Lesson Plan

Vital Signs and Body Measurement

Module Overview

GOALS

1. Discuss the importance of accurate body measurements.
2. Discuss how vital sign readings provide practitioners with important clues about the patient's overall health.
3. Discuss factors that should be considered when performing measurements and vital signs.
4. List steps and rationale for adult height and weight, temperature, pulse and respiration, blood pressure, and pulse oximetry.

PERFORMANCE OBJECTIVES FOR THE MODULE

- PO1: Measure weight and height
- PO2: Measure temperature
  - Oral
  - Axillary
  - Aural
  - Temporal
- PO3: Measure radial pulse and respiration
- PO4: Measure blood pressure
- PO5: Measure pulse oximetry

MODULE RESOURCES

- Measure Height and Weight Skill Checklist
- Measure Temperature Skill Checklist
- Measure Pulse and Respirations Skill Checklist
- Measure Blood Pressure Skill Checklist
- Perform Pulse Oximetry Skill Checklist

KEY POINTS FOR BACKGROUND AND IMPORTANCE SECTION

1. Height and weight are common measurements taken during an office visit.
   - Increased body mass index (BMI) correlates with increased risk for conditions such as heart disease, hypertension, type 2 diabetes, and some cancers.
2. Vital signs provide general health information and possible health irregularities.
   - Vital signs indicate signals of overall health.
   - Vital signs help you catch irregularities early.
   - Never guess on vital signs.
3. Considerations
   - Safety is top priority.
   - Consider side rails on scales.
   - No BP on side of mastectomy, fistula, or if paralyzed.
   - Ensure you have properly sized equipment.
   - Check nails and SpO2.
   - Hot/cold food or beverages, vaping, or smoking can alter temperature.
   - Follow office policies on activities that might affect vital sign measurements.

Introduction

CASE STUDY

Refer to the Vital Signs and Body Measurement Case Study

PATIENT EXPERIENCE COACH FEATURE

LESSON PLAN

In a discussion board exercise or an in-class activity, ask the students to answer the following.

1. Have you ever experienced pain when having your blood pressure taken? What did you think about that?
2. Why may older patients be more sensitive to pain during blood pressure measurements?
3. What is a good starting point for how high to inflate the cuff during a blood pressure measurement?
4. Do you think that in some situations the patient may feel discomfort even if you do not overinflate the cuff? In what situations? How can you address this when the patient expresses you are hurting them during a blood pressure measurement?

Skills

MEASURE WEIGHT AND HEIGHT

Walkthrough: Skill Overview

LESSON PLAN

- Play full walkthrough video and discuss with students

OVERVIEW NOTES

1. Weight monitoring is essential for some medical conditions such as pregnancy, congestive heart failure, dialysis, and some eating disorders. It is also essential for assessing growth patterns in children.
2. Weight can be a sensitive topic, so it is important to display compassion and understanding while explaining the importance of having their weight measured.
3. Never force the patient to have their weight measured.
4. Document all refusals to have weight assessed in the patient's medical record.
5. Height measurements should be performed annually and is necessary to calculate BMI, nutritional status, and bone health.
6. BMI calculation:
    - Patients weight in kilograms divided by their height in meters squared (kg/2).
    - Used to screen for risk factors that can lead to specific health problems such as chronic disease.
    - A BMI greater than or equal to 25 is overweight.
    - A BMI greater than or equal to 30 is considered obese.
    - BMI will automatically populate in most EMRs once you enter the height and weight.

Beginning Steps

LESSON PLAN

- Play the Beginning Steps video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Check the EHR for the reason for visit

- Check for the reason for visit.
- Review the patient's most recent height and weight measurements.

STEP 2. Perform hand hygiene

- Perform hand hygiene to decrease the chance of the spread of infection.

STEP 3. Balance the scale

- Assure accuracy.
- Upper and lower weight should be on zero, and the indicator point should be in the center of the balance area.
- Follow the manufacturer's instructions to properly calibrate.

STEP 4. Greet the patient

- Identify yourself.
- Give your title and provider's name.

STEP 5. Verify the patient's identity

- Use two identifiers.

STEP 6. Explain the procedure

- Use terms that the patient can understand.
- Obtain consent to touch the patient.
- Provide the patient with the opportunity to ask questions.

STEP 7. Have the patient remove shoes, coat, and anything heavy from their pockets.

- Remove these items to obtain the most accurate measurement.

STEP 8. Place paper towel onto scale

- Place paper towel onto scale to protect the patient's feet from micro-organisms from a previous patient.

Measure Weight

LESSON PLAN

- Play the Measure Weight video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Position the patient

- Assist the patient to protect them from falling.
- Instruct the patient not to move to maintain a more accurate reading.

STEP 2. Begin measurement

- Move lower weight to appropriate notched groove.
- Ensure the weight is firmly secured in groove.
- The patient's last weight can be used as a starting point for the measurement.

STEP 3. Slide upper weight along calibration bar

- Slide the upper weight to the patient's previous weight and continue tapping until the indicator point is centered in balance area.
- The upper bar provides smaller increments of weight for a more precise measurement.

STEP 4. Ask the patient to step off scale

- Assist the patient off scale to reduce falling risk.
- Leave weights in place to read later and document.

Measure Height

LESSON PLAN

- Play the Measure Height video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Slide the rod upward

- Slide the movable calibration bar upward, well beyond the height of the patient.
- Extend the folding extension bar to a horizontal position.

STEP 2. Position the patient

- Assist the patient back onto scale with their back toward the calibration rod.
- Tell the patient to stand erect and look ahead.

STEP 3. Lower the calibration rod

- Gently lower until it touches the patient's head.
- Compress the hair for accuracy if needed.
- The bar must be at a 90-degree angle.

STEP 4. Instruct the patient to step off scale

- Keep bar extended and instruct the patient to step down from the scale.
- Assist the patient off the scale.

Concluding Steps

LESSON PLAN

- Play the Concluding Steps video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Read the weight

- Read the weight scale by adding the measurement on the lower bar to the measurement on the upper bar.
- Read to the nearest quarter pound.
- Return weights to zero.

STEP 2. Read the height

- Read height measurement from the top down, where rods intersect.
- Read to nearest quarter inch.

STEP 3. Document the procedure

- Document measurements in the EHR.

STEP 4. Reset the calibration rod

- Return the movable calibration rod to its lowest position.
- Now it is ready for next patient.

MEASURE TEMPERATURE

Walkthrough: Skill Overview

OVERVIEW NOTES

- Play full walkthrough video and discuss with students

OVERVIEW NOTES

1. Body temperature is the balance of heat produced and heat loss within the body affected by various factors.
2. Various methods of measuring body temperature should be chosen based on patient's age, recent activity, health status, and equipment available.
3. The various routes of temperature are dependent upon individual patient factors.
4. Oral route is the most convenient route but is affected by eating, drinking, and smoking.
5. The least accurate route is axillary but is sometimes used for children.
6. Aural (ear) should not be used if patient has buildup of cerumen, discharge, or ear pain.
7. Temporal (forehead) may be used if patient is not diaphoretic and can hold still.
8. Reference ranges for temperature:
    - Oral, tympanic, and temporal; 98.6 degrees F or 37 degrees C.
    - Axillary one degree lower than oral, tympanic, and temporal.
    - Rectal one degree higher than oral, tympanic, and temporal.

Beginning Steps

LESSON PLAN

- Play the Beginning Steps video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Check the patient's EHR

- Record reason for visit and orders.

STEP 2. Assemble and disinfect equipment and supplies

- Check the battery strength if applicable.

STEP 3. Greet the patient

- Identify self and state title and provider you work with.

STEP 4. Verify patient identity

- Confirm two identifiers.

STEP 5. Perform hand hygiene

- Maintain highest level of cleanliness.
- Illustrate antiseptic practice.

STEP 6. Explain the procedure

- Explain the procedure and reason using terms understandable by the patient.
- Obtain consent.
- Provide opportunities for the patient to ask questions.

Measure Oral Temperature Electronically

LESSON PLAN

- Play the Measure Oral Temperature Electronically video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Ensure the patient has not eaten, drunk, or smoked recently

- Verify no food, drink, or smoking within 15 to 30 min.
- Follow facility protocol and guidelines.

STEP 2. Prepare the thermometer

- If applicable, remove the thermometer from docking station and attach oral probe, or just remove the probe from the unit.
- Cover the probe with disposable cover and lock in place.
- Confirm proper mode (oral, axillary, or rectal).

STEP 3. Place the probe under the tongue

- Place under tongue in posterior sublingual pocket on either side of the frenulum linguae.
- Instruct the patient to seal lips around the probe to provide the most accurate reading.

STEP 4. Hold the probe in place

- Hold the probe in place until the thermometer produces an auditory signal and the temperature is displayed.
- Removing before the beep will result in an inaccurate reading.

STEP 5. Remove the probe

- Note the reading and remove the probe from the patient's mouth.
- Dispose of the probe cover in appropriate receptacle.
- Avoid touching the probe cover to prevent transfer of micro-organisms.

STEP 6. Clean the thermometer

- Clean and replace in docking station, if applicable, to prevent cross-contamination between uses.
- Docking turns off the thermometer and resets it.

Measure Axillary Temperature Electronically

LESSON PLAN

- Play the Measure Axillary Temperature Electronically video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Prepare the thermometer

- If applicable, remove the thermometer from docking station, or remove the probe from unit. (You will use the oral probe for axillary temperatures.)
- Cover the probe with disposable cover and lock in place.
- Verify the proper mode (oral, axillary, or rectal).

STEP 2. Expose the armpit and pat dry

- Use paper towel to pat, not rub skin dry.
- Perspiration cools the skin which can result in inaccurate reading.
- Rubbing skin may increase temperature.

STEP 3. Place the probe in the armpit

- Place the end of the probe in the center of the armpit.
- Instruct the patient to hold their arm snuggly against chest or abdomen to reduce air current.

STEP 4. Hold the probe in place

- Avoid movement of probe while being monitored to ensure accuracy.

STEP 5. Remove the probe

- Note the reading and remove from the patient's armpit.
- Dispose of the probe cover in appropriate receptacle.
- Avoid touching the probe cover to prevent transfer of micro-organisms.

STEP 6. Clean the thermometer

- Clean and replace the thermometer to docking station or return the probe to unit.
  - Cleaning prevents cross-contamination between uses.
  - Docking turns off the thermometer and resets it.

Measure Aural Temperature

LESSON PLAN

- Play the Measure Aural Temperature video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Ask relevant questions

- Check for possible cerumen, sensitivity, or infections.
- If the patient has earache, discharge, infection, or earwax buildup, choose a different route.

STEP 2. Prepare the thermometer

- Turn on the tympanic electronic thermometer.
- Attach disposable cover to prevent contamination of probe.

STEP 3. Position the ear and insert probe

- For adults, pull pinna up and back. For children 3 years and younger, pull pinna down and back.
- Insert the probe tip gently in ear.
- Angle the probe toward temple on opposite side.

STEP 4. Obtain and note reading

- Activate device.
- Note reading on digital display.

STEP 5. Remove the probe

- Gently remove the probe from the patient's ear.
- Dispose of the probe cover in appropriate receptacle.
- Avoid touching the probe cover to prevent transfer of micro-organisms.

STEP 6. Clean the thermometer

- Clean and replace in protective base to prevent cross-contamination between uses.

Measure Temporal Artery Temperature

LESSON PLAN

- Play the Measure Temporal Artery Temperature video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Examine the patient's forehead

- Brush hair aside and verify it is dry.

STEP 2. Prepare the thermometer

- If applicable, attach the disposable cover to prevent contamination of probe.

STEP 3. Place the thermometer on forehead

- Starting at center of forehead, above nose, hold the probe flush against skin.
- Depress the scan button and hold.
- Releasing scan button may result in inaccurate reading.

STEP 4. Slide the thermometer across forehead

- Gently move the thermometer probe across forehead from midline to just in front of the hairline.
- A clicking sound and flashes of red light indicate the probe is in a region where temperature rises.

STEP 5. Lift the probe and place behind the ear

- If the patient is diaphoretic or recommended by manufacturer, hold the scan button and place behind earlobe, below mastoid process.

STEP 6. Read temperature

- Release the scan button.
- Lift the thermometer and read display window.

STEP 7. Clean the thermometer

- If applicable, discard the disposable probe cover.
- Disinfect thermometer and replace protective cover to prevent cross-contamination between uses.

Concluding Steps

LESSON PLAN

- Play the Concluding Steps video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Perform hand hygiene

- Maintain highest level of cleanliness.
- Illustrate antiseptic practice.

STEP 2. Document procedure

- Document the procedure in the EHR.

MEASURE PULSE AND RESPIRATIONS

Walkthrough: Skill Overview

LESSON PLAN

- Play full walkthrough video and discuss with students

OVERVIEW NOTES

Measure Pulse

1. There are several pulse sites within the body.
   - Temporal
   - Carotid
   - Brachial
   - Radial
   - Femoral
   - Popliteal
   - Dorsalis Pedis
   - Apical
2. Pulse rate is the number of heart beats in 1 min.
3. Resting pulse rate is used as a baseline for a patient's usual pulse.
4. Patients can be:
   - Tachycardic, meaning they have a fast heart rate (greater than 100 beats per min).
   - Bradycardic meaning, they have a slow heart rate (lower than 60 beats per min). This may be normal in athletes.
   - Or have an arrhythmia or irregular heart rhythm.
5. Pulse should be assessed for 30 seconds and multiplied by 2 and noted with characteristics of rate (number of beats per min); rhythm (interval or time between beats); and volume (strength of the contraction).
6. How to note in chart:
   - Rhythm (Normal or abnormal)
   - Volume (Normal, bounding [strong], or thready [weak])
7. If the patient has an abnormal pulse, take for a full minute.

8. Average Heart Rate by Age:
    - Newborn (birth to 1 month) 120 to 160/min
    - Infant (1 to 12 months) 80 to 140/min
    - Toddler (1 to 3 years) 80 to 130/min
    - Preschool (3 to 5 years) 80 to 120/min
    - School-age (6 to 15 years) 70 to 100/min
    - Adult (older than 15 years) 60 to 100/min

Respirations

9. Respirations measure the numbers of breaths the patient takes in 1 min.
10. One inhalation and one exhalation equals one respiration.
11. Respiration terms include:
    - Hyperpnea: An increase in the volume of breathing.
    - Hypopnea: A decrease in the volume of breathing and is often related to sleep apnea.
12. Respirations should be assessed for 30 seconds and multiplied by 2, unless there are any abnormalities noted during the measurement.
13. Respiration characteristics include:
    - Rate: # of breaths per min
    - Rhythm: Time between breaths: Consistency (Regular or irregular)
    - Depth: Amount of air inhaled or exhaled (Normal, deep, or shallow)
14. Abnormal breathing patterns and breathing difficulty can be linked to many causes.
    - Anemia
    - Asthma
    - COPD
    - Metabolic disorders
    - Environmental
15. The normal respiratory rate in a newborn averages 30 to 50/min compared to an adult rate of 12 to 20/min.

Beginning Steps

LESSON PLAN

- Play the Beginning Steps video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Check the patient's EHR

- Check for any orders.
- Review last pulse reading on established patients.

STEP 2. Greet the patient

- Greet the patient and identify yourself, your title, and the provider you work with.

STEP 3. Verify patient identity

- Use two identifiers.

STEP 4. Perform hand hygiene

- Reduces micro-organisms on skin of the hands and helps prevent the transmission of pathogens to patients.

STEP 5. Explain the procedure

- Use terms the patient can understand.
- Obtain consent to touch the patient.
- Give the patient the opportunity to ask questions.

Measure Radial Pulse

LESSON PLAN

- Play the Measure Radial Pulse video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Position the patient

- The patient should be in sitting position and should have rested for several minutes.
- Support the lower arm with flexed elbow up to 90 degrees.

STEP 2. Locate pulse

- Place tips of your first, second, and third fingers over the radial artery.
- Apply light to moderate pressure to locate pulse.
- Never use your thumb to locate a pulse.

STEP 3. Note rhythm and volume

- Irregular versus regular
  - Rhythm (time between beats is consistent)
  - Volume (strength: strong [bounding], weak [thready])

STEP 4. Count pulsations

- Using a watch with a second hand, count the number of pulsations for 30 seconds and multiple by 2.

STEP 5. Count for 1 min if needed

- If the rate, rhythm, or strength is abnormal, count the pulse for 1 min.

Measure Respirations

LESSON PLAN

- Play the Measure Respirations video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Observe for one respiratory cycle

- Observe rise and fall of chest for a full respiratory cycle (one inspiration and one expiration).
- Do not allow the patient to know you are measuring respiration.
- Patients will unconsciously alter breathing patterns when being observed.

STEP 2. Count respirations

- Using a watch with a second hand, count respirations noting depth and rhythm.

STEP 3. Count for 30 seconds

- Count for 30 seconds and multiply by 2.

STEP 4. Count for 1 min if needed

- Count for 1 full min if breathing is irregular or an abnormal rate.
- A full minute will be more accurate when there are irregularities.

Concluding Steps

LESSON PLAN

- Play the Concluding Steps video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Document procedure in the patient's EHR

- Documentation should include date; time; pulse rate; rhythm and volume; and the respiratory rate, rhythm, and depth.

MEASURE BLOOD PRESSURE

Walkthrough: Skill Overview

LESSON PLAN

- Play full walkthrough video and discuss with students

OVERVIEW NOTES

1. Blood pressure measures the force of blood against the artery and includes two numbers, the systolic and diastolic.
   - Systolic: Measures the force of the blood against the walls of the arteries when the heart is contracting. This is the top number of a blood pressure.
   - Diastolic: Measures the force of the blood against the walls of the arteries when the heart is at rest. This is known as the bottom number of a blood pressure.
2. Hypertension, sometimes known silent killer, includes risk factors that can be changed and some that cannot be changed.
3. Blood pressure is measured in millimeters of mercury using a sphygmomanometer and stethoscope.
4. See table for blood pressure categories.

BLOOD PRESSURE CATEGORIES

Blood pressure category	Systolic (upper number)		Diastolic (lower number)
Normal	Less than 120 mm Hg	and	Less than 80 mm Hg
Elevated	120 to 129 mm Hg	and	Less than 80 mm Hg
High blood pressure (hypertension) stage 1	130 to 139	or	80 to 89 mm Hg
High blood pressure (hypertension) stage 2	140 mm Hg or higher	or	90 mm Hg or higher
Hypertensive crisis (consult your provider immediately)	Higher than 180 mm Hg	and/or	Higher than 120 mm Hg

Source: American Heart Association

Beginning Steps

LESSON PLAN

- Play the Beginning Steps video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Check the patient's EHR

- Note reason for visit and last blood pressure reading.

STEP 2. Assemble equipment and supplies

- Disinfect the earpieces of the stethoscope and diaphragm.

STEP 3. Greet the patient

- Identify yourself and state your title and name of provider you work with.

STEP 4. Verify patient identity

- Confirm two identifiers.

STEP 5. Perform hand hygiene

- Maintain highest level of cleanliness.
- Illustrate antiseptic practice.

STEP 6. Explain the procedure

- Explain the procedure and reason using terms understandable by the patient.
- Obtain consent to touch the patient.
- Provide opportunities for questions.

STEP 7. Position the patient

- Seat the patient in a comfortable position.
- Feet flat on floor, arm at heart level, palm up on a table or chair next to them, elbow should be slightly flexed at a 90-degree angle.
  - Muscle tension in an arm will artificially raise blood pressure.

STEP 8. Select arm and appropriate cuff size

- Specific medical conditions can contraindicate a cuff to a specific arm (mastectomy, paralysis, shunts).
- Incorrect sizing will lead to incorrect readings.
- There are several different sizes of cuffs to ensure accurate readings.
- A properly fitted cuff should cover 2/3 of the patient's upper arm
- Cuff bladder should encircle at least 80% of arm but no more than 100% of arm.

STEP 9. Locate and palpate brachial artery

- Use tips of first, middle, and ring fingers.
- The brachial artery is palpated in the antecubital space on the inside of the arm.
- If both sides can be used, use the one with the stronger pulse.

STEP 10. Apply bladder cuff

- Apply the center of the cuff with correct artery marking over the brachial artery.
- Keep lower edge of cuff at least 1 inch above bend of elbow.
- Place stethoscope over the brachial artery without touching cuff.

STEP 11. Wrap cuff around arm

- Wrap cuff smoothly and snugly around the arm and fasten.
- Position tubing away from patient.
- Place inflation bulb release valve close to your body.

STEP 12. Position yourself

- Have a clear view of sphygomomanometer (no more than 3 feet away).
- Verify that indicator needle is at zero.
  - If not properly calibrated, the reading will be inaccurate.

STEP 13. Insert stethoscope earpiece into ears

- Direct earpiece toward ear canal.

Measure Blood Pressure

LESSON PLAN

- Play the Measure Blood Pressure video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Place diaphragm over brachial artery

- Using dominant hand, place diaphragm over brachial artery without depressing artery.
- Place firm pressure on the edges of the stethoscope diaphragm to form a right seal.
  - This will reduce extraneous sounds.
  - Avoid excessive pressure which can depress the artery.

STEP 2. Tighten valve

- Using your dominant hand, tighten the pressure-release valve on the air pump and rapidly inflate the cuff 30 mm Hg above the patient's previous highest reading.
  - Tightening release valve allows for cuff inflation.
  - Using dominant hand allows for greater control of release valve.
  - Overinflation may cause unnecessary discomfort.
  - Underinflation may result in an inaccurate reading.

STEP 3. Release air

- Carefully open release valve using thumb and index finger and slowly release air about 2 to 3 mm Hg per second.

STEP 4. Identify first Korotkoff sound

- Identify the number of the gauge when the first tapping or Korotkoff sound appears.
- There are typically five Korotkoff phases.
  - Phase 1: First clear sound (Systolic number)
  - Phase 2: Strong heart beat changes to a softer swishing sound.
  - Phase 3: The crisp tapping or knocking sound resumes.
  - Phase 4: Sounds become more muffled.
  - Phase 5: The point at which the sound disappers (Diastolic number)

STEP 5. Continue until sounds disappears

- Continue to steadily release the air until sound disappears and is 10 mm Hg beyond.

STEP 6. Deflate and remove the cuff

- Deflate cuff completely by opening the valve.
- Remove cuff.
- Follow office policy regarding when to repeat blood pressure.
  - If first visit or the reading is elevated, measure on the opposite side or wait a minute and retake in same arm.
  - Many offices now require blood pressure to be taken in both arms every visit, especially specialty practices.
  - If the patient has a history of orthostatic hypotension or it is office policy:
    - Take blood pressure in supine position.
    - Take blood pressure in sitting position.
    - Take blood pressure while standing.
    - Take all three readings immediately after each other without removing the cuff.

STEP 7. Remove stethoscope

- Remove from ears and disinfect earpieces and diaphragm.
- Store cuff according to facility policy.

Concluding Steps

LESSON PLAN

- Play the Concluding Steps video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Share reading with the patient

- Unless there are circumstances and the patient is unable to receive information, share results.
- Patients have a right to know their medical information.

STEP 2. Perform hand hygiene

- Medical aseptic practices prevent spread of infection.

STEP 3. Document the procedure

- Communicate results in the patient's EHR.
- Include date, time, and blood pressure in fraction form.
- Include the location of the measurement (LA, RA, thigh) and the position of the patient.

MEASURE PULSE OXIMETRY

Walkthrough: Skill Overview

LESSON PLAN

- Play full walkthrough video and discuss with students

OVERVIEW NOTES

1. Pulse oximetry is a noninvasive method of evaluating pulse and oxygen saturation in the blood.
2. It is used to assess the patient's status in respiratory disorders.
3. It uses a beam of infrared light that passes through tissue and measures the oxygen of the hemoglobin in the blood.
4. Depending on the unit, the oximeter can be attached to different parts of the body.
    - 1st, 2nd, and 3rd fingers
    - The earlobe
    - Great toe
5. It has limitations that affect accuracy (circulation, skin tone, tobacco use, and cleanliness of testing areas).
6. Dark nail polish and artificial nails can interfere with readings.
7. Oxygen treatment is usually started for ranges lower than 90%.
8. A normal adult SpO2 reading is 95% or above.

Beginning Steps

LESSON PLAN

- Play the Beginning Steps video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Check the patient's EHR

- Check reason for visit and any orders.
- Review the last oxygen saturation reading to establish a baseline.

STEP 2. Assemble and disinfect equipment

- Inspect probe.
- Disinfect and ensure probe is functioning correctly.
- Dirt or fibers on probe could interfere with testing.

STEP 3. Greet the patient

- Identify yourself and state your title and name of provider you work with.

STEP 4. Verify patient identity

- Use two identifiers.

STEP 5. Perform hand hygiene

- Maintain the highest level of cleanliness.
- Illustrate antiseptic practice.

STEP 6. Explain the procedure

- Explain the procedure and reason using terms understandable by the patient.
- Obtain consent to touch the patient.
- Provide opportunities for questions.

STEP 7. Position the patient

- Seat the patient in a comfortable position with the lower arm supported on patient's lap or sturdy table and palm facing downward.

Measure Pulse Oximetry

LESSON PLAN

- Play the Measure Pulse Oximetry video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Select a site

- Ensure adequate circulation by checking temperature of the fingers.
- Common sites include earlobes, fingers, and big toe.
- Gently warming hands can improve perfusion.

STEP 2. Observe fingernail

- Dark or acrylic nail polish may not give accurate reading.
- Remove polish on nail or use an alternative site.

STEP 3. Cleanse the site

- Clean site and allow to air-dry.
- Allowing to air-dry helps to prevent fibers and dirt from sticking to probe.

STEP 4. Attach the sensor

- Ensure the fingertip is completely covering the LED window.
- This helps to minimize extraneous light from interfering with the reading.

STEP 5. Ask the patient not to move

- Ask the patient to hold still and not to move the probe.
- Breath normally.

STEP 6. Turn on the unit

- Turn on the unit.

STEP 7. 14. Wait for a reading

- Allow several seconds to detect pulse and calculate oxygen saturation.
- Reposition probe or change to a new site if unit pulse is weak, pulse strength indicator is barely fluctuating, or if you do not get a reading.

STEP 8. Leave probe in place

- Continue monitoring until the reading is steady.
- If saturation is below 90%, have the patient take a few deep breaths and recheck.
- Alert provider of less than 95%.

STEP 9. Remove the probe

- Remove and turn off equipment.

STEP 10. Perform hand hygiene

- Maintain highest level of cleanliness.
- Illustrate antiseptic practice.

Concluding Steps

LESSON PLAN

- Play the Concluding Steps video
- Practice Activities: Have students complete the practice activities with this section.

SKILL STEPS

STEP 1. Document the procedure

- Document results in the patient's EHR.

Summary

WRAP-UP: POSTPROCEDURE CONSIDERATIONS

POSTPROCEDURE NOTES

1. Body measurements and vital signs provide practitioners with important clues to the patient's overall health.
2. It is imperative these results are measured and documented accurately.
3. Any results not within normal limits should be shared immediately with the provider, especially when significantly outside normal parameters.

CASE STUDY INFORMATION

LESSON PLAN

- Refer to Vital Signs and Body Measurement Case Study Revisited

ASSESSMENT

LESSON PLAN

- Assign Interactive quiz
- (Optional) Assign quiz found in the FTK resources