



มหาวิทยาลัยราชภัฏนครปฐม



Fundamental Nursing Practicum

Unchisa Rattanakunuprakarn
Faculty of Nursing, Nakhon Pathom Rajabhat University



CHAPTER 7

BASIC NURSING PROCEDURES



Objectives

1

Select the appropriate equipment used to take vital signs.

2

Describe and perform the Basic nursing procedures correctly.



Vital Signs Assessment



Vital signs

These elements are more than just numbers; they are critical snapshots providing healthcare professionals with insights into a patient's core bodily functions.

1. **Pulse**
2. **Respiration**
3. **Temperature**
4. **Blood Pressure**








The Purpose of Taking Vital Signs



The purpose

1. Assessing General Physical Health
2. Identifying Signs of Potential Diseases
3. Monitoring Recovery Progress

QUICK TIPS VITAL SIGNS		
	BLOOD PRESSURE (BP)	SYSTOLIC 120 mmHg DIASTOLIC 80 mmHg Hypotension = Low blood pressure Hypertension = High blood pressure
	HEART RATE (HR)	60 – 100 bpm Bradycardia = <60 BPM Tachycardia = >100 BPM
	RESPIRATIONS (RR)	12 – 20 breaths/min Bradypnea = <12 breaths/min Tachypnea = >20 breaths/min
	TEMPERATURE (T)	97.8 – 99°F (36.5 – 37.2°C) Hypothermia = <95 F° (>35C°) Hyperthermia = >104 F° (>40 C°)
	OXYGEN (O₂)	95 – 100% Low oxygen levels = Hypoxemia
	PAIN	Pain is subjective data given to you by the patient Can be measured in various different ways: The numerical scale, Wong-baker faces, or verbal rating scale

Normal range in Body Temperature

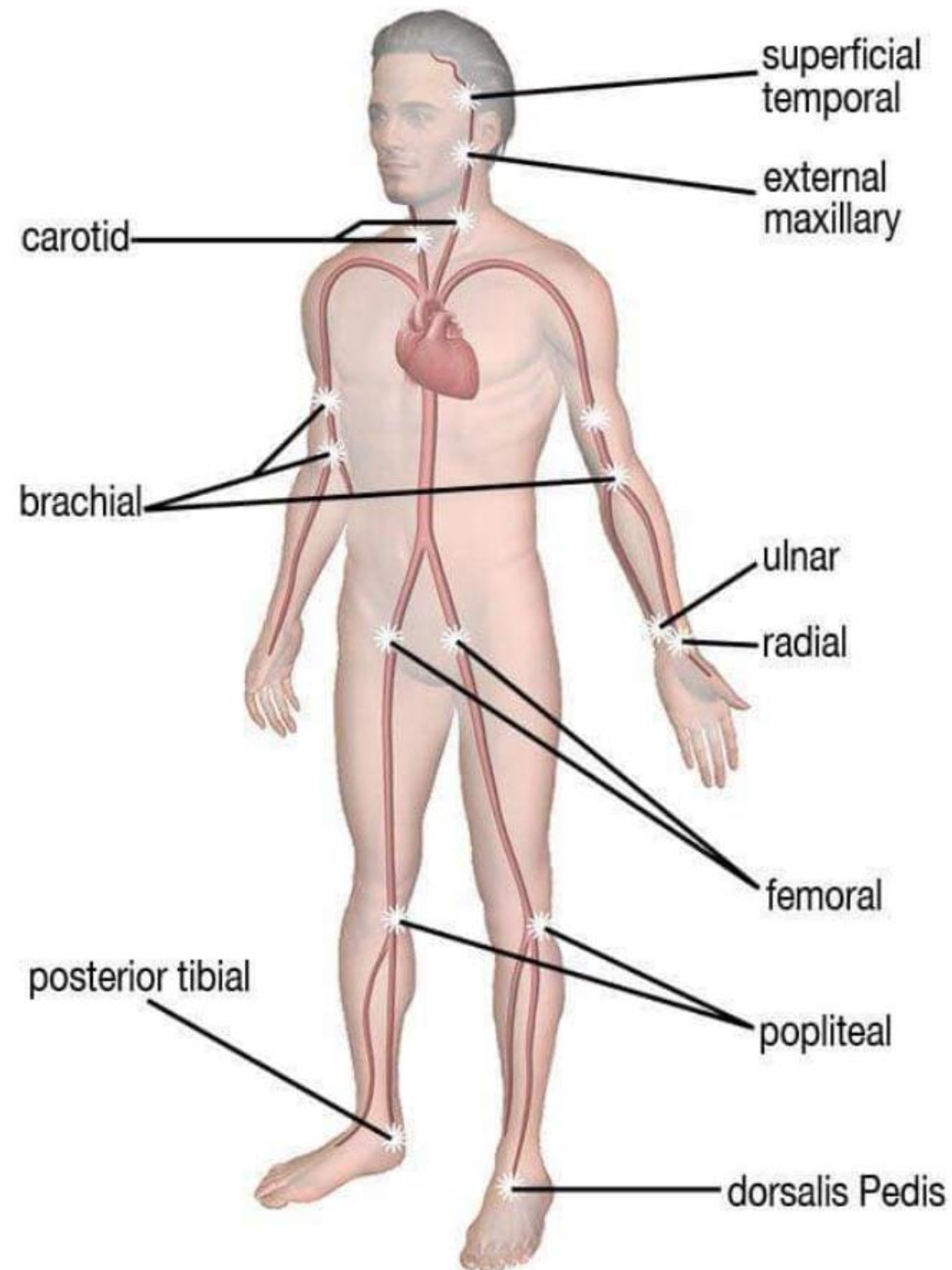


AGE		NORMAL RANGE	
		CELSIUS	FAHRENHEIT
Newborn	Axillary	35.5–39.5°C	96.0–99.5°F
1 year	Oral	37.7°C	99.7°F
3 years	Oral	37.2°C	99.0°F
5 years	Oral	37.0°C	98.6°F
Adult	Oral	37.0°C	98.6°F
	Axillary	36.4°C	97.6°F
	Rectal	37.6°C	99.6°F
70+ years	Oral	36.0°C	96.8°F

(Sue & Patricia, 2011; Ernstmeyer & Christma, 2021)



Normal range in Pulse



AGE	NORMAL RANGE	AVERAGE RATE/MINUTE
Newborn	100–170	140
1 year	80–170	120
3 years	80–130	110
6 years	75–120	100
10 years	70–110	90
14 years	60–110	90
Adult	60–100	80

(Sue & Patricia, 2011; Ernstmeyer & Christma, 2021)

Normal range in Respiration



AGE	NORMAL RANGE	AVERAGE RATE/MINUTE
Newborn	30–50	40
1 year	20–40	30
3 years	20–30	25
6 years	16–22	19
14 years	14–20	17
Adult	12–20	18

(Sue & Patricia, 2011; Ernstmeyer & Christma, 2021)

Normal range in Blood pressure



AGE	BLOOD PRESSURE (MM HG)
Newborn	Up to 70/45
5 years	Up to 115/75*
6 to 12 years	Up to 125/80*
13 to 15 years	Up to 126/78*
16 to 18 years	Up to 132/82*
Over 18 years	<120/80

Range Blood pressure (Adult): SBP 90-120/ DBP 60-90 mmHg

(Sue & Patricia, 2011; Ernstmeyer & Christma, 2021)

Equipment for Measuring Blood Pressure



Blood Pressure Monitors

The higher number, or systolic pressure, refers to the pressure inside the artery when the heart contracts and pumps blood through the body.

The lower number, or diastolic pressure, refers to the pressure inside the artery when the heart is at rest and is filling with blood.



Sphygmomanometers



blood pressure monitor



Stethoscopes

Measuring Blood Pressure



1. Position the person's arm level with the heart.
2. Stand no more than 3 feet away from the manometer.
3. Expose the upper arm.
4. Squeeze the cuff to expel any remaining air.
5. Find the brachial artery at the inner aspect of the elbow.
6. Place the stethoscope ear-pieces in your ears.
7. . Deflate the cuff at an even rate of 2 to 4 mm Hg per second.
8. Note the point where you hear the first and end sound.
9. Deflate the cuff completely.



From Mosby's Nursing video skill-intermediate.
<https://www.ndsu.edu/pubweb/bismarcknursing/intermediate/skill/M006.html>

Equipment for Measuring Temperature



Thermometers

Axillary. Temperatures can be taken under the arm using a glass or digital thermometer.

Orally. Temperature can be taken by mouth using either the classic glass thermometer, or the more modern digital thermometers that use an electronic probe to measure body temperature.

Rectally. Temperatures taken rectally (using a glass or digital thermometer)



Measuring Temperature



1. Position the person for an oral, rectal, axillary, or tympanic membrane temperature. The Sims' position is used for a rectal temperature.
2. Insert the probe into a probe cover.
3. Start the thermometer.
4. Read the temperature on the display.



From Mosby's Nursing video skill-intermediate.
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Measuring Pulse rate



Pulse

1. Using the first and second fingertips, press firmly but gently on the arteries until you feel a pulse.
2. Count your pulse for 60 seconds (or for 15 seconds and then multiply by four to calculate beats per minute).
3. When counting, do not watch the clock continuously, but concentrate on the beats of the pulse.



Counting Respiratory rate



Respiratory rate

The respiration rate is the number of breaths a person takes per minute.

1. Keep your fingers or stethoscope over the pulse site.
2. Do not tell the person you are counting respirations.
3. Begin counting when the chest rises.
4. Count respirations for 30 seconds. Multiply the number by 2



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Equipment and taking oxygen in blood



Oxygen in blood using a Pulse Oximeter



1. Clip or tape the sensor to the site.
2. Turn on the oximeter.
3. Read the SpO₂ on the display.



How to management ?






The 7 Vital Signs: Integrative Care At It's Best

Vital	Purpose	Target Range	Interventions
 Outlook/PHQ9	Mood, affect, judgment, insight	In healthy adults, a state of well-being in which the individual realizes their own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to the community	<ul style="list-style-type: none">• Developing a routine that includes exercise, hydration, nutrition and sleep to promote circadian rhythm and wellness• Medication compliance• Engaging in group, behavioral and individual therapy• Promote socialization
 Temperature	Measured warmth or coolness of the human body; can vary with gender, recent activity, food and fluid intake, time of day, and factors like menstrual cycle; the body regulates temperature to fight disease	97.8°-99° F for healthy adults	<ul style="list-style-type: none">• For fever, drink plenty of fluids and adequate rest, wear lightweight clothing, and avoid heavy blankets, Keep the room at a comfortable temperature, antipyretic medication• For hypothermia, passive rewarming for mild hypothermia, use warm dry compresses, do not apply direct heat, provide warm fluids, remove the person from the cold

How to management ?



 <p>Pulse</p>	Measured heart rate; the number of times the heart beats per minute	60-100 beats per minute for healthy adults	<ul style="list-style-type: none">• Smoking cessation, limit caffeine intake, deep breathing, medication management, reduce stress and take a break from screens
 <p>Blood Pressure</p>	Measure of systolic and diastolic pressure using a sphygmomanometer; number of heart beats per minute	120/80 mmHg in healthy adults	<ul style="list-style-type: none">• For hypertension, medication and deep breathing, exercise regularly, limit sodium and caffeine, PCP or cardiology consult• For hypotension, drink plenty of water, wear compression stockings, eat 5-6 small meals daily, deep breathing, tai chi, PCP or cardiology consult
 <p>Respiration</p>	Measured by number of breaths per minute at rest	12-16 breaths per minute for healthy adults	<ul style="list-style-type: none">• Diaphragmatic breaths instead of chest breathing• Rescue inhalers• Slowly breathe in through the nose, fill lower lungs, then upper lungs. Hold breath for 4 seconds. Exhale slowly and relax the muscles in the face, jaw, shoulders, and stomach.• Breathe slowly into a paper bag or cupped hands



Administering oxygen and suctioning

Administering oxygen and suctioning



Objectives

1. Describe nursing interventions that promote oxygenation.
2. Select the appropriate equipment used to administering oxygen and suctioning



EQUIPMENT for giving an oxygen



Oxygen Flow Meter



Portable Oxygen Tank

EQUIPMENT for giving an oxygen



humidifier bottle



Portable Oxygen Tank

EQUIPMENT for giving an oxygen



1

Nasal Cannula



Flow rate

Nasal cannulas can have a flow rate ranging from 1 to 5 liters per minute (L/min), with a 4% increase in FiO_2 for every liter of oxygen, resulting in range of fraction of inspired oxygen (FiO_2) levels of 24-44%.

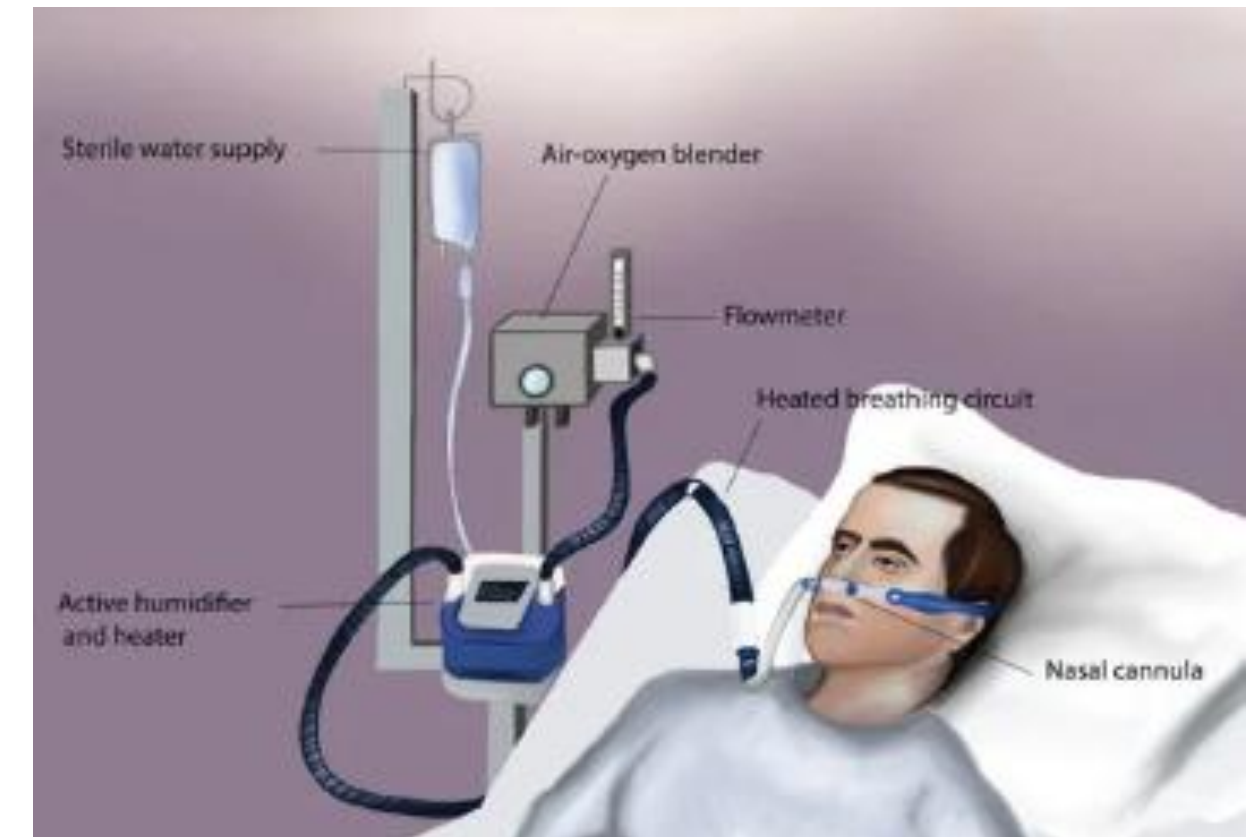
EQUIPMENT



2

High-Flow Nasal Cannula

High-flow nasal cannula therapy is an oxygen supply system capable of delivering up to 100% humidified and heated oxygen at a **flow rate of up to 60 liters per minute**. Patients with high-flow nasal cannulas are generally in critical condition and require advanced monitoring



EQUIPMENT



3

Simple Mask

A simple mask fits over the mouth and nose of the patient and contains exhalation ports

Flow Rate

Simple masks should be set to a flow rate of 6 to 10 L/min, resulting in oxygen concentration (FiO₂) levels of 35%-50%. The flow rate should never be set below 6 L/min because this can result in the patient rebreathing their exhaled carbon dioxide.



EQUIPMENT



4 Mask with bag

A non-rebreather mask consists of a mask attached to a reservoir bag that is attached with tubing to a flow meter.

Flow rate

The flow rate for a non-rebreather mask should be set to deliver a minimum of **10 to 15 L/minute**. The reservoir bag should be inflated prior to placing the mask on the patient. With a good fit, the non-rebreather mask can deliver between **60% and 80% FiO₂**.



EQUIPMENT

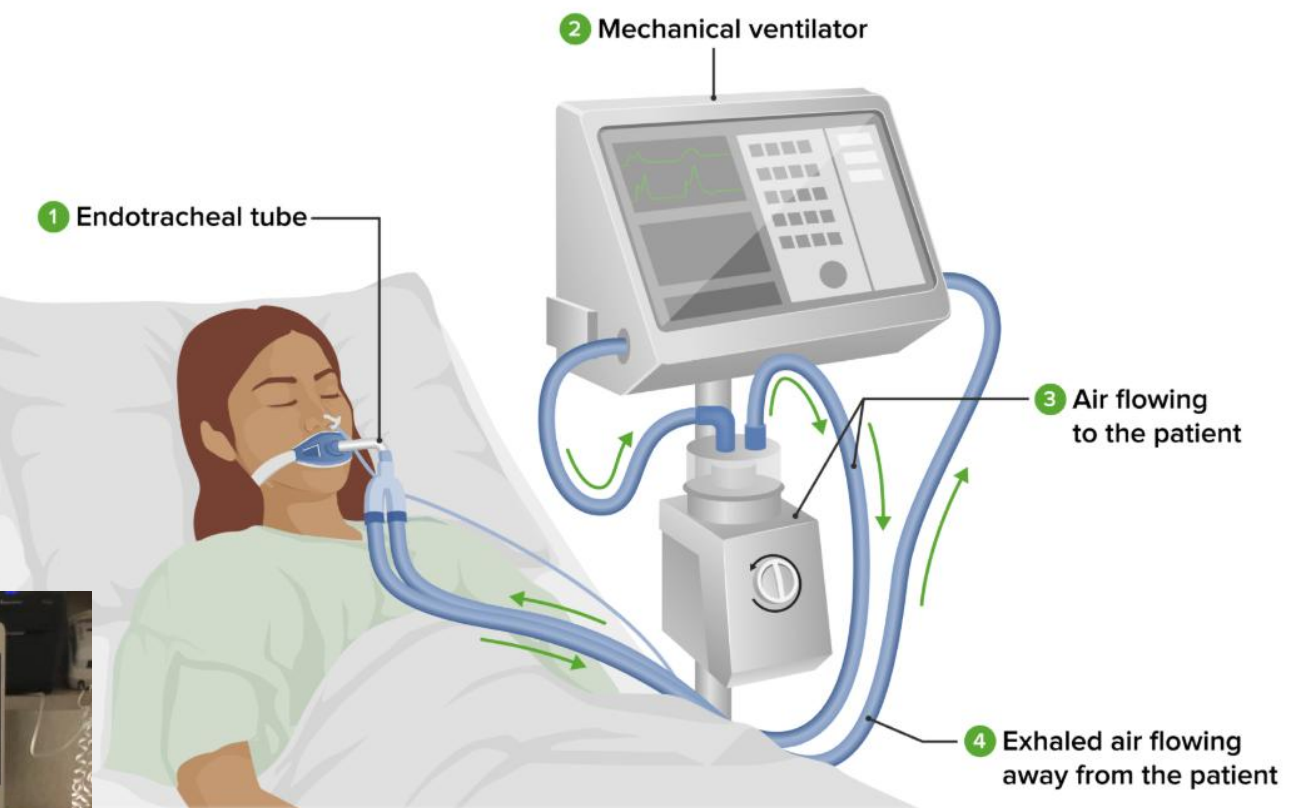


5

Mechanical Ventilator

A mechanical ventilator is a machine attached to an endotracheal tube to assist or replace spontaneous breathing.

FiO₂ can be set from 21-100%. Nurses collaborate with respiratory therapists and the health care providers regarding the overall care of the patient on a mechanical ventilator.



(Sue & Patricia, 2011; Ernstmeyer & Christma, 2021)

Administering oxygen



Generally to administration oxygen

1. Wash hands/hand hygiene.
2. Verify the prescribing practitioner's order.
3. Attach humidifier to oxygen flow meter.
4. Insert humidifier and flow meter into oxygen source in wall portable unit.
5. Attach the oxygen tubing and nasal cannula to the meter and turn it on to the prescribed flow rate
6. Check for bubbling in the humidifier.
7. Place the equipment to client.
8. Monitor vital signs, oxygen saturation



From Mosby's Nursing video skill-intermediate.
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Equipment for suctioning



Suctioning Endotracheal and Tracheal Tubes

EQUIPMENT

- Sterile gloves
- Mask, eye protection, and gown if appropriate
- Source of negative pressure
- Sterile suction catheter
- Oxygen or Ambu bag
- Equipment for tracheostomy care or tracheostomy care tray



Administering suctioning



Generally to administration suctioning

1. Assess depth and rate of respirations; auscultate breath sounds.
2. Assemble supplies on bedside table
3. Wash hands/hand hygiene.
4. Connect suction tube to source of negative pressure. Set suction control to between 100 and 120 mm Hg. (Adult)

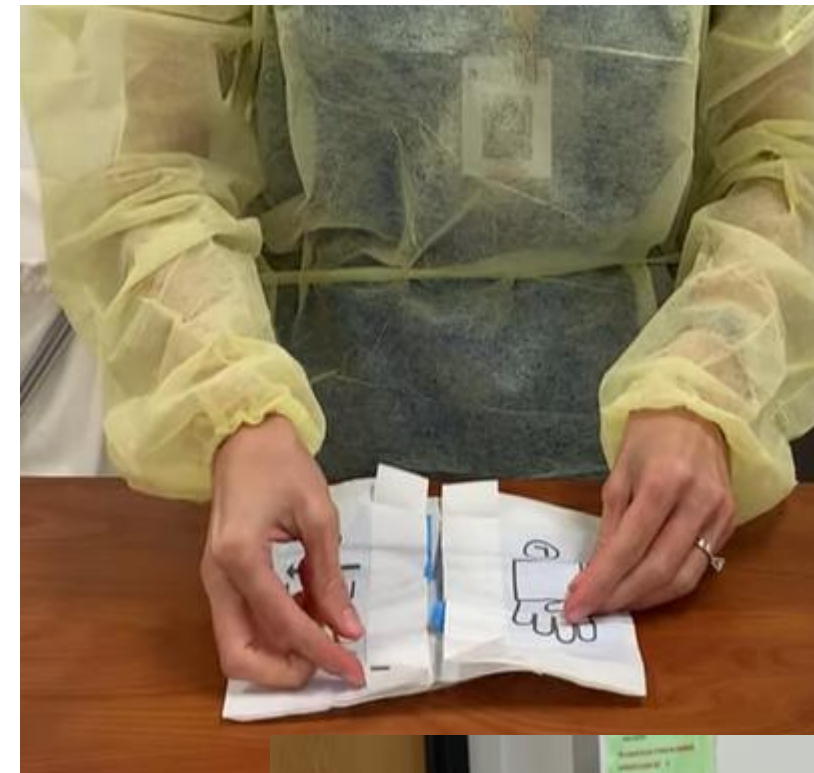


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Administering suctioning



5. Administer oxygen or use Ambu bag before beginning procedure.
6. Apply sterile glove to dominant hand.
7. Open sterile suction catheter or use the reusable closed system catheter. Attach catheter to suction.
8. Quickly and gently insert the catheter during inspiration until resistance is met or the client coughs; then pull back 1 cm (1/2 inch).



Administering suctioning



9. Apply suction intermittently while gently rotating the catheter and removing it
10. Suction for no more than 10 seconds.
11. Administer oxygen using the sigh function on the ventilator or using an Ambu bag.
12. Assess airway and repeat suctioning as necessary.
13. Wash hands/hand hygiene.





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