VITAL SIGNS: *GUIDELINES FOR MEASURING VITAL SIGNS AND WEIGHT* LESSON PLAN

Lesson overview

Time: One hour

This lesson discusses the principles and techniques of measuring vital signs and weight. Although it may be review for most workers, many state regulatory agencies require that this material be taught annually.

Learning goals

At the end of this session, the learner will:

1. Demonstrate correct methods of measuring vital signs and weight.
2. Know how to document and report vital signs.
3. Recognize normal ranges for vital signs.

Teaching plan

Preparation:

Gather the following equipment: blood pressure cuff, stethoscope, thermometer, scale, and forms for documentation. Use the same equipment that is used in your facility for measuring vital signs and weight. Provide a copy of your documentation procedures, or an example of the correct way to document vital signs in your facility, to every learner.

Self-study:

If your workers are using this lesson plan for self-study, have them work with at least one other employee (two others is better) so they can check each other's performance of the required skills according to the skills checklist. The learners will need to read all the material, including this teaching plan, take and check the pretest, and perform the skills on the checklists before they receive the certificate. They also should review the correct way to document vital signs in your facility.

Introduction:

1. Give all learners a copy of the learning guide, and ask them to complete the pretest by following the instructions in each section.
2. Go over the pretest with the learners, being sure they understand the correct answers, using the answer key. Allow for questions and explanations.

What's normal?

Point out to your learners that older adults tend to have slightly lower temperatures that younger people, as well as slightly higher blood pressure, pulse, and respirations. Although older people may be in a lower or higher part of the "normal" range, this may still be normal for the individual. Some people may have conditions that mean their "normal" vital signs are different from the ranges given. When a resident can be expected to operate outside the normal range most of the time, the physician should be contacted to establish a normal and acceptable range for the resident. Otherwise, all vital signs outside normal ranges should be reported to the physician.

Testing vital signs measurements

1. Give the learners time to review the vital sign measurement technique discussed. Allow for questions.
2. Give each learner a copy of the approved documentation used in your facility for recording vital signs. Review the correct procedure in your agency for documenting vital signs and weight.
4. Arrange learners into groups of three. Ask one learner in each group to be the "resident" while the other two learners measure his or her vital signs and weight. Each learner should document the vital signs they obtain. The vital signs obtained by two different people on the same "resident" should be very close to the same measurement. Variations should be checked by the teacher to see if there is a problem with the technique used by one of the learners.
5. Have the "resident" change places with other learners so that everyone has an opportunity to demonstrate their ability to measure vital signs correctly. Use the check-off boxes on pages 3 and 4 of the learning guide to document that each learner has demonstrated the abilities on the checklists, and keep these in your training files.
6. Give the learners their certificates.

Measuring pulse and respirations

- ❑ Place the resident's hand in a resting position on a surface, palm up.
- ❑ Feel along the inside of the wrist with your fingertips, locating the pulse below the resident's thumb and just below the bend of the wrist. Do not use your thumb, as it has a strong pulse of its own.
- ❑ Look at your watch and find a starting point. Count the beats you feel for thirty seconds, and then multiply that number by two. If the pulse is irregular, count for a full minute and don't multiply.
- ❑ When you have finished counting the pulse, stay in the same position and watch the resident's chest. It is best if the resident is not aware that you are counting his breathing, because he may alter his breathing rate if he is conscious of being watched.
- ❑ Look at your watch and find a starting point. Count each time the resident's chest rises and falls as one single respiration.
- ❑ Count respirations for thirty seconds and multiply by two. If breathing is irregular, count for a full minute and don't multiply.
- ❑ Document both the pulse and the respirations; writing down the number of heartbeats and the number of breaths you counted per minute.
- ❑ Notify your supervisor of irregularities or measurements outside the normal range.

Measuring body temperature: Oral temperature

- ❑ Wait at least fifteen minutes after the resident has eaten, smoked, or had a drink.
- ❑ If using a glass thermometer, hold the end and shake the thermometer by snapping your wrist downward several times, shaking the mercury to the bottom of the glass. If you are using an electronic thermometer, check to be sure it is working. Use equipment designed for oral use, not rectal.
- ❑ Place a disposable cover on the thermometer, or follow your facility's policy for disinfecting thermometers before reusing them. Never wash a glass thermometer in hot water. Be sure the thermometer is not broken, chipped, or cracked.
- ❑ Ask the resident to wet his lips, and then insert the tip of the thermometer under the resident's tongue and slightly to the side. You may have to push a button on an electronic thermometer to activate it.
- ❑ Ask the resident to close his lips over the thermometer. A glass thermometer should stay in place for at least three minutes. An electronic thermometer should stay in place until it beeps.
- ❑ When finished, remove the thermometer from the resident's mouth and dispose of the cover.
- ❑ Hold a glass thermometer horizontally at eye level, turning it until you can see a solid line of mercury. The point at which the line stops is the temperature reading. Electronic thermometers will tell you the temperature with a digital reading.
- ❑ Document the reading. Disinfect and store the thermometer according to policy.

Axillary temperature—Under the arm

- ❑ Hold the thermometer in the center of the resident's armpit for at least <u>nine minutes</u>, or until it beeps.

Rectal temperature

- ❑ Assist the resident to lie on her side with her upper leg pulled up toward her chest as much as possible.
- ❑ Lubricate the covered rectal thermometer or rectal electronic probe and gently insert it no further than one inch into the resident's rectum. Keep the resident covered during this procedure to protect privacy.
- ❑ Hold in place for at least 3 minutes, while supporting the resident to prevent any movement that could cause injury. Be careful to avoid trauma to the rectum. Use gloves and Standard Precautions.

Measuring blood pressure

- ❏ The resident should be relaxed and comfortable, either sitting or lying down. Be sure there is no tight clothing restricting circulation on the arm. The arm should be bare. Loose sleeves can be pushed up.
- ❏ Rest the resident's arm on a surface such as a table or chair arm, with the palm up and the arm out straight. The resident should not hold his arm up, as using muscles could raise the pressure.
- ❏ Use a blood pressure cuff that is the right size for the resident. The cuff should fit easily around the arm and overlap, but not be so large that it overlaps itself too far. A cuff that is the wrong size will give an incorrect reading.
- ❏ Wrap the fully deflated cuff snugly (not too tight) around the resident's arm about an inch above the bend in the elbow. The cuff contains a sensor, usually marked with an arrow, which should be placed over the *brachial artery*. The brachial artery runs along the inside of the arm, on the side next to the body.
- ❏ Place the gauge where you can easily see it. Put your stethoscope earpieces in your ears.
- ❏ Close the valve on the sphygmomanometer bulb. This usually means turning the valve clockwise.
- ❏ Find the brachial pulse by placing your fingers just above the bend in the elbow along the side of the arm closest to the body. Keeping your fingers on the brachial artery, inflate the cuff until you can no longer feel the pulse, and then continue inflating for an additional 30 mm on the gauge. Usually you will inflate the cuff until the gauge reads between 170 and 200.
- ❏ Place the flat disk part of your stethoscope (the *diaphragm*) on the brachial artery just below the cuff and just above the bend in the elbow.
- ❏ Open the valve on the bulb slowly and steadily, turning it counter-clockwise. The cuff will begin to deflate.
- ❏ Listen closely to the sounds coming through the stethoscope. At the first pulse sound you hear, note the gauge reading. This is the systolic pressure reading.
- ❏ Note the gauge reading again when the pulse sound disappears. This is the diastolic pressure.
- ❏ Deflate the cuff and remove it. Record the blood pressure according to your facility's policy.

Weight measurement

⟹ Weight is not a vital sign, but changes in weight can be important symptoms of illness.

⟹ Weigh the resident at about the same time of day each time, using the same scale. Periodically check the scale's accuracy by weighing yourself and comparing this weight with your weight on other scales.

- ❏ Place the scale on a stable, solid surface, preferably a hard floor without carpeting.
- ❏ Have the resident remove shoes and unneeded clothing. Put a paper towel on the scale.
- ❏ Be sure the scale is set at zero before having the resident step on it.
- ❏ Make sure the resident is able to stand safely, and be prepared to provide support.
- ❏ Wait until the scale stops moving before reading the measurement.
- ❏ Document the weight measurement.