PURPOSE:
To ensure the safe and appropriate use of anti-embolic stockings.

CONSIDERATIONS:
1. The use of elastic anti-embolism stockings helps to prevent Deep Vein Thrombosis (DVT) and pulmonary embolism by compressing the patient's superficial leg veins. This compression increases venous return by forcing blood into the deep venous system rather than allowing it to pool in the legs and form clots.
2. Elastic anti-embolism stockings provide equal pressure over the patient's entire leg or a graded pressure that is greatest at the ankle and decreases over the length of the leg.
3. The order of a physician is required for the use of antiembolism stockings and frequent observation by the nurse is recommended.
4. Anti-embolism stockings are not used with:
   a. The presence of any local leg condition such as dermatitis, recent vein ligation, skin graft or gangrene.
   b. Severe arteriosclerosis, other ischemic vascular disease or vascular grafts.
   c. Massive edema of legs or pulmonary edema from congestive heart failure.
   d. Extreme deformity of leg.
5. Appropriate anti-embolism stocking size is selected prior to discharge from hospital or physician office according to measurements of calf circumference and leg length from heel to back of knee.
6. Apply the stockings in the morning, if possible, before edema develops. If the patient has been ambulating, ask him to lie down and elevate his legs for 15 to 30 minutes before applying the stockings to facilitate venous return.
7. Stockings should be laundered every 3 days. Launder as per manufacturer's instructions. Patient should have alternate pair to wear while other is being laundered.
8. Use scale to evaluate edema. (See Circulatory - Measuring Peripheral Edema.)
9. Replace stockings when they lose elasticity.
10. Use alternative pressure device for patients with vascular disease.

EQUIPMENT:
Anti-embolism stocking

PROCEDURE:
1. Adhere to Standard Precautions.
2. Explain procedure to patient.
3. Powders and lotions are not recommended by some manufacturers (check the package for manufacturer specifications).
4. Put one hand and arm inside and use your other hand to invert the upper part of stocking back over its lower part. Loosely gather the doubled stocking in your hand and position stocking over foot and heel. Center patient's heel in heel pocket.
5. Pull stockings up, fitting around ankle and calf, and working up. Top of stocking should be 1 inch below bottom of knee. Some physicians order mid-thigh anti-embolism stockings. DO NOT turn down top of stocking. Be certain that all wrinkles have been removed. Stockings should not be bunched at top.
6. Place skid-resistant socks or slippers on before patient attempts to ambulate.

AFTER CARE:
1. Instruct patient/caregiver:
   a. Remove the stockings at least once daily to bathe the skin and observe for irritation and breakdown.
   b. Observe skin for color, temperature, sensation, swelling and ability to move.
   c. If redness is present, instruct patient to leave stockings off for 1 to 2 hours until redness disappears.
   d. Cleansing feet and legs and applying lotion is important to prevent skin breakdown.
   e. Rubbing and massaging of legs should be avoided.
2. Document in patient's record:
   a. Condition of skin.
   b. Compliance of use of stockings.
   c. Comfort of stockings.

COMPLICATIONS:
1. Arterial blood flow obstruction (characterized by cold and bluish toes, dusky toenail beds, decreased or absent pedal pulses and leg pain or cramps).
2. Allergic reaction and skin irritation.
3. Rolled stocking edges can cause excessive pressure and interfere with circulation.

REFERENCES:
PURPOSE:
To measure the systolic and diastolic blood pressure.

CONSIDERATIONS:
1. Blood pressure is an index of:
   a. Elasticity of the arterial walls.
   b. Peripheral vascular resistance.
   c. Efficiency of the heart as a pump.
   d. Blood volume.
   e. Blood viscosity.
2. The systolic pressure (the upper reading) measures the maximum pressure against the arteries by the left ventricular systole and is a clue to the integrity of the heart, arteries and the arterioles.
3. The diastolic pressure (the lower reading) measures the force exerted during ventricular relaxation and filling and indicates blood vessel resistance.
4. Blood pressure values for adults aged 18 years or greater:

<table>
<thead>
<tr>
<th>Category</th>
<th>Systolic</th>
<th>Diastolic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt; 120 mm Hg</td>
<td>&lt; 80 mm Hg</td>
</tr>
<tr>
<td>Pre-Hypertension</td>
<td>120 – 139 mm Hg</td>
<td>80 – 89 mm Hg</td>
</tr>
<tr>
<td>Hypertension Stage 1</td>
<td>140 - 159 mm Hg</td>
<td>90 - 99 mm Hg</td>
</tr>
<tr>
<td>Hypertension Stage 2</td>
<td>&gt; 160 mm Hg</td>
<td>&gt; 100 mm Hg</td>
</tr>
<tr>
<td>Hypertensive Crisis</td>
<td>&gt; 180 mm Hg</td>
<td>&gt; 110 mm Hg</td>
</tr>
<tr>
<td>Hypotension</td>
<td>&lt; 95 mm Hg</td>
<td></td>
</tr>
<tr>
<td>Orthostatic Hypotension</td>
<td>decrease in systolic pressure &gt; 20 mm Hg and the diastolic pressure &gt; 10 mm Hg with posture changes</td>
<td></td>
</tr>
</tbody>
</table>

5. Hypertension is defined as systolic pressure equal to, greater than 140 mm Hg, diastolic pressure equal to, or greater than 90 mm Hg.
6. Hypotension is a persistent systolic reading below 95 mm Hg.
7. Orthostatic hypotension is a change of > 20mm Hg in blood pressure reading with posture changes.
8. Blood pressure is usually lowest in the early morning after sleep.
9. Blood pressure rises after meals, during exercise, with emotional upsets and/or disease processes.
10. Blood pressure is normally slightly lower when lying down than sitting or standing. In postural hypotension, pressure decreases when position is from lying to sitting or standing.
11. Blood pressure is slightly higher when monitored in the lower extremities.
12. Because pressure differences of more than 10 mm Hg exist between the arms of 6% of hypertensive patients, blood pressure should be measured in both arms at the initial assessment and in the arm with the higher pressure for future blood pressure measurements.
13. Ideally, the width of the cuff should be 40% of the circumference or 20% wider than the diameter of the midpoint of the limb. The bladder should encircle at least 80% of the adult upper arm.
14. The cuff should be wide enough to reach from just below the armpit to the inside of the elbow. The cuff size is based on the distance from the shoulder to the elbow. If the distance is less than 13 inches the cuff size is 5 by 9 inches (small), 13 to 16 inches the cuff size is 6 by 13 inches (medium) and greater than 16 inches the cuff size is 7 by 14 inches.
15. A falsely high reading may result when a cuff is too narrow or short. A falsely low reading may result when a cuff is too wide or long.
16. In some patients, an auscultatory gap may be present. During the auscultatory gap the sounds disappear, reappearing 10 – 15 mm Hg later. This auscultatory gap has no clinical significance, but if the cuff is not inflated to a point above the auscultatory gap, a falsely low systolic reading may occur.
17. Avoid taking blood pressure in the arm on the affected side of a mastectomy, an arteriovenous fistula, hemodialysis shunt or IV.
18. If the blood pressure cannot be auscultated. (See Circulator - Blood Pressure – Palpation.)
19. Placement of brachial artery below heart level may result in blood pressure being falsely high, and conversely if the artery is above the heart level the blood pressure may be falsely low.

EQUIPMENT:
Sphygmomanometer
Stethoscope

PROCEDURE:
1. Adhere to Standard Precautions.
2. Explain procedure to patient.
3. Choose an appropriate-sized cuff for the patient; the bladder should encircle at least 80% of the upper arm.
4. Keep patient in a stable, relaxed position for 5 to 10 minutes. Make sure that he has not had caffeine or smoked for at least 30 minutes.
5. The patient may lie supine or sit erect during blood pressure measurement. If the patient is sitting erect, make sure that he has both feet flat on the floor because crossing the legs may elevate blood pressure.
6. Place arm at heart level and keep well supported. If the artery is below heart level, you may get a false-high reading.
7. Expel any air from cuff.
8. Place center of cuff over the brachial artery and wrap cuff evenly. The lower border of the cuff should be about 2.5 cm above the antecubital crease.
9. Apply the cuff snugly. A falsely high reading can result if the cuff is too loose.
10. Avoid constriction of the arm by a rolled sleeve above the cuff.
11. Palpate radial artery. Palpating the radial pulse while inflating the cuff helps prevent the underestimation of the blood pressure if an auscultatory gap is present.
12. Inflate cuff as rapidly as possible until pulse is gone, and then inflate an extra 20-30 mm Hg.
13. Place diaphragm of stethoscope over the brachial artery, listen carefully and release cuff at even rate, no faster than 2-3 mm Hg per second. The systolic pressure is the reading at the first return of the pulse sound.
14. The diastolic pressure is the reading at which sounds stop (if there is a "muffling" or damping of the sound prior to loss of sound, record both readings). After you hear the last sound, deflate the cuff slowly for at least another 10 mm Hg to ensure that no further sounds are audible.
15. Occasionally, blood pressure must be measured in both arms or with the patient in two different positions (such as lying and standing or sitting and standing). In such cases, observe and record significant differences between the two readings.
16. Deflate and remove cuff.

AFTER CARE:
1. Document in patient's record:
   a. Blood pressure reading.
   b. Position.
   c. Site.
2. Report changes in blood pressure to the physician if not within physician designated range.

COMPLICATIONS:
Impaired circulation can affect blood pressure and cause an inaccurate reading. Therefore, DO NOT measure blood pressure on a patient's affected arm if the:
1. Shoulder, arm or hand is injured or diseased.
2. Arm has a cast or bulky bandage.
3. Patient has had a mastectomy or removal of lymph nodes on that side because it may decrease already compromised lymphatic circulation, worsen edema, and damage the arm.
4. Patient has an arteriovenous fistula or hemodialysis shunt because blood flow through the vascular device may be compromised.

REFERENCES:
Circulatory – Blood Pressure: Lower Extremities

Strength of Evidence Level: 3

PURPOSE:
To measure systolic and diastolic pressure in lower extremities.

CONSIDERATIONS:
1. This procedure is used to determine the patient's blood pressure if the patient's arms cannot be used. It is also used to rule out coarctation of the aorta, when suspected, due to decreased or absent femoral pulse.
2. Usually the systolic pressure in the lower extremities is 10-40 mm Hg higher than in the upper extremities.
3. Use appropriate size cuff applied at the mid thigh. The bladder of the cuff should be about 40% of the circumference of the thigh and the length should be about 75% to 80% of his circumference.

EQUIPMENT:
Size appropriate Sphygmomanometer
Stethoscope

PROCEDURE:
1. Adhere to Standard Precautions.
2. Perform hand hygiene.
3. Explain procedure to patient.
4. Place patient in a prone position. If the patient is unable to lie on abdomen, while supine have patient slightly flex the leg so the popliteal pulse can be palpated.
5. Place cuff on thigh.
6. Place stethoscope over the popliteal pulse.
7. Inflate cuff until pulse is not audible and then inflate an extra 20-30 mm Hg.
8. Deflate cuff at rate of 2 mm Hg. The systolic pressure is the reading at the first return of the pulse sound.
9. The diastolic pressure is the reading at which the pulse sounds stops.
10. Deflate and remove cuff.

AFTER CARE:
1. Document in patient's record:
   a. Blood pressure reading.
   b. Position.
   c. Extremity used.
2. Report clinically significant changes in blood pressure to physician.
PURPOSE:
To measure systolic blood pressure.

CONSIDERATIONS:
1. Blood pressure palpation is used when auscultation is not possible.
2. Blood pressure obtained from palpation is not as accurate as by auscultation.
3. The systolic pressure obtained by palpation is 5-10 mm Hg lower than obtained by auscultation.

EQUIPMENT:
Appropriate size Sphygmomanometer

PROCEDURE:
1. Adhere to Standard Precautions.
2. Perform hand hygiene.
3. Explain procedure to patient.
4. Place arm at heart level.
5. Place center of cuff over the brachial artery and wrap cuff evenly.
6. Palpate brachial artery.
7. Inflate cuff rapidly until pulse is not palpable, then pump an extra 20-30 mm Hg beyond that.
8. Deflate cuff slowly feeling for the return of a palpable brachial pulse.
9. The reading at which the pulse is palpated is the systolic pressure.
10. There is no diastolic reading with palpable readings.
11. The diastolic pressure is recorded as “P” for palpation; i.e. 120/P.
12. Deflate and remove cuff.

AFTER CARE:
1. Document in patient's record:
   a. Blood pressure reading.
   b. Position.
   c. Site.
2. Report any significant changes in blood pressure to the physician.
PURPOSE:
To measure the function of the cardiovascular systems in supine, sitting and erect positions.

CONSIDERATIONS:
1. Blood pressure and pulse should be measured in both arms, when evaluating the patient initially. Subsequent readings should be made on the arm with the higher reading.
2. A change from supine to erect position will cause a slight decrease in both systolic and diastolic pressure usually accompanied by a slight rise in pulse rate.
3. In postural or orthostatic hypotension, a change from supine to erect position will result in a rapid decrease in systolic pressure greater than 20 mm Hg and the diastolic pressure greater than 10 mm Hg.
4. Common causes of orthostatic hypotension include dehydration, medications, heart problems, diabetes, and nervous system disorders.
5. Orthostatic hypotension can cause dizziness, light-headedness, blurry vision, nausea, and fainting, which may cause the patient to fall.

EQUIPMENT:
Sphygmomanometer
Stethoscope

PROCEDURE:
1. Adhere to Standard Precautions.
2. Perform hand hygiene.
3. Explain procedure to patient.
4. Measure the blood pressure of upper extremities and obtain pulse when patient is supine. Leave cuff on extremity.
5. Instruct patient to sit up and wait 1-2 minutes. Then measure blood pressure and pulse.
6. Instruct patient to stand, wait 1-2 minutes and then measure blood pressure and pulse.
7. If appropriate, use the assistance of a second person when blood pressure is measured in the standing position to prevent injury.
8. Deflate and remove cuff when procedure is completed.

AFTER CARE:
1. Document in patient's record:
   a. Blood pressure and pulse in each position.
   b. Any signs and symptoms of postural hypotension.
   c. Extremity and position of each measurement.
2. Report to physician significant changes in blood pressure or if patient is symptomatic.
PURPOSE:
The transmitter detects, amplifies, and converts a patient’s electrical cardiac activity and pacemaker artifacts to frequency-modulated audio tones for transmission via the telephone to an electrocardiogram (EKG) receiver. From the transmitted signals, the EKG receiver provides an EKG strip recording and print out of the rate and pulse width(s) of a patient’s implanted pacemaker.

CONSIDERATIONS:
1. Implantable transtelephonic pacemaker monitoring should be done at the intervals that the physician prescribes.
2. The nurse may transport the transmitter equipment to the patient’s home or it may be given to the patient by the physician’s office.
3. Communication between the nurse and the physician’s office is indicated to assure an adequate EKG strip is obtained.
4. Never perform a magnet test before receiving instructions from the technician.
5. To enhance transmission quality:
   a. Make sure all nearby appliances are turned off.
   b. Make sure the patient does not touch anything metal during the test.
   c. The wires attached to the right and left bracelets should not be tangled.
   d. The patient must remain in a quiet and still position while transmitting.
6. Transmitter functions:
   a. On/Off switch - used to turn the transmitter on and off.
   b. Patient Signal Light:
      (1) Will flash On/Off when the transmitter is turned on.
      (2) Will flash and the transmitter will beep after the transmission is completed.
      (3) This light will also flash if there is a problem with the transmission, indicating that you should speak with the technician to receive further instructions.
   c. Electrode Plug - Snap securely into the transmitter outlet.
7. Changing the transmitter battery:
   a. Turn the On/Off switch to the Off position.
   b. Remove the cover of the battery compartment by pushing upward on the grooved ridge of the cover.
   c. Properly dispose the old alkaline battery by placing in plastic resealable bag.
   d. Place the new battery (9 volt alkaline) in the battery compartment by matching the shapes of the battery terminals to the markings on the top edge of the transmitter.
   e. Make sure the edge of the battery cover labeled TOP is pointing up, then slide the cover back in its groove. Push downward on the grooved ridge of the cover until it clicks shut.

EQUIPMENT:
Transtelephonic EKG Transmitter

PROCEDURE:
1. Adhere to Standard Precautions.
2. Explain procedure to patient.
3. Preparation before making a transmission:
   a. Moisten the forearms of both the patient's right and left arms with water.
   b. With the palms of the right and left hands up, slide the bracelet labeled right up the right arm until snug then slide the bracelet labeled left up the left arm until snug, approximately 3 inches below the elbow.
   c. Moisten the patient's right forearm with water.
   d. Slide the bracelet labeled right up the right arm until snug, approximately 3 inches below the elbow.
   e. Moisten the instep of the patient's left bare foot.
   f. Slide the bracelet labeled left up the left bare foot with the plate on the top of the instep.
   [Note: The technician will identify which procedure to follow if transmitting for the first time.]
4. Sending a non-magnet test:
   a. Turn on the transmitter. The transmitter will emit a series of tones indicating that it is ready to use. If no tones are audible when the transmitter is turned on, replace the battery.
   b. Place a telephone call to the number indicated with the equipment. When instructed by the technician, place mouthpiece of the telephone on the speaker part of the machine.
   c. Wait approximately 30 seconds or until the patient alert light comes on when making non-magnet and magnet tests.
   d. Always turn the unit off when not in use.
5. Sending a magnet test:
   a. Place the mouthpiece of the telephone on the speaker-part of the machine and count to 10.
   b. Place the blue magnet over the pacemaker on the bare skin and count to 30.
   c. Remove magnet.
   d. Pick up the telephone and speak to the technician.
6. Repeat the non-magnet test.

AFTER CARE:
1. Cleaning the transmitter:
   a. Clean with a cloth dampened with a mild soap.
   b. After each use, dry wrist electrodes with a towel or soft tissue.
   [Note: Do not submerge the transmitter in water or any other liquid.]
2. Document in the patient’s record:
   a. Completion of transtelephonic pacer monitoring.
   b. The name of the physician who obtained the EKG.
   c. Order for next pacer monitoring.
   d. Vital signs from this visit.
   e. Instructions to patient/caregiver.
   f. Patient’s response to procedure.
   h. Communication with physician.

REFERENCES:
PURPOSE:
To provide a consistent method for measuring and documenting peripheral edema.

CONSIDERATIONS:
1. Two methods of measuring peripheral edema are found in the literature: Digital pressure for soft, pitting edema; measurement of the extremity for edema that is nonpitting.
2. Digital pressure uses the depth of depression that is obtained by applying thumb or forefinger pressure for at least 5 seconds against a bony prominence.
3. Measurement involves measuring the circumference of the extremity at specific sites. The sites are inches from bony landmarks. The site for measuring the instep is 5 inches from the end of big toe; for the ankle, it is 4 inches from heel; for calf, it is 11 inches from heel.

EQUIPMENT:
Measuring tape in centimeters or inches

PROCEDURE:
1. Adhere to Standard Precautions.
2. Explain procedure to patient.
3. Choose method of measuring peripheral edema.
   a. Digital Pressure Method
      (1) Press thumb or index finger behind each anklebone, over top mid-portion of each foot, and over shins for at least 5 seconds.
      (2) If a pit of depression develops, compare to the following chart and record:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Physical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+</td>
<td>Slight pitting, no visible change in the shape of the extremity; depth of indentation 0-1/4&quot; (&lt;6 mm); disappears rapidly</td>
</tr>
<tr>
<td>2+</td>
<td>No marked change in the shape of the extremity; depth of indentation 1/4 -1/2&quot; (6-12 mm); disappears in 10 to 15 seconds</td>
</tr>
<tr>
<td>3+</td>
<td>Noticeably deep pitting, swollen extremity; depth of pitting1/2-1&quot; (1-2.5 cm); duration 1 to 2 minutes</td>
</tr>
<tr>
<td>4+</td>
<td>Very swollen, distorted extremity; depth of pitting &gt; 1&quot; (&gt;2.5 cm); duration 2 to 5 minutes</td>
</tr>
</tbody>
</table>
   b. Measurement Method
      (1) Nurse will determine which site to be used for measuring. The measurement points should be marked on the skin of both extremities at the time of first measurement.
      (2) Identify the appropriate landmark and measure the appropriate distance from the landmark. Place the tape around the extremity at that site and measure.
      (3) Repeat the process on the other extremity.
      (4) Abbreviations to use in documentation:
          RI, LI - right or left instep
          RA, LA - right or left ankle
          RC, LC - right or left calf
      (5) If measuring at a different distance from the bony landmarks, document the distance used.

AFTER CARE:
1. Document in patient's record:
   a. Method of measurement used.
   b. Results of measurement for sites measured.
   c. Patient education provided with patient response.
   d. Communicate with physician, if indicated.

REFERENCES:
PURPOSE:
To assess the rate and character of cardiac function.

CONSIDERATIONS:
1. Abnormalities in rate, amplitude or rhythm may be indications of impaired circulation and heart efficiency.
2. Auscultation at the heart’s apex can detect heartbeats that cannot be detected at peripheral sites.
3. Apical pulse should always be compared with the radial pulse.
4. If the radial pulse is less than the apical pulse, a pulse deficit exists. Pulse deficit signals a decreased left ventricular output and can occur with conditions, such as atrial fibrillation, premature beats and congestive heart failure.
5. If client has been active, wait 5 to 10 minutes before assessing pulse.

EQUIPMENT:
Stethoscope
Clock/timer with second hand

PROCEDURE:
1. Adhere to Standard Precautions.
2. Explain the procedure to the patient.
3. Help the patient into a supine position if heart sounds seem faint or undetectable. Reposition patient in a forward-leaning position.
4. Warm the diaphragm or bell of the stethoscope in your hand. Placing a cold stethoscope against the skin may startle the patient and increase the heart rate. Keep in mind that the bell transmits low-pitched sounds more effectively than the diaphragm.
5. Place the diaphragm or bell of the stethoscope over the apex of the heart (normally located at the fifth intercostal space left of the midclavicular line).
6. Using the stethoscope, listen and count the apical pulse for 30 seconds and multiply by 2 or for 60 seconds if the rhythm is irregular. If the heart rate is irregular, upon completion of auscultation immediately palpate radial pulse.
7. If there is a difference between the apical and radial pulse rates, subtract the radial pulse from the apical pulse rate to obtain the pulse deficit.

AFTER CARE:
1. Document findings in patient’s record including site, pulse rate, rhythm and volume (full/bounding, weak/thready).
   a. Identify pulse patterns as:
      Normal - 60 to 80 beats per minute.
      Tachycardia - More than 100 beats per minute.
      Bradycardia - Less than 60 beats per minute.
      Irregular - Uneven time intervals between beats.
   b. If heart rate is irregular, note pattern, e.g., heartbeat 92 and irregular, every third beat skipped.
   c. Report to physician any abnormalities that reflect changes from the patient’s normal baseline pulse.

REFERENCES:
PURPOSE:
To assess peripheral circulation in the lower extremities.

CONSIDERATIONS:
1. Use a head to toe approach with side-to-side (left and right) comparison.
2. Check pulses for presence or absence, amplitude, rate, rhythm and equality (left and right).
3. Decrease in pulse amplitude may indicate peripheral arterial disease.
4. Note color, temperature, texture and sensation of skin and nailbeds.

EQUIPMENT:
Clock/timer with second hand

PROCEDURE:
1. Adhere to Standard Precautions.
2. Explain procedure to patient.
3. Choose Pulse location.
   a. Femoral Pulse
      (1) Position patient flat on back.
      (2) Palpate at juncture of thigh and torso (inguinal crease) midway between anterior superior iliac spine and symphysis pubis.
      (3) Use two hands, one on top of the other. This may facilitate palpating the femoral pulse, especially in obese patients.
      (4) Count the beats for 1 minute.
   b. Popliteal Pulse:
      (1) Position patient with knee slightly flexed, the leg relaxed.
      (2) Press the fingertips of both hands deeply into popliteal regions, slightly lateral to the midline.
      (3) If the popliteal pulse is not palpable with this approach, position patient on the abdomen, flex the leg 45 degrees at the knee and palpate deeply for the pulse.
      (4) Count the beats for 1 minute.
   c. Posterior Tibial Pulse:
      (1) Palpate at inner aspect of posterior malleolus (in the groove between the malleolus and the Achilles tendon).
      (2) If the pulse is difficult to palpate, try passive dorsiflexion of the foot to make the pulse more accessible.
      (3) Count the beats for 1 minute.
   d. Dorsalis Pedis Pulse:
      (1) Palpate top of foot, lateral to the extensor tendon of the big toe.
      (2) Palpate this pulse very gently; too much pressure will obliterate it.
      (3) Count the beats for 1 minute.

AFTER CARE:
1. Document findings in patient's record.
   a. Pulse rate.
   b. Amplitude.
      - Pulse amplitude may be quantified using a 0 to 4 scale:
        - 0 = absent
        - 1+ = diminished, barely palpable, easy to obliterate
        - 2+ = easily palpable, normal
        - 3+ = full, increased
        - 4+ = strong, bounding, cannot be obliterated
   c. Rhythm.
2. Report to physician any abnormalities, which reflect changes from the patient's baseline pulse.

REFERENCES:
Circulatory – Pulse: Radial Monitoring

Strength of Evidence Level: 3

PURPOSE:
To assess rate and character of cardiac function.

CONSIDERATIONS:
1. Abnormalities in rate, amplitude or rhythm may be indications of impaired circulation and heart efficiency.
2. If abnormal pulse is noted, take apical pulse.
3. If the patient has been active, wait 5 to 10 minutes before assessing pulse.

EQUIPMENT:
Clock/timer with second hand

PROCEDURE:
1. Adhere to Standard Precautions.
2. Explain procedure to patient.
3. Place the patient in a sitting or supine position, with his/her arm at his/her side or across his/her chest.
4. Using forefinger and middle finger pads of dominant hand, apply light pressure to inner aspect of patient's wrist to locate pulse beat.
5. Count the beats for 1 minute or for 30 seconds and multiply by 2. If irregularities are noted, count for 1 minute.
6. While counting the rate, assess pulse rhythm and volume by noting the pattern and strength of the beats. If you detect an irregularity, repeat the count and note whether it occurs in a pattern or randomly. If you are still in doubt, take an apical pulse.
7. Volume: Full or bounding describes a pulse of increased volume; weak or thready describes a pulse of decreased volume. When the peripheral pulse is irregular, take an apical pulse to measure the heartbeat more directly. If the pulse is faint or weak, use a Doppler ultrasound blood flow detector.

AFTER CARE:
1. Document findings in patient's record.
   a. Pulse rate
   b. Volume
   c. Rhythm
2. Report to physician any abnormalities, which reflect changes from the patient's baseline pulse.

REFERENCES:
REFERENCES


