out the necessary articles needed for the specific care	To ensure only the required articles are used and avoid contamination.
9.	Put out all the necessary articles needed for the specific care on the newspaper near the bag.	To organize articles systematically for easy and safe use.

Contd...

Steps	Procedure	Rationale
 		
10.	Close the bag and put it in one corner of the working area	To prevent contamination of the bag during the procedure.
11.	Prepare a receptacle (Impermeable plastic trash bag for disposable items)	To ensure safe and proper disposal of waste materials.
12.	As far as possible, use articles possessed by the family; the articles that are not available to the family can only be taken out of the bag	To minimize use of bag articles and reduce risk of infection spread.
13.	Proceed with the necessary nursing care treatment to give comfort and security, and hasten recovery	To provide effective nursing care and promote patient recovery.
Postprocedural steps		
1.	Clean all things that were used and perform handwashing	To maintain cleanliness and prevent spread of infection.
2.	Open the bag and return all things that were used to their proper places after cleaning them	To ensure proper arrangement and avoid contamination of articles.
3.	Remove apron, folding it away from the person, the soiled side in and the clean side out	To prevent contamination and maintain asepsis while removing the apron.
4.	Close the bag	To protect the contents of the bag from contamination.
5.	Discard used disposable articles in an impermeable plastic trash bag	To ensure safe and proper disposal of contaminated waste.
6.	Contaminated equipment or equipment that cannot be cleaned in the patient's home may be transported for disinfection to the center in an impermeable sealed plastic bag. Do not put these soiled items back into the healthcare bag. Never place used needles, soiled equipment, or dressings in the nursing bag. Place it in an impermeable sealed plastic bag	To prevent contamination of the bag and ensure proper disinfection of equipment.
7.	Dispose of sharps in an approved sharps disposal container. The sharps container must be kept in a separate 'dirty' compartment or a designated sharps container pouch or in an impermeable sealed plastic bag. Never put used sharps directly in the bag	To prevent injury and infection from sharps.
8.	Make an appointment for the next visit (either home or clinic), taking note of the date and time for follow-up care	To ensure continuity of care and proper follow-up.
9.	Follow local and state regulations for infectious waste disposal.	To comply with legal guidelines and ensure safe waste management.

3. NEONATAL CARE

PROCEDURE 3.1 NEONATAL ASSESSMENT

Key Terms

- **APGAR score:** Rapid assessment of newborn at 1 and 5 minutes after birth
- **Neonate:** Newborn baby from birth to 28 days of life
- **Congenital anomalies:** Structural or functional defects present at birth.
- **Anthropometry:** Measurement of body size (weight, length, head circumference)

INTRODUCTION

Neonatal assessment is the systematic evaluation of a newborn from birth up to 28 days of life to determine the baby's overall health and well-being. It helps in identifying any congenital abnormalities, understanding the current health status of the newborn, and educating parents about essential care measures to promote healthy growth and development in the future.

OBJECTIVES

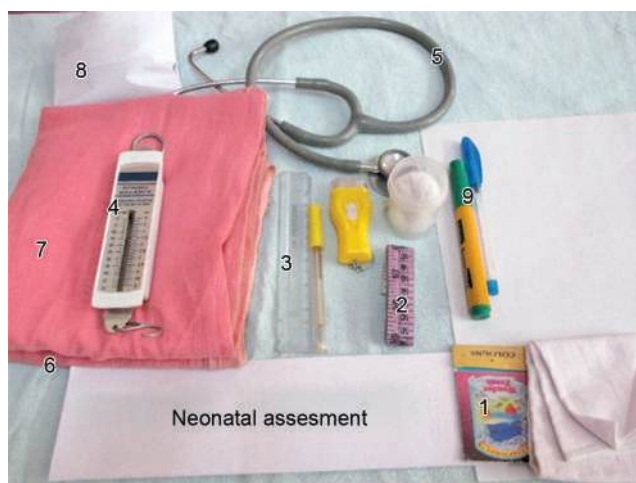
- To know the well-being of the baby
- To note down any congenital anomaly
- To assess the current health status of the baby
- To educate parents about neonatal care.

Points to Remember

- Take mother's verbal consent before assessing the child.
- Ensure that the neonate is breastfed and burped before assessment to avoid hindrances during the assessment
- Do not expose the neonate to cold while doing the assessment.

ARTICLES

The articles used in procedure are shown in Figure 1.



1. Handwashing articles—soap/soap strips, hand towel (*to dry the wet hands*)
2. Measuring tape (nonstretchable)
3. Measuring scale
4. Spring balance
5. Stethoscope
6. Newspaper
7. Big cotton cloth/*dupatta* (*to hold the baby for measuring weight*)
8. Paper bag (*to discard the used swabs*)
9. Pen and diary (*to note down the findings*)

FIGURE 1: Articles for neonatal assessment

HEALTH EDUCATION TO THE PARENTS

- Exclusive breastfeeding till six months
- Immunization as per national immunization schedule
- Signs of jaundice
- Personal hygiene of neonate
- Prevention of infection for neonate
- Appropriate clothing for neonate.

PROCEDURE

Steps	Procedure	Rationale
1.	Arrange the articles near the baby	To provide good workmanship
2.	Wash your hands with soap and water	To prevent cross infection
3.	Dry your hands with a towel to avoid touching the baby with wet hands	To prevent hypothermia in a baby
4.	Review the mother's obstetric history, number of pregnancies, history of previous pregnancies, and health during the pregnancy, complications during and after the pregnancy, history of any drug she has taken, her blood group, and Rh typing	To identify maternal risk factors and conditions that may affect the newborn's health and guide appropriate assessment and care.
5.	Ask for the immunization status of the neonate, the birth weight, color, and cry at the time of birth, and the breastfeeding practices.	To have background knowledge of the health status of the baby
Check the vital signs of the neonate		
1.	Respiration: Check the respiratory rate of the neonate by exposing their chest and abdomen. Normally, the respiration is rapid and shallow. The normal respiratory rate is 40–60/min. The respiratory rate in neonates can be counted by the rise and fall of the abdomen.	To assess the breathing pattern and detect respiratory distress or abnormalities early.
2.	Temperature: The axillary temperature is taken in neonates by inserting a digital thermometer under the axilla in the line of the infant's arm so that it covers the whole bulb of the thermometer. • Hold the neonate's arm firmly against the thermometer; otherwise, it may move and the temperature will not be accurate. • Keep the thermometer in the axilla for 2 minutes. The normal temperature of an infant is 36.5°–37.2°F. The temperature <36.5°F is suggestive of hypothermia, while the temperature >37.2°F is suggestive of fever	To accurately measure body temperature and identify hypothermia or fever in the neonate.
3.	Heart rate: Auscultate the heart sound of the child. The normal heart rate of the neonate is 120–140 beats/min. • Keep the stethoscope at the bottom of the left sternum for one minute (neonatal heart is lateral to the midclavicular line at the lower sternal border at the 4th intercostal space).	To evaluate cardiac function and detect any abnormalities in heart rate or rhythm.

After checking vital signs, perform the head-to-foot examination:



Contd...

Steps	Procedure	Rationale
4.	• Head: Observe the shape of the head. Check for birth injuries such as cephalohematoma, or caput succedaneum • Palpate fontanelles: Palpate the anterior and posterior fontanelle to determine whether they are open, closed, depressed, or bulging. The anterior fontanelle is diamond-shaped and closes at 12–18 months. The posterior fontanelle is triangular in shape and closes at 1½ months after birth. • Measurement of head circumference: Place the measuring tape above the supraorbital ridges anteriorly, above the ears laterally, and covering the occiput posteriorly	• To identify abnormalities in head shape and detect birth injuries such as caput succedaneum or cephalohematoma. • To assess intracranial status and normal skull development by checking fontanelle characteristics. • To evaluate brain growth and detect conditions like microcephaly or macrocephaly.
		
5.	Use the measuring tape that cannot be stretched	To ensure accurate and reliable measurement without error due to stretching of the tape.
6.	Securely wrap the tape around the widest possible circumference of the head. • The broadest part of the forehead is above the eyebrows and ears. • The tape should pass over the most prominent part of the back of the head covering the occiput position, so that maximum circumference is taken. • Take the measurement three times and take the average • It gives an indirect estimation of brain size. • Document the measurement. The head circumference of a term baby is approximately 35 cm	To ensure accurate and standardized measurement of head circumference, reflect true maximum head size, reduce measurement error by averaging readings, and assess brain growth and development indirectly.
7.	Eye: The eyes are blue or gray at birth, changing to the permanent color in 3–6 months. Observe for redness, swelling, and discharge	To assess normal eye appearance and detect early signs of infection, inflammation, or abnormalities in the neonate.
8.	Ears: Observe for low-set ears. Normally, the upper lobe of the ear of a neonate is in line with the outer canthus of the eye (dysmorphism)	To detect congenital anomalies (e.g., low-set ears/dysmorphism) that may indicate underlying developmental disorders.
9.	Nose: Observe for mucus accumulation inside the nares	To identify nasal obstruction due to mucus accumulation that may interfere with breathing.
10.	Mouth and throat: Observe for cleft lip and cleft palate (for early identification of birth defects)	To detect congenital defects like cleft lip and cleft palate for early management and feeding support.
11.	Neck: Observe the creases of the neck for the accumulation of dirt, redness, and excoriation	To assess skin condition and identify irritation, redness, or infection in neck folds due to poor hygiene or moisture.

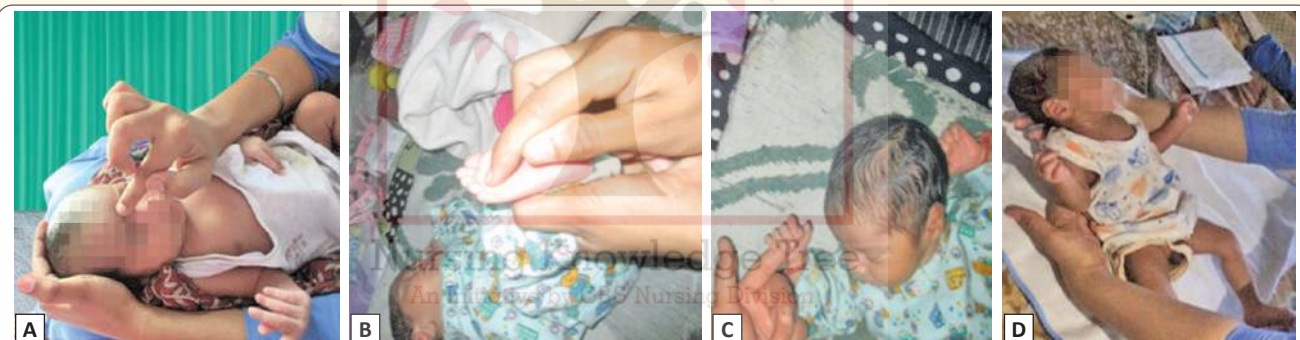
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Steps	Procedure	Rationale
12.	Chest: Expose chest area; it is bell-shaped. Observe for swollen nipples, i.e., witch's milk, do not press the area, and advise the mother also not to press. They are because of mother's hormones, and the swelling will disappear on its own. • Take the circumference of the chest • Place measuring tape under the chest • Take circumference at the nipple level • At birth, the chest circumference is 1–2 cm less than the head circumference, i.e., usually 31–33 cm. Chest grows faster than head at 9 months to 1 year both the circumference are equal. Thereafter, the chest circumference overtakes head circumference. Only in case of malnutrition, chest circumference is less than the head circumference at 1 year or after one year of age • Normal chest circumference ranges from 31 cm to 33 cm.	To assess normal chest shape and detect abnormalities such as swollen nipples (witch's milk) and to evaluate chest growth by measuring chest circumference for comparison with head circumference and nutritional status assessment.
		
13.	Record chest circumference	To document accurate measurements for comparison with head circumference and to assess the child's growth and nutritional status over time.
14.	Abdomen: Expose the abdomen to inspect. In normal neonates, abdomen appears rounded, slightly protuberant. Observe for any rash. Normal abdominal circumference is 29–31 cm. Observe the umbilical cord for redness, pus and bleeding. After birth, the cord begins to shrink. It changes in color from yellow-brown to black and slough off by 6–10 days after the birth, leaving a granulating area that heals in another week.	To assess normal abdominal appearance and detect abnormalities such as distension, rash, or signs of infection, and to evaluate umbilical cord condition for early identification of infection or delayed healing.
		

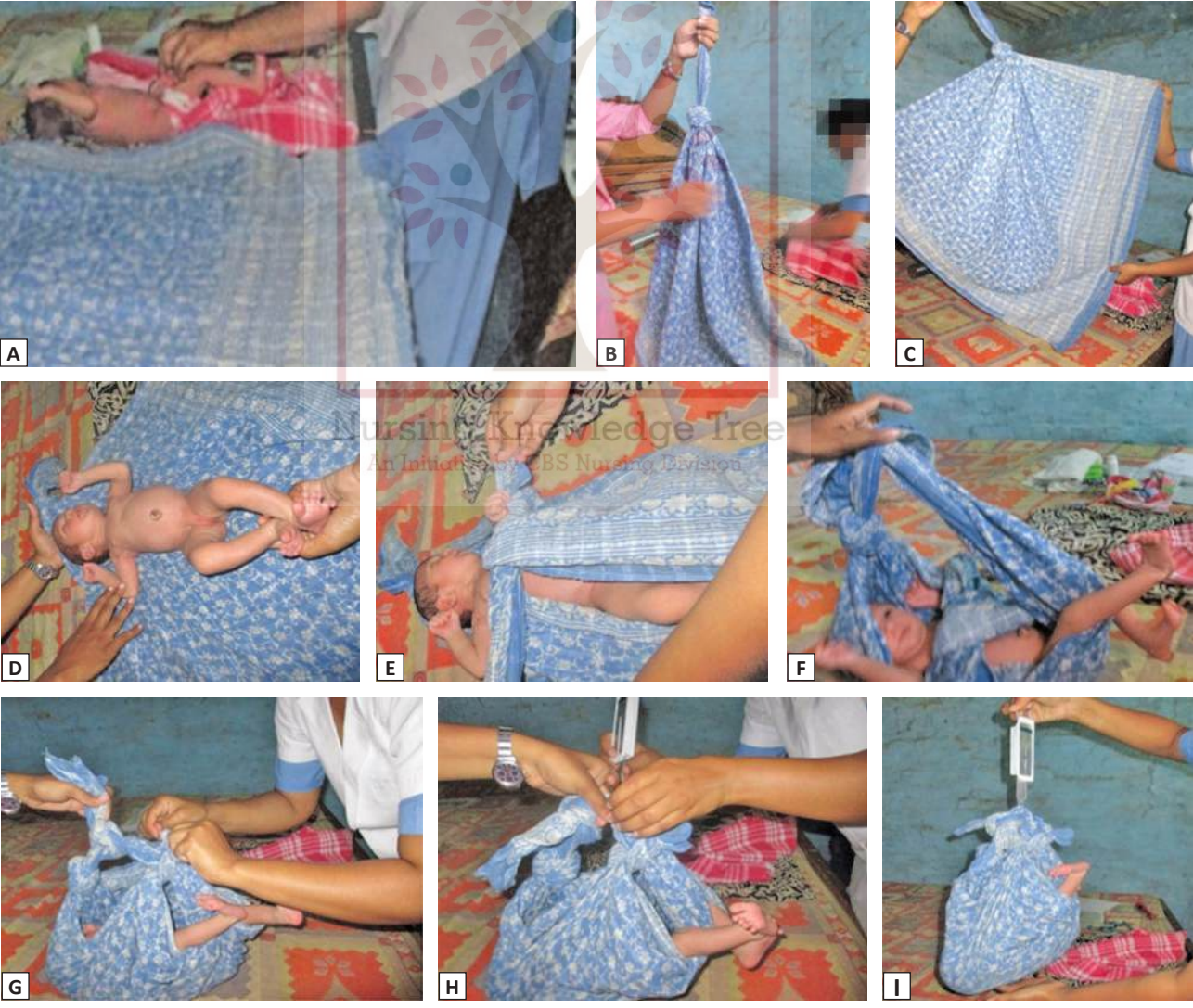
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Steps	Procedure	Rationale
15.	Measurement of abdominal circumference: - Place the measuring tape under the abdominal area - Measure the circumference at the umbilical level - It may be equal to the chest circumference or less by 1–2 cm from the chest circumference - Record the abdominal circumference	To assess abdominal growth and detect abnormalities such as distension and to compare with chest circumference for evaluation of neonatal development and nutritional status.
16.	Lower extremities: Watch and inspect for range of motion and symmetry. Assess for hip dislocation, clubfoot, polydactyly, or syndactyly of the feet for checking hip dislocation. Let the neonate lie on its back. Hold the lower limbs of the neonate with both of your hands. Flex the lower limbs to the thighs and thighs to the abdomen. Now rotate both limbs together. Normally, there will be a smooth rotation. In case of hip dislocation, there will be a sound of a chunk during rotation. Note it down and refer the child for further treatment	To assess range of motion, symmetry, and detect congenital abnormalities such as hip dislocation, clubfoot, or polydactyly for early diagnosis and referral for treatment.
17.	Back: Inspect the back for spina bifida, i.e., any hairy growth, dimple on the back or protrusion of meninges.	To detect spinal defects such as spina bifida early by identifying abnormalities like dimples, hairy patches, or meningeal protrusion
18.	Integumentary system: Normally lanugo (fine hair), and vernix caseosa are present; desquamation or peeling of the skin may occur during the first 2–4 weeks of life. Observe for yellowish coloration of eyes and skin. Observe for Mongolian spot at the back. They are dark gray-blue in color and fade away within a few years.	To assess normal skin findings (lanugo, vernix, desquamation) and identify abnormalities such as jaundice or Mongolian spots for early detection of physiological or pathological conditions.
19.	Anogenital area: - Buttocks are plump and firm. In the anal region, there should be no redness or fistulas. The newborn infant passes meconium within 24 hours and check for patent rectum. Ask mother whether child has passed meconium. Ask about frequency, color and consistency, and record it. During the first 3–5 days, the newborn usually passes greenish, sticky stools, and then onward, it starts turning to yellow in color. Color and consistency depend on type of feeds. A breastfed baby passes yellowish, loose stool (usually 4–6 per day); whereas a baby on formula feed passes light yellow, hard stool. Female genitalia: The female genitalia may be slightly swollen from the action of the maternal hormones. There can be signs of pseudomenstruation (for this the mother needs to be reassured) Male genitalia: Assess for descended testes. Observe baby while passing urine, and assess for hypospadias and epispadias. Normally baby passes urine in straight stream. (Normally the urethral opening is at the tip of penis, in hypospadias, the opening is at the lower side of penis, and in epispadias, it is at the top or side of penis rather than the tip). Neonate does not pass urine in straight stream in case they suffer with these abnormalities.	To assess normal bowel and bladder function, ensure patency of rectum and urethra, and detect congenital abnormalities or infections in the genital and anal region for early management.
20.	Urine: Urine is passed frequently. Urination may be delayed until the second day. Note down the frequency, color, and amount of urine.	To assess normal renal function and hydration status by monitoring frequency, color, and amount of urine passed.
21.	Neurological assessment Nervous system is strikingly immature when compared with the child or adult. The bodily functions and responses to external stimuli are carried on chiefly by the midbrain and reflexes of spinal cord. Certain reflexes are absolutely essential and protective to the life of newborn. Successful use of the reflex mechanism is evidence of normal functioning of nervous system.	To evaluate the maturity and functioning of the nervous system by observing reflex activity and responses to stimuli.

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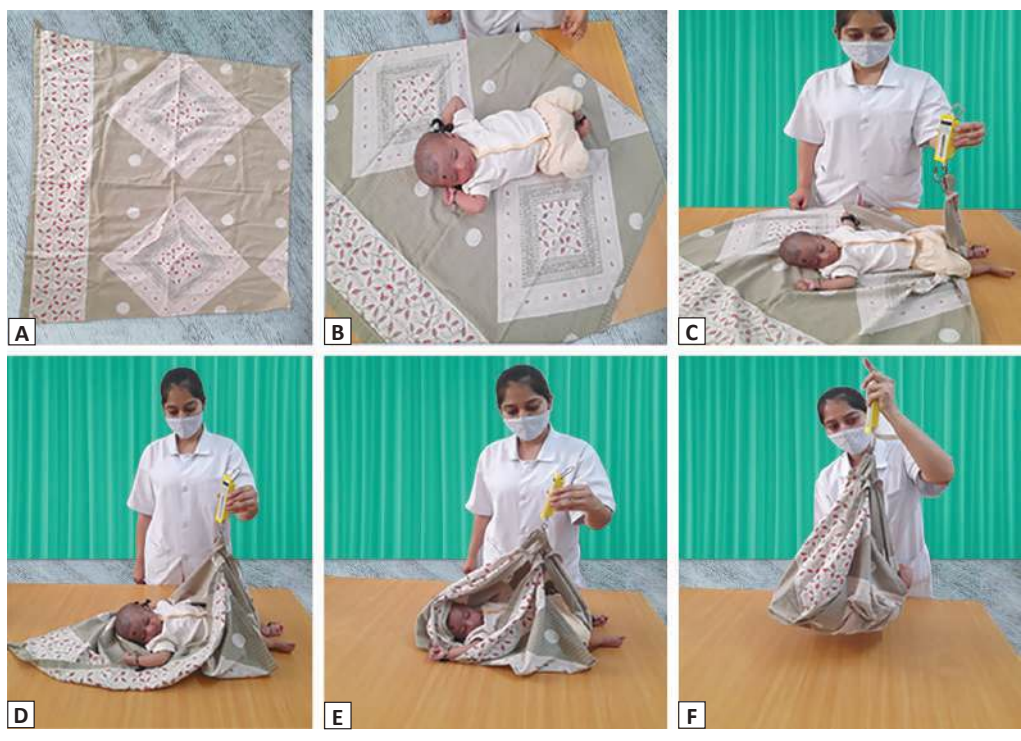
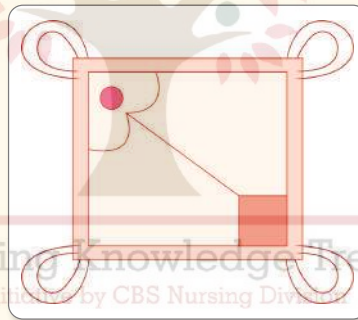
Steps	Procedure	Rationale
22	Reflexes-expected response • Moro: Response to sudden movement or loud noise should be consisting of symmetric extension and abduction of extremities, with fanning of the index finger and thumb forming a C shape. It can be observed by raising head of child at 45° and then suddenly lowering it. • Rooting: Touching or stroking the cheek along side of mouth causes neonate to turn head toward that side and begin sucking. • Sucking: Begin strong sucking movement in response to stimulation. • Palmar grasp: Grasp finger when palm is stimulated and held momentarily. • Plantar grasp: Toes curl downward when sole of foot is stimulated. • Babinski: Fanning and extension of all toes occur when one side of sole is stroked from the heel upward • Tonic neck: When head is turned to one side, extremities on same side extend and on opposite side flex • Glabellar reflex: Tapping on glabella causes eyes to blink • Doll's eye: As head is moved toward right or left, eyes lag behind and do not immediately adjust to new position. • Stepping reflex: It can be observed by holding baby in upright position and touching one foot lightly to a flat surface. The baby responds by making walking motion with both feet.	To assess the integrity and maturity of the newborn's central nervous system by observing normal protective and developmental reflex responses.
		
23.	Recording the length of baby • Spread a newspaper on the bed, so that length can be measured. • Let the baby lie down on the newspaper • Keep a scale on the crown of the head of baby and mark on the newspaper • Stretch the lower limbs of baby and keep a scale below the heel of baby and mark it on the newspaper • Measure the length between the two markings. The normal length is 45–55 cm. • Document the length of baby on record sheet	To measure the newborn's body length accurately for assessment of growth and to compare with standard normal values.
		

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Steps	Procedure	Rationale
Recording weight of the baby		
	1st Method • Spread a square sheet on the bed. • Put a knot on one corner of the cloth. • Let the baby lie on the cloth, with the head touching the knot. • Hold the two opposite ends of the cloth keeping both upper limbs out, and tie a knot. • Now, tie the knotted end from the head side of the baby with the opposite sides of the cloth to the corner of the cloth toward feet of the baby. • Give two knots tightly. • Hold two ends of the cloth • Now put another knot on the first knot.	To safely measure the newborn's weight using a spring balance technique when a standard weighing scale is not available and to assess growth and nutritional status accurately.
		
	• Now baby is tied up in the cloth (to make the baby secure before weighing) • Take a spring balance of 5 kg weighing capacity and adjust it to zero • Hold one loop of cloth in between the two knots and put it in the hook of spring balance • Hold the spring balance in one hand and raise the hand while supporting the baby with the other hand	

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Steps	Procedure	Rationale
	• Now remove the hand away from baby and let baby hang on the spring balance • Note the reading from spring balance and note down the weight of the baby. • Gently keep the baby on bed and open all the hands one by one • Handover the baby to the mother and document the weight on the record sheet. • Take the spring balance and hold loop from head end side and another loop from the opposite side (that is from the center of the lower limbs), keeping both lower limbs out of the cloth. • Now hold remaining two loops in the spring balance so that upper limbs are also out of the cloth. • Hold the spring balance in your right hand and then raise your hand while supporting the baby with left hand. • Now remove the left hand little away from the baby and let the baby hang on the spring balance. • Note the reading from spring balance to read the weight of the baby • Gently keep the baby on the bed and take out the loops from spring balance, remove the square sheet • Handover the baby to the mother and document the weight on record sheet.	



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Steps	Procedure	Rationale
Method 2: Weighing the infant using a baby weighing sling		
1.	Select a soft, strong cotton cloth capable of safely supporting the infant's weight.	Ensures comfort and safety of the infant during weighing.
2.	Securely attach strong cloth straps to the four corners of the cloth.	Prevents detachment and ensures safe handling of the infant.
3.	Place the infant gently in the center of the sling.	Ensures proper positioning and even weight distribution.
4.	Bring all four straps together above the sling.	Facilitates secure suspension of the sling.
5.	Ensure that the sling remains level when lifted.	Promotes accurate weight measurement.
6.	Check that the infant's body rests comfortably in the cloth, forming a hammock-like shape.	Prevents slipping and provides adequate support.
7.	Attach the gathered straps to a spring balance.	Enables measurement of the infant's weight.
8.	Allow the sling to hang freely and note the weight displayed on the spring balance.	Ensures an accurate weight reading.
9.	Remove the infant safely from the sling.	Prevents injury and ensures infant safety.
10.	Record and document the infant's weight.	Provides a permanent record for growth monitoring.
	Feeding - Observe the mother feeding the baby - Assist her in positioning the baby while feeding - Educate the mother to burp the child after feeding.	To assess breastfeeding technique, ensure correct positioning and attachment, and promote proper digestion by educating the mother about burping the baby after feeds.

DOCUMENTATION

Document the assessment of baby in the folder.

PROCEDURE 3.2 BABY BATH

Nursing Knowledge Tree
An Initiative by CBS Nursing Division

Key Terms

- Neonatal bath:** Cleaning and bathing a newborn to maintain hygiene.
- Sponge bath:** Cleaning baby with wet cloth before umbilical cord falls off.

INTRODUCTION

Baby bath is the procedure of maintaining cleanliness of the newborn's body. Although newborns do not perspire during the first month of life, daily bathing is advised for term babies to ensure hygiene and comfort. Since the thermoregulatory mechanisms of newborns are immature, special care must be taken to prevent both overheating and chilling during the bathing process.

PURPOSES

- To observe the behavior of the baby
- To stimulate circulation
- To remove dirt and waste products from the body
- To detect any physical abnormality
- To teach mother desirable hygienic measures.

INDICATIONS

- To maintain hygiene and cleanliness of the newborn's body
- To promote comfort and prevent skin infections

CONTRAINDICATIONS

- Unstable vital signs or sick/critically ill newborn
- Very low birth weight or preterm baby with poor temperature regulation