Positions for Surgery

Supine/ Dorsal – usual position for induction of general anesthesia and for entering the major body cavities

Modified Trendelenburg – used for lower abdominal surgery and some lower extremity surgery

Reverse Modified Trendelenburg – used for upper abdominal, neck and face surgery

Lithotomy – used in operation requiring perineal approach

Prone – used in surgery on the posterior part of the body

Lateral – used for operation on the kidneys, lungs or hips

Modified Fowler’s – sitting position; used mostly in neurosurgery

Modified jacknife – for rectal surgery

Position Patient during Surgery

<table>
<thead>
<tr>
<th>Abdominal surgeries</th>
<th>Supine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder surgery</td>
<td>Slightly trendelenburg</td>
</tr>
<tr>
<td>Perineal surgery</td>
<td>Lithotomy</td>
</tr>
<tr>
<td>Brain surgery</td>
<td>Semi-fowler’s</td>
</tr>
<tr>
<td>Spinal cord surgeries</td>
<td>Prone mostly</td>
</tr>
<tr>
<td>Lumbar puncture</td>
<td>Side lying, flexed body</td>
</tr>
</tbody>
</table>

Abdominal Surgical Incision

<table>
<thead>
<tr>
<th>Paramedian</th>
<th>vertical incision ( rarely used – intestinal problems)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longitudinal Midline</td>
<td>( middle laparotomy) begins at the level of the xiphoid to the supra pubic region ( for gastrectomy &amp; intestinal resection)</td>
</tr>
<tr>
<td>Right Subcostal (Kochers)</td>
<td>from epigastric area and extends laterally &amp; obliquely below the lower margin – biliary, spleen and liver</td>
</tr>
<tr>
<td>Procedure</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Bilateral subcostal –Mercedes Benz or Chevron incision</td>
<td>Liver transplant</td>
</tr>
<tr>
<td>Mc Burney</td>
<td>For appendectomy</td>
</tr>
<tr>
<td>Rocky Davis</td>
<td>For appendectomy</td>
</tr>
<tr>
<td>Pfannenstiel</td>
<td>Pelvic procedures, hysterectomy or CS</td>
</tr>
<tr>
<td>Inguinal</td>
<td>Inguinal herniorrhaphy</td>
</tr>
</tbody>
</table>

Different Surgeries According to Location

A. **ABDOMINAL SURGERY**
   1. Abdominal Laparotomy
   2. Herniorrhapy
   3. Cholecystectomy
   4. Pancreaticoduodenectomy (Whipple’s)
   5. Pancreatectomy
   6. Splenectomy
   7. Bariatric Surgery

B. **BREAST SURGERY**
   1. Mastectomy
   2. Breast Biopsy
   3. Mammoplasty
   4. Breast Augmentation,
      Breast Repair, Breast Lifting

D. **GENITOURINARY SURGERY**
   1. Circumcision
   2. Vasectomy
   3. Orchiectomy
   4. Cystectomy
   5. Transurethral Resection of the Prostate/Bladder (TURP/TURB)
      6. Nephrectomy
      7. Ureterolithotomy
      8. Pyelolithotomy
Post-operative phase

Begins with the admission of the client to the PACU and ends when healing is complete

PACU Nurse

- Responsible for caring for the client until the client:
  - Has recovered from the effects of anesthesia
  - Is oriented
  - Has stable vital signs
  - Shows no evidence of hemorrhage

Postanesthesia Care Unit

- Design
- Equipment
- Staffing

Postanesthesia Care Unit

Design

- Located near the operating rooms

Proximity to radiographic, laboratory, and other intensive care facilities on the same floor

- Open ward design

Each patient space should be well lighted

Multiple electrical outlets and at least one outlet for oxygen, air, and suction

Postanesthesia Care Unit

Equipment

1. Pulse oximetry (SpO₂)
2. Electrocardiogram (ECG)
3. Automated noninvasive blood pressure (NIBP) monitors
4. Capnography
5. Temperature
6. Air warming device, heating lamps, and warming/cooling blanket
**Emergency Equipment**

1. Oxygen cannulas
2. Masks
3. Oral and nasal airways
4. Laryngoscopes, endotracheal tubes, laryngeal mask airways, and self-inflating bags for ventilation
5. Defibrillation device
6. Tracheostomy, chest tube, and vascular cutdown trays

**Respiratory therapy equipment**

1. Continuous positive airway pressure (CPAP)
2. Ventilators
3. Bronchoscope

**Staffing**

- Nurses specifically trained in the care of patients emerging from anesthesia
- PACU should be under the medical direction of an anesthesiologist
- One nurse to one patient is often needed
- A charge nurse should be assigned to ensure optimal staffing at all times

**Care of the Patient**

**Transport from the Operating Room**

This period is usually complicated by the lack of adequate monitors, access to drugs, or resuscitative equipment

Patients should not leave the operating room unless they have a stable and patent airway, have adequate ventilation and oxygenation, and are hemodynamically stable

**Transport from the Operating Room**

- All patients should be taken to the PACU on a bed or trolley that can be placed in either:
  - Head down (Trendelenburg) → hypovolemic patients
  - Head-up position → pulmonary dysfunction
  - Lateral position → prevent airway obstruction and facilitates drainage of secretions.
A) Post Anesthetic Care

Nursing responsibilities:

1) Maintenance of Pulmonary Ventilation:
Position the client to side lying or semi-prone position to prevent aspiration

Oropharyngeal or nasopharyngeal airway:
Is left in place following administration of general anesthetic until pharyngeal reflexes have returned
It is only removed as soon as the client begins to awaken and has regained the cough and swallowing reflexes
All clients should received O2 at least until they are conscious and are able to take deep breaths on command
Shivering of the client must be avoided to prevent an increase in O2, and should be administered until shivering has ceased

2) Maintenance of Circulation:
Most common cardiovascular complications:

a) Hypotension

Causes:

- Jarring the client during transport while moving client from the OR to his bed
- Reaction to drug and anesthesia
  - Loss of blood and other body fluids
  - Cardiac arrhythmias and cardiac failure
  - Inadequate ventilation
  - Pain

b) Cardiac arrhythmias

  - Causes:
  - Hypoxemia
  - Hypercapnea
  - Interventions:
    - O2 therapy
    - Drug administration:
      - Lidocaine
      - Procainamide (Pronestyl)

3) Protection from injury and promotion of comfort

- Provide side rails
- Turning frequently and placed in good body alignment to prevent nerve damage from pressure
- Administration of narcotic analgesics to relieve incisional pain
B) Dismissal of client from recovery room: Modified Aldrete Score for Anesthesia Recovery Criteria

- The Five Physiological Parameters:
  - 1. Activity
  - 2. Respiration
  - 3. Circulation
  - 4. Consciousness
  - 5. Color

Post Anesthesia Care Unit

MODIFIED ALDRETE SCORE

<table>
<thead>
<tr>
<th>Area of assessment</th>
<th>Point Score</th>
<th>1 hour</th>
<th>2 hours</th>
<th>3 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muscle activity: Moves spontaneously or on command</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to move all extremities</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to move 2 extremities</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unable to control any extremity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiration:</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to breath deeply and cough</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Limited respiratory effort (dyspnea and splinting)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No spontaneous effort</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Area of assessment</th>
<th>Point Score</th>
<th>1 hour</th>
<th>2 hours</th>
<th>3 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circulation:</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP +/- 20% of pre-anesthetic level</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP +/- 20%-40% of pre-anesthetic level</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BP +/- 50% pre-anesthetic level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consciousness Level:</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fully awake</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arousable on calling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not responding</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Area of assessment</td>
<td>Point Score</td>
<td>1 hour</td>
<td>2 hours</td>
<td>3 hours</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>-------------</td>
<td>--------</td>
<td>---------</td>
<td>---------</td>
</tr>
<tr>
<td>O2 Saturation:</td>
<td></td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Unable to maintain O2 sat &gt;92% on room air</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Needs O2 inhalation to maintain O2 sat &gt;90%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O2 sat &lt;90% even with O2 supplement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Points</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Required for discharge from PACU: 7-8

Care of the Patient

**Routine Recovery**

a) Airway patency, vital signs, and oxygenation should be checked immediately on arrival  
b) Blood pressure, pulse rate, and respiratory rate measurements are routinely made at least every 5 min for 15 min or until stable, and every 15 min thereafter  
c) Pulse oximetry should be monitored continuously  
d) Neuromuscular function should be assessed clinically  
e) At least one temperature measurement  
f) Pain assessment  
g) Presence or absence of nausea or vomiting

Post-operative interventions

**PAIN MANAGEMENT**

Pain is usually greatest during the 12-36 hours after surgery  
Narcotic analgesics and NSAIDS may be prescribed together for the early period of surgery  
Provide back rub, massage, diversional activities, position changes

**POSITIONING**

- Clients who have spinal anesthesia is usually placed FLAT on bed for 8-12 hours  
- Unconscious client is placed side lying to drain secretions  
- Other positions are utilized BASED on the type of surgery  
- Deep breathing and coughing exercises Q2-4 hours

- → to remove secretions

- Leg exercises Q 2 hours → to promote circulation  
- Ambulation ASAP → prevents respiratory, circulatory, urinary and gastrointestinal complications  
- Hydration after NPO → to maintain fluid balance  
- Suction, either gastro or respiratory → to relieve distention, to remove respi secretions  
- Diet → progressive, usually given when bowel sounds and gag reflex return
<table>
<thead>
<tr>
<th>Clear liquid</th>
<th>Full liquid</th>
<th>Soft diet</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Coffee</em></td>
<td>Clear liquid PLUS:</td>
<td>All CL and FL plus:</td>
</tr>
<tr>
<td><em>Tea</em></td>
<td>Milk/Milk prod</td>
<td><em>Meat</em></td>
</tr>
<tr>
<td>Carbonated drink</td>
<td>Vegetable juices</td>
<td><em>Vegetables</em></td>
</tr>
<tr>
<td>Bouillon</td>
<td>Cream, butter</td>
<td><em>Fruits</em></td>
</tr>
<tr>
<td>Clear fruit juice</td>
<td>Yogurt</td>
<td><em>Breads and cereals</em></td>
</tr>
<tr>
<td><em>Popsicle</em></td>
<td>Puddings</td>
<td><em>Pureed foods</em></td>
</tr>
<tr>
<td><em>Gelatin</em></td>
<td>Custard</td>
<td></td>
</tr>
<tr>
<td>Hard candy</td>
<td><em>Ice cream and sherbet</em></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 20-6** Types of surgical drains: (A) Penrose, (B) Jackson-Pratt, (C) Hemovac.