fundamentals of nursing

clinical skills workbook

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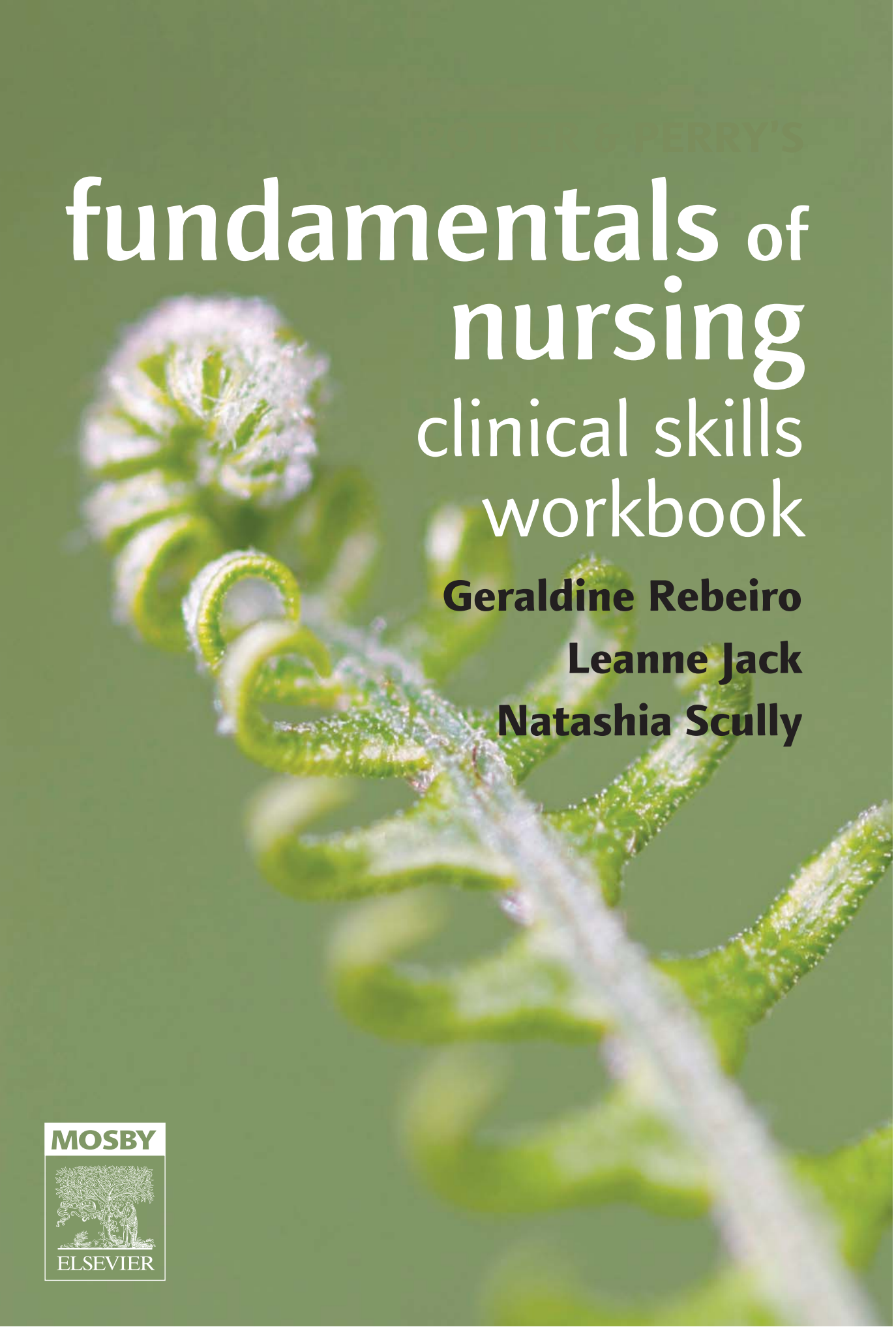

workbook

MOSBY

ELSEVIER

POTTER & PERRY'S

fundamentals of nursing

clinical skills workbook

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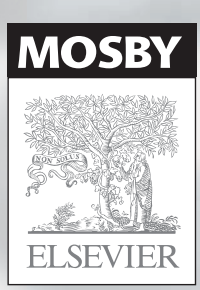

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Contents

Urinary Elimination

Bowel Elimination

Mobility and Immobility

Skin Integrity and Wound Care

Care of Surgical Patients

Vital Signs

OVERVIEW

Vital sign assessment and interpretation is integral in determining a patient's health status. Careful measurement techniques and knowledge of the normal range in vital signs will ensure more accurate findings and interpretation of those findings. The primary indication for assessing a patient's vital signs is to establish a baseline for comparison of alterations in health.

Accurate monitoring and consistency in the method used to collect a patient's vital signs is essential. Variations in the methods used to collect a patient's vital signs may result in false identification of alterations in health patterns.

General observation charts exist for recording vital signs. The nurse identifies the institution's procedure for documenting information. In addition to the actual vital sign values, the nurse records in the patient's case notes any accompanying or precipitating symptoms such as chest pain and dizziness with abnormal blood pressure, shortness of breath with abnormal respirations, cyanosis with hypoxaemia, or flushing and diaphoresis with elevated temperature. The nurse documents any interventions initiated as a result of vital sign measurement such as administration of oxygen therapy or an antihypertensive medication. The skills presented in this chapter relate to nursing care associated with measuring and recording the patient's vital signs.

This chapter will focus on specific psychomotor skills which focus on specific nursing care of the patient requiring measurement and recording of vital signs. The psychomotor skills addressed in this chapter include measuring body temperature (31-1), assessing the radial and apical pulse (31-2), assessing respirations (31-3), measuring oxygen saturations (31-4) and measuring blood pressure (31-5).

SKILL 31-1

MEASURING BODY TEMPERATURE

Delegation considerations

Temperature measurement can be delegated to nurse assistants.

- Inform caregiver of appropriate route and device to measure temperature.
- Observe caregiver performing proper positioning of patients for rectal temperature measurement.
- Inform caregiver of factors that can falsely raise or lower temperature.
- Inform caregiver of the frequency of temperature measurement.
- Determine that caregiver is aware of the usual values for patient.
- Inform caregiver of the need to report any abnormalities that should be reconfirmed by the nurse.

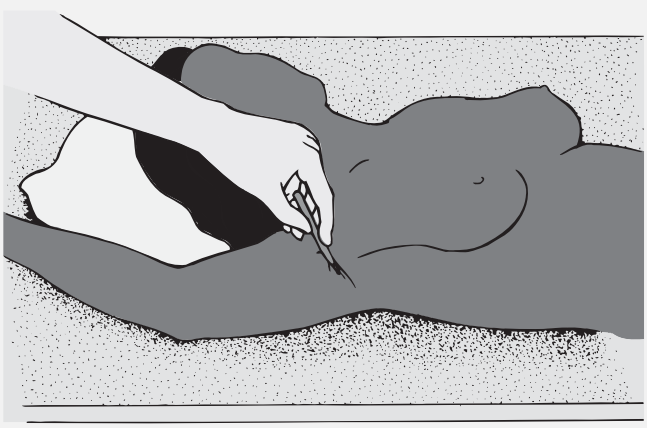
Equipment

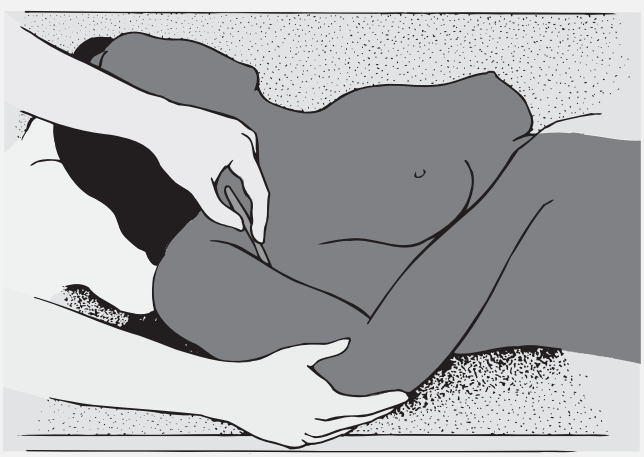
- Appropriate thermometer
- Soft tissue
- Pen, observation chart
- Disposable gloves, plastic thermometer sleeve or disposable probe cover

STEPS	RATIONALE
1. Assess for signs and symptoms of temperature alterations and for factors that influence body temperature.	Physical signs and symptoms may indicate abnormal temperature. Nurse can accurately assess nature of variations.
2. Determine any previous activity that would interfere with accuracy of temperature measurement. When taking oral temperature, wait 20–30 min before measuring temperature if patient has smoked or ingested hot or cold liquids or foods.	Smoking or oral intake of food or fluids can cause false temperature readings in oral cavity.
3. Determine appropriate temperature site and device for patient.	Chosen based on advantages and disadvantages of each site (see Box 31-6).
4. Explain way temperature will be taken and importance of maintaining proper position until reading is complete.	Patients are often curious about such measurements and should be cautioned against prematurely removing thermometer to read results.
5. Wash hands.	Reduces transmission of microorganisms.
6. Help patient assume comfortable position that provides easy access to temperature site.	Ensures comfort and accuracy of temperature reading.
7. Obtain temperature reading.	
A. Oral temperature measurement with electronic thermometer:	
(1) Put on disposable gloves (optional).	Use of oral probe cover, which can be removed without physical contact, minimises need to wear gloves.
(2) Remove thermometer pack from charging unit. Attach oral probe (blue tip) to thermometer unit. Grasp top of probe stem, being careful not to put pressure on the ejection button.	Charging provides battery power. Ejection button releases plastic probe cover from tip.
(3) Slide disposable plastic probe cover over thermometer probe until cover locks in place (see illustration).	Soft plastic cover will not break in patient's mouth and prevents transmission of microorganisms between patients.

STEP 7A(3)

STEPS	RATIONALE
(4) Ask patient to open mouth; then gently place thermometer probe under tongue in posterior sublingual pocket lateral to centre of lower jaw.	Heat from superficial blood vessels in sublingual pocket produces temperature reading. With electronic thermometer, temperatures in right and left posterior sublingual pocket are significantly higher than in area under front of tongue.
(5) Ask patient to hold thermometer probe with lips closed.	Maintains proper position of thermometer during recording.
(6) Leave thermometer probe in place until audible signal occurs and patient's temperature appears on digital display; remove thermometer probe from under patient's tongue.	Probe must stay in place until signal occurs to ensure accurate reading.
(7) Push ejection button on thermometer stem to discard plastic probe cover into appropriate receptacle.	Reduces transmission of microorganisms.
(8) Return probe to storage position of thermometer unit.	Protects probe from damage. Returning probe automatically causes digital reading to disappear.
(9) If gloves worn, remove and place in appropriate receptacle. Wash hands.	Reduces transmission of microorganisms.
(10) Return thermometer to charger.	Maintains battery charge.
B Axillary temperature measurement with electronic thermometer:	
(1) Wash hands.	
(2) Draw curtain around bed and/or close door.	
(3) Position patient lying supine or sitting.	Provides easy access to axilla.
(4) Move clothing or gown away from shoulder and arm.	Exposes axilla for correct thermometer probe placement.
(5) Remove thermometer pack from charging unit. Be sure oral probe (blue tip) is attached to thermometer unit. Grasp top of probe stem, being careful not to apply pressure on the ejection button.	Charging provides battery power. Ejection button releases plastic cover from probe.
(6) Slide disposable plastic probe cover over thermometer probe until cover locks in place.	Soft plastic cover prevents transmission of microorganisms between patients.
(7) Raise patient's arm away from torso, inspect for skin lesion and excessive perspiration. Insert probe into centre of axilla, lower arm over probe, and place arm across patient's chest (see illustration).	Maintains proper position of probe against blood vessels in axilla.
(8) Leave probe in place until audible signal occurs and temperature appears on digital display.	Probe must stay in place until signal occurs to ensure accurate reading.
(9) Remove probe from axilla.	
(10) Push ejection button on thermometer stem to discard plastic probe cover into appropriate receptacle.	Reduces transmission of microorganisms.
(11) Return probe to storage position of thermometer unit.	Protects probe from damage. Returning probe automatically causes digital reading to disappear.
(12) Help patient assume a comfortable position.	Restores comfort and promotes privacy.
(13) Wash hands.	Reduces transmission of microorganisms.
(14) Return thermometer unit to charger.	Maintains battery charge.





STEP 7B(7)

STEPS	RATIONALE
C. Tympanic membrane temperature with electronic thermometer:	
(1) Help patient assume comfortable position with head turned towards side, away from nurse. Right-handed people should obtain temperature from patient's right ear. Left-handed people should obtain temperature from patient's left ear. The less acute the angle of approach, the better the probe seal.	Ensures comfort and exposes auditory canal for accurate temperature measurement.
(2) Remove thermometer handheld unit from charging base, being careful not to apply pressure on the ejection button.	Base provides battery power. Removal of handheld unit from base prepares it to measure temperature. Ejection button releases plastic probe cover from tip.
(3) Slide clean disposable speculum cover over otoscope-like lens tip until it locks into place, being careful not to touch lens cover.	Lens cover must be unimpeded by dust, fingerprints or earwax to ensure clear optical pathway.
(4) Insert speculum into ear canal following manufacturer's instructions for tympanic probe positioning:	Correct positioning of the probe with respect to ear canal ensures accurate readings.
a. Pull ear pinna backwards, up and out for an adult.	The ear tug straightens the external auditory canal, allowing maximum exposure of the tympanic membrane.
b. Move thermometer in a figure 8 pattern. c. Fit probe snugly into canal and do not move. d. Point towards nose.	Some manufacturers recommend movement of the speculum tip in a figure 8 pattern that allows the sensor to detect maximum tympanic membrane heat radiation. Gentle pressure seals ear canal from ambient temperature, which can alter readings as much as 2.77°C (Braun et al, 1998).
(5) As soon as probe is in place depress scan button on handheld unit. Leave thermometer probe in place until audible signal occurs and patient's temperature appears on digital display.	Depression of scan button causes infra-red energy to be detected. Otoscope tip must stay in place until signal occurs to ensure accurate reading.
(6) Carefully remove speculum from auditory meatus.	
(7) Push ejection button on handheld unit to discard plastic probe cover into appropriate receptacle.	Reduces transmission of microorganisms. Automatically causes digital reading to disappear.
(8) If a second reading is necessary, replace probe lens cover and wait 2–3 min before inserting the probe tip.	Lens cover must be free of cerumen to maintain optical path. Time allows ear canal to regain usual temperature (Severine and McKenzie, 1997).
(9) Return handheld unit to charging base.	Protects sensory tip from damage.
(10) Help patient assume a comfortable position.	Restores comfort and sense of wellbeing.
(11) Wash hands.	Reduces transmission of microorganisms.
8. Discuss findings with patient as needed.	Promotes participation in care and understanding of health status.
9. If temperature is assessed for the first time, establish temperature as baseline if it is within normal range.	Used to compare future temperature measurements.
10. Compare temperature reading with patient's previous baseline and acceptable temperature range for patient's age group.	Normal body temperature fluctuates within narrow range; comparison reveals presence of abnormality. Improper placement or movement of thermometer can cause inaccuracies. Second measurement confirms initial findings of abnormal body temperature.

Recording and reporting

- Record temperature in observation chart. Measurement of temperature after administration of specific therapies should be documented in narrative form in nurses' notes.
- Report abnormal findings to nurse in charge or doctor.

Home care considerations

- Assess temperature and ventilation of patient's environment to determine existence of any environmental condition that may influence outcome of patient's temperature.

ASSESSMENT OF MEASURING BODY TEMPERATURE: ORAL, AXILLARY, TYMPANIC

SCALE
I Independent
S Supervised
A Assisted
M Marginal
D Dependent

STUDENT NAME: _____

CLINICAL SKILL 31-1: Measuring body temperature: oral, axillary, tympanic

DOMAIN/S: Professional Practice and Provision and Coordination of Care

DEMONSTRATES: The ability to effectively and safely measure the patient's body temperature

PERFORMANCE CRITERIA (numbers indicate ANMC National Competency Standards for the Registered Nurse, 2006) 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.5, 2.6, 3.2, 4.1, 4.2, 5.1, 5.2, 7.1, 7.2, 7.3, 9.1, 9.2, 9.5, 10.1, 10.2

COMPETENCY CRITERIA	PERFORMANCE CRITERIA/EVIDENCE	I	S	A	M	D
IDENTIFIES INDICATION/RATIONALE	– Confirms patient identity – Identifies appropriate timing for measuring body temperature – Identifies any contraindication to body temperature measurement					
ASSESSES PATIENT	– Inspects skin for lesions, wounds – Observe level of consciousness – Asks patient if they are able to close lips around oral thermometer – Assess timing of most recent beverage – Assesses patient knowledge of procedure					
PERFORMS HAND HYGIENE	– Performs social hand wash Adheres to '5 moments of hand hygiene' as outlined by Hand Hygiene Australia – Wears appropriate PPE					
GATHERS EQUIPMENT	– Observation chart – Thermometer; e.g. oral, axillary, tympanic and thermometer covers – Alco wipes, disinfectant – Wears non-sterile gloves if appropriate					
PREPARES EQUIPMENT	– Provides privacy – Inserts thermometer into protective cover					
THERAPEUTIC COMMUNICATION	– Clarifies patient knowledge and provides education where necessary – Explains actions at every stage – Assists patient to comfortable position					
PERFORMS CLINICAL PROCEDURE	– Oral temperature: places thermometer under patient's tongue, asks patient to close lips around thermometer to hold in situ – Axillary temperature: places thermometer under axilla, asks patient to lower arm and hold in situ until audible alarm heard, eject or remove plastic cover – Tympanic temperature: insert speculum (ear piece and cover) into ear canal, hold in situ until audible alarm is heard, eject ear piece cover					
CLEANS AND DISPOSES OF EQUIPMENT APPROPRIATELY	– Disposes of PPE – Performs hand hygiene – Cleans thermometer prior to returning to general storage					
COMPLETES DOCUMENTATION	– Documents observation and associated complications – Reports abnormal findings					

REFLECTION: _____

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DATE: _____

SKILL 31-2

ASSESSING THE RADIAL AND APICAL PULSES

Delegation considerations

Pulse measurement can be delegated to nurse assistants who are informed of:

- appropriate patient position when obtaining apical pulse measurement
- appropriate duration of radial and apical pulse count
- patient history or risk of irregular pulse
- frequency of pulse measurement
- the usual values for the patient
- the need to report any abnormalities.

Equipment

- Stethoscope (apical pulse only)
- Wristwatch with second hand or digital display
- Pen, observation chart
- Alcohol swab

STEPS	RATIONALE
1. Determine need to assess radial or apical pulse:	Certain conditions place patients at risk of pulse alterations.
a. Note risk factors for alterations in apical pulse.	Heart rhythm can be affected by heart disease, cardiac dysrhythmias, onset of sudden chest pain or acute pain from any site, invasive cardiovascular diagnostic tests, surgery, sudden infusion of large volume of IV fluid, internal or external haemorrhage, and administration of medications that alter heart function.
b. Assess for signs and symptoms of altered stroke volume and cardiac output such as dyspnoea, fatigue, chest pain, orthopnoea, syncope, palpitations (person's unpleasant awareness of heartbeat), jugular venous distension, oedema of dependent body parts, cyanosis or pallor of skin.	Physical signs and symptoms may indicate alteration in cardiac function.
2. Assess for factors that normally influence apical pulse rate and rhythm:	Allows nurse to accurately assess presence and significance of pulse alterations.
A. Age	Acceptable range of pulse rate changes with age (see Table 31-2).
B. Exercise	Physical activity requires an increase in cardiac output that is met by an increased heart rate and stroke volume.
C. Position changes	Heart rate increases temporarily when changing from lying to sitting or standing position.
D. Medications	Antidysrhythmics, sympathomimetics and cardiotonics affect rate and rhythm of pulse; narcotic analgesics and general anaesthetics slow heart rate; central nervous system stimulants such as caffeine increase heart rate.
E. Temperature	Fever or exposure to warm environments increases heart rate; heart rate declines with hypothermia.
F. Emotional stress, anxiety, fear	Results in stimulation of the sympathetic nervous system, which increases heart rate.
3. Determine previous baseline apical rate (if available) from patient's record.	Allows nurse to assess for change in condition. Provides comparison with future apical pulse measurements.
4. Explain that pulse or heart rate is to be assessed. Encourage patient to relax and not speak.	Activity and anxiety can elevate heart rate. Patient's voice interferes with nurse's ability to hear sound when apical pulse is measured.
5. Wash hands.	Reduces transmission of microorganisms.
6. If necessary, draw curtain around bed and/or close door.	Maintains privacy.

STEPS	RATIONALE
7. Obtain pulse measurement.	
A. Radial pulse	
(1) Help patient assume a supine or sitting position.	Provides easy access to pulse sites.
(2) If supine, place patient's forearm straight alongside or across lower chest or upper abdomen with wrist extended straight (see illustration). If sitting, bend patient's elbow 90 degrees and support lower arm on chair or on nurse's arm. Slightly flex the wrist with palm down.	Relaxed position of lower arm and extension of wrist permits full exposure of artery to palpation.
(3) Place tips of first two fingers of hand over groove along radial or thumb side of patient's inner wrist (see illustration).	Fingertips are the most sensitive parts of hand to palpate arterial pulsation. Nurse's thumb has pulsation that may interfere with accuracy.
(4) Lightly compress against radius, obliterate pulse initially, and then relax pressure so pulse becomes easily palpable.	Pulse is more accurately assessed with moderate pressure. Too much pressure occludes pulse and impairs blood flow.
(5) Determine strength of pulse. Note whether thrust of vessel against fingertips is bounding, strong, weak or thready.	Strength reflects volume of blood ejected against arterial wall with each heart contraction.
(6) After pulse can be felt, look at watch's second hand and begin to count rate; when second hand hits number on dial, start counting with zero, then one, two and so on.	Rate is determined accurately only after nurse is assured pulse can be palpated. Timing begins with zero. Count of one is first beat palpated after timing begins.
(7) If pulse is regular, count rate for 30 s and multiply total by 2.	A 30 s count is accurate for rapid, slow or regular pulse rates.
(8) If pulse is irregular, count rate for 60 s. Assess frequency and pattern of irregularity.	Inefficient contraction of heart fails to transmit pulse wave, interfering with cardiac output, resulting in irregular pulse. Longer time ensures accurate count.

Critical decision point: If pulse is irregular, assess for pulse deficit that may indicate alteration in cardiac output. Count apical pulse while colleague counts radial pulse. Begin apical pulse count out loud to simultaneously assess pulses. If pulse count differs by more than 2, a pulse deficit exists.

STEP 7A(2)

STEP 7A(3)

STEPS	RATIONALE
B. Apical pulse	
(1) Help patient into supine or sitting position. Move aside bedclothes and gown to expose sternum and left side of chest.	Exposes portion of chest wall for selection of auscultatory site.
(2) Locate anatomical landmarks to identify the point of maximal impulse (PMI), also called the apical impulse. Heart is located behind and to left of sternum with base at top and apex at bottom. Find angle of Louis just below suprasternal notch between sternal body and manubrium; can be felt as a bony prominence. Slip fingers down each side of angle to find second intercostal space (ICS). Carefully move fingers down left side of sternum to fifth ICS and laterally to the left midclavicular line (MCL). A light tap felt within an area 1–2 cm of the PMI is reflected from the apex of the heart.	Use of anatomical landmarks allows correct placement of stethoscope over apex of heart, enhancing ability to hear heart sounds clearly. If unable to palpate the PMI, reposition patient on left side. In the presence of serious heart disease, the PMI may be located to the left of the MCL or at the sixth ICS.
(3) Place diaphragm of stethoscope in palm of hand for 5–10 s.	Warming of metal or plastic diaphragm prevents patient from being startled and promotes comfort.
(4) Place diaphragm of stethoscope over PMI at the fifth ICS, at left MCL, and auscultate for normal S_1 and S_2 heart sounds (heard as 'lub-dub') (see illustration).	Allow stethoscope tubing to extend straight without kinks that would distort sound transmission. Normal sounds S_1 and S_2 are high-pitched and best heard with the diaphragm.
(5) When S_1 and S_2 are heard with regularity, use watch's second hand and begin to count rate: when second hand hits number on dial, start counting with zero, then one, two and so on.	Apical rate is determined accurately only after nurse is able to auscultate sounds clearly. Timing begins with zero. Count of one is first sound auscultated after timing begins.
(6) If apical rate is regular, count for 30 s and multiply by 2.	Regular apical rate can be assessed within 30 s.
(7) If heart rate is irregular or patient is receiving cardiovascular medication, count for 1 min (60 s).	Irregular rate is more accurately assessed when measured over longer interval.
(8) Note regularity of any dysrhythmia (S_1 and S_2 occurring early or later after previous sequence of sounds; for example, every third or every fourth beat is skipped).	Regular occurrence of dysrhythmia within 1 min may indicate inefficient contraction of heart and alteration in cardiac output.

STEP 7B(4)

STEPS	RATIONALE
(9) Replace patient's gown and bedclothes; help patient return to comfortable position.	Restores comfort and promotes sense of wellbeing.
(10) Clean earpieces and diaphragm of stethoscope with alcohol swab as needed (optional).	Controls transmission of microorganisms when nurses share stethoscope.
8. Discuss findings with patient as needed.	Promotes participation in care and understanding of health status.
9. Wash hands.	Reduces transmission of microorganisms.
10. Compare readings with previous baseline and/or acceptable range of heart rate for patient's age (see Table 31-2).	Checks for change in condition and alterations.
11. Compare peripheral pulse rate with apical rate and note discrepancy.	Differences between measurements indicate pulse deficit and may warn of cardiovascular compromise. Abnormalities may require therapy.
12. Compare radial pulse equality and note discrepancy.	Differences between radial arteries indicate compromised peripheral vascular system.
13. Correlate pulse rate with data obtained from blood pressure and related signs and symptoms (palpitations, dizziness).	Pulse rate and blood pressure are interrelated.

Recording and reporting

- Record pulse rate with assessment site in nurses' notes or observation chart. Measurement of pulse rate after administration of specific therapies should be documented in narrative form in nurses' notes.
- Report abnormal findings to nurse in charge or doctor.

Home care considerations

- Assess home environment to determine room that will afford quiet environment for auscultating apical rate.

ASSESSMENT OF ASSESSING THE RADIAL AND APICAL PULSES

SCALE
I Independent
S Supervised
A Assisted
M Marginal
D Dependent

STUDENT NAME: _____

CLINICAL SKILL 31-2: Assessing the radial and apical pulses

DOMAIN/S: Professional Practice and Provision and Coordination of Care

DEMONSTRATES: The ability to effectively and safely assess the radial and apical pulses

PERFORMANCE CRITERIA (numbers indicate ANMC National Competency Standards for the Registered Nurse, 2006) 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.5, 2.6, 3.2, 4.1, 4.2, 5.1, 5.2, 7.1, 7.2, 7.3, 9.1, 9.2, 9.5, 10.1, 10.2

COMPETENCY CRITERIA	PERFORMANCE CRITERIA/EVIDENCE	I	S	A	M	D
IDENTIFIES INDICATION/RATIONALE	– Confirms patient identity – Identifies appropriate timing for measuring pulses – Identifies any contraindication to measuring pulses					
ASSESSES PATIENT	– Inspects patient for signs of dyspnoea, fatigue, chest pain, range of motion – Inspect for recent medication, exercise, positioning, recent stress, fears, anxiety – Observe level of consciousness – Assesses patient knowledge of procedure					
PERFORMS HAND HYGIENE	– Performs social hand wash – Adheres to '5 moments of hand hygiene' as outlined by Hand Hygiene Australia – Wears appropriate PPE					
GATHERS EQUIPMENT	– Observation chart – Watch with second hand – Wears non-sterile gloves if appropriate					
PREPARES EQUIPMENT	– Inserts thermometer into protective cover					
THERAPEUTIC COMMUNICATION	– Clarifies patient knowledge and provides education where necessary – Explains actions at every stage – Assists patient to comfortable position					
PERFORMS CLINICAL PROCEDURE	– Provides privacy – Assist patient to a sitting or supine position – Encourages patient to relax and not to speak during procedure – *Radial pulse*: rest patient's arm across torso, place tips of first two fingers over groove along radial or thumb side of patient's inner wrist, lightly compress against radius to obliterate pulse then slightly release pressure to palpate pulse – *Apical pulse*: place diaphragm of stethoscope over point of maximal impulse, count the number of beats when S_1 and S_2 are frequently audible – If pulse is regular, count for 30 seconds and multiply by 2 – If pulse is irregular, count rate for 60 seconds and assess frequency and pattern of irregularity					
CLEANS AND DISPOSES OF EQUIPMENT APPROPRIATELY	– Disposes of PPE – Performs hand hygiene – Clean ear pieces of the stethoscope					
COMPLETES DOCUMENTATION	– Documents observation and associated assessment/ complications – Reports abnormal findings to senior nurse and/or treating doctor					

REFLECTION: _____

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DATE: _____

ASSESSING RESPIRATIONS

Delegation considerations

Respiration measurement can be delegated to nurse assistants who are informed of:

- appropriate patient position when obtaining respirations
- appropriate duration of respiratory rate count
- patient history or risk of increased or decreased respiratory rate or irregular respirations
- frequency of respirations measurement
- the usual values for the patient
- need to report any abnormalities.

Equipment

- Wristwatch with second hand or digital display
- Pen, observation chart

STEPS	RATIONALE
1. Determine need to assess patient's respirations:	
A. Note risk factors for respiratory alterations.	Certain conditions place patient at risk of alterations in ventilation detected by changes in respiratory rate, depth and rhythm. Fever, pain, anxiety, diseases of chest wall or muscles, constrictive chest or abdominal dressings, gastric distension, chronic pulmonary disease (emphysema, bronchitis, asthma), traumatic injury to chest wall with or without collapse of underlying lung tissue, presence of a chest tube, respiratory infection (pneumonia, acute bronchitis), pulmonary oedema and emboli, head injury with damage to brain stem, and anaemia can result in respiratory alteration.
B. Assess for signs and symptoms of respiratory alterations such as bluish or cyanotic appearance of nail beds, lips, mucous membranes and skin; restlessness, irritability, confusion, reduced level of consciousness; pain during inspiration; laboured or difficult breathing; adventitious breath sounds (see Chapter 32), inability to breathe spontaneously; thick, frothy, blood-tinged or copious sputum produced on coughing.	Physical signs and symptoms may indicate alterations in respiratory status related to ventilation.
2. Assess pertinent laboratory values:	
A. Arterial blood gases (ABGs): Normal ABGs (values may vary slightly within institutions): pH 7.35–7.45 $PaCO_2$ 36–44 mmHg PaO_2 80–100 mmHg SaO_2 94%–98%	Arterial blood gases measure arterial blood pH, partial pressure of oxygen and carbon dioxide, and arterial oxygen saturation, which reflects patient's oxygenation status.
B. Pulse oximetry (SpO_2): Acceptable SpO_2 90%–100%; 85%–89% may be acceptable for certain chronic disease conditions (see Skill 31-4).	SpO_2 less than 85% is often accompanied by changes in respiratory rate, depth and rhythm.
C. Full blood count (FBC): Normal FBC for adults (values may vary within institutions): **(1)** Haemoglobin: 130–180 g/L, males; 115–165 g/L, females. **(2)** Haematocrit: 0.42–0.52, males; 0.35–0.47, females. **(3)** Red cells: $4.50–6.50 \times 10^{12}$/L, males; $3.90–5.60 \times 10^{12}$/L, females.	Full blood count measures red blood cell count, volume of red blood cells, and concentration of haemoglobin, which reflects patient's capacity to carry oxygen and therefore influences interpretation of the results.
3. Determine previous baseline respiratory rate (if available) from patient's record.	Allows nurse to assess for change in condition. Provides comparison with future respiratory measurements.

STEPS	RATIONALE
4. Be sure patient is in comfortable position, preferably sitting or lying with the head of the bed elevated 45–60 degrees.	Sitting erect promotes full ventilatory movement.

Critical decision point: Patients with difficulty breathing (dyspnoea) such as those with congestive heart failure or abdominal ascites or in late stages of pregnancy should be assessed in the position of greatest comfort. Repositioning may increase the work of breathing, which will increase respiratory rate.

5. Draw curtain around bed and/or close door. Wash hands.	Maintains privacy. Prevents transmission of microorganisms.
6. Be sure patient's chest is visible. If necessary, move bedclothes or gown.	Ensures clear view of chest wall and abdominal movements.
7. Place patient's arm in relaxed position across the abdomen or lower chest, or place nurse's hand directly over patient's upper abdomen (see illustration).	A similar position used during pulse assessment allows respiratory rate assessment to be inconspicuous. Patient's or nurse's hand rises and falls during respiratory cycle.
8. Observe complete respiratory cycle (one inspiration and one expiration).	Rate is accurately determined only after nurse has viewed respiratory cycle.
9. After cycle is observed, look at watch's second hand and begin to count rate: when second hand hits number on dial, begin timeframe, counting one with first full respiratory cycle.	Timing begins with count of one. Respirations occur more slowly than pulse; thus timing does not begin with zero.
10. If rhythm is regular, count number of respirations in 30 s and multiply by 2. If rhythm is irregular, less than 12, or greater than 20, count for 1 full min.	Respiratory rate is equivalent to number of respirations per minute. Suspected irregularities require assessment for at least 1 min.

Critical decision point: Respiratory rate less than 12 or greater than 20 requires further assessment (see Chapter 32) and may require immediate intervention.

11. Note depth of respirations, subjectively assessed by observing degree of chest wall movement while counting rate. Nurse can also objectively assess depth by palpating chest wall excursion or auscultating the posterior thorax after rate has been counted (see Chapter 32). Depth is described as shallow, normal or deep.	Character of ventilatory movement may reveal specific disease state restricting volume of air from moving into and out of the lungs.
12. Note rhythm of ventilatory cycle. Normal breathing is regular and uninterrupted. Sighing should not be confused with abnormal rhythm.	Character of ventilations can reveal specific types of alterations.

STEP 7

STEPS	RATIONALE

Critical decision point: Occasional periods of apnoea, the cessation of respiration for several seconds, are a symptom of underlying disease in the adult and must be reported to the doctor or nurse in charge. An irregular respiratory rate and short apnoeic spells are usual in a newborn.

13. Replace bedclothes and patient's gown.	Restores comfort and promotes sense of wellbeing.
14. Wash hands.	Reduces transmission of microorganisms.
15. Discuss findings with patient as needed.	Promotes participation in care and understanding of health status.
16. If respirations are assessed for the first time, establish rate, rhythm and depth as baseline if within normal range.	Used to compare future respiratory assessment.
17. Compare respirations with patient's previous baseline and normal rate, rhythm and depth.	Allows nurse to assess for changes in patient's condition and for presence of respiratory alterations.

Recording and reporting

- Record respiratory rate and character in nurses' notes and observation chart. Indicate type and amount of oxygen therapy if used by patient during assessment. Measurement of respiratory rate after administration of specific therapies should be documented in narrative form in nurses' notes.
- Report abnormal findings to nurse in charge or doctor.

Home care considerations

- Assess for environmental factors in the home that may influence patient's respiratory rate such as second-hand smoke, poor ventilation or gas fumes.

ASSESSMENT OF ASSESSING RESPIRATIONS

SCALE
I Independent
S Supervised
A Assisted
M Marginal
D Dependent

STUDENT NAME: _____

CLINICAL SKILL 31-3: Assessing respirations

DOMAIN/S: Professional Practice and Provision and Coordination of Care

DEMONSTRATES: The ability to effectively and safely assess respirations

PERFORMANCE CRITERIA (numbers indicate ANMC National Competency Standards for the Registered Nurse, 2006) 1.1, 1.2, 1.3, 2.1, 2.2, 2.3, 2.5, 2.6, 3.2, 4.1, 4.2, 5.1, 5.2, 7.1, 7.2, 7.3, 9.1, 9.2, 9.5, 10.1, 10.2

COMPETENCY CRITERIA	PERFORMANCE CRITERIA/EVIDENCE	I	S	A	M	D
IDENTIFIES INDICATION/RATIONALE	– Confirms patient identity – Identifies appropriate timing for measuring pulses – Identifies any contraindication to measuring respirations					
ASSESSES PATIENT	– Inspects patient for signs of dyspnoea, fatigue, chest pain – Review laboratory values including SaO_2, arterial blood gases, full blood count – Review previous documentation; e.g. observation chart, medical record – Observe level of consciousness – Assesses patient knowledge of procedure					
PERFORMS HAND HYGIENE	– Performs social hand wash Adheres to '5 moments of hand hygiene' as outlined by Hand Hygiene Australia – Wears appropriate PPE					
GATHERS EQUIPMENT	– Observation chart – Watch with second hand – Wears non-sterile gloves if appropriate					
PREPARES EQUIPMENT	– Draws curtains for privacy					
THERAPEUTIC COMMUNICATION	– Clarifies patient knowledge and provides education where necessary – Explains actions at every stage – Assists patient to comfortable position; e.g. head of bed elevated to 45–90˚ if not contraindicated					
PERFORMS CLINICAL PROCEDURE	– Provides privacy – Encourages patient to relax and not to speak during procedure – Place patients arm across abdomen or lower chest or place nurses hand over abdomen – Count respiratory cycle (inspiration and expiration) – If respiration is regular, count for 30 seconds and multiply by 2 – If respiration is irregular, count rate for 60 seconds and assess frequency and pattern of irregularity – Observe depth, regularity, quality of respirations and chest wall expansion – Replace bed clothes/linen that may have been removed for the procedure – Assist patient to a comfortable position					
CLEANS AND DISPOSES OF EQUIPMENT APPROPRIATELY	– Disposes of PPE – Washes hands					
COMPLETES DOCUMENTATION	– Documents observation and associated assessment/ complications – Reports abnormal findings					

REFLECTION: _____

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DATE: _____