Vital Signs

Measuring body temperature, blood pressure, pulse, respiratory rate and oxygen saturation

Aims

- To ensure that students are able to demonstrate the safe and correct technique for setting up equipment and recording vital signs.
- To develop an understanding of the communication skills required while interacting with the patient. These include the correct process of identification, explanation of the procedure and consent to carry out the procedure.
- To develop an understanding of the importance of completing all relevant documentation.

Learning Outcomes

At the end of the session the student will be able to:

- Demonstrate the correct process of patient identification, explanation of the procedure and obtaining consent to carry out the procedure.
- Identify the correct equipment for the task, safely prepare the equipment and complete the procedure safely.
- Demonstrate the correct procedure of completing all relevant documentation.
- Show an appreciation regarding the importance of being familiar with local trust policy.
How to record body temperature, blood pressure, pulse, respiratory rate and oxygen saturation

You must be able to identify all relevant equipment that will be required to record a patient’s vital signs. All necessary protocols from correct identification of the patient to documentation in patients’ notes need to be followed.

Equipment required

(Figure 1)

1. Sphygmomanometer.
2. Stethoscope.
3. Oxygen saturation probe.
4. Thermometer and thermometer covers.
5. A watch with a second hand.
6. Clinell wipes
7. Pillow to support the patient’s arm.
8. Alcohol handwash.

Figure 1: Showing the equipment required for recording vital signs.
Initiating the procedure – to include

- Introduce yourself by full name and post.
- Identify the patient by asking them to state their name, date of birth and first line of address. Check name, hospital number and date of birth against patient identification wrist band and patient’s notes. This is to ensure that the vital signs are being recorded on the correct patient.
- Explain the procedure to the patient and gain the patient’s consent.
- Ensure the patient is comfortable and relaxed – enquire if they have eaten a large meal or had a hot or cold drink, had a hot bath, smoked a cigarette or undertaken vigorous exercise, within the last 30 minutes. Also enquire if they are taking any blood pressure lowering medications.
- Ask the patient if they are wearing a hearing aid or if they have any ear infections. Explain why these questions are being asked.
- Ask a series of relevant pre-assessment questions including presence of an arterio-venous fistula in the arm, any operations on arms, axillae or breasts, any pain, swelling or weakness in the arm.

Patients should not have a blood pressure recorded in an arm if the following are present:

- Bruising/swelling/broken skin on the arm.
- Any signs of local infection.
- Intravenous lines and infusion / cannula/ on that side.
- The patient has a weakness due to a stroke.
- Arterio-venous shunt for renal dialysis.
- If breast surgery with lymph node removal and/or radiotherapy has taken place on that side.
- Recent surgery on the arm.
Performance of tasks

Measuring Tympanic Temperature

- Use alcohol gel to clean hands or wash your hands as per local guidelines.

- Ask the patient if they are wearing a hearing aid or if they have any ear infection or pain. If the patient has bilateral hearing aids, ask the patient to remove one (do not do it yourself).

- Place a disposable cover on the temperature probe.

- Gently pull back the pinna and carefully insert the probe into the ear canal at the correct angle.

- Activate and wait for the signal from the thermometer.

- Observe the reading displayed on the thermometer.
- Dispose of the disposable cover by pressing the release button.
Measuring pulse rate

- Locate the radial artery correctly.
- Palpate the radial artery for one minute (During an assessment you may count the pulse rate for a minimum of 15 seconds and multiply by 4).
- Note the rhythm of the pulse. Check if the pulse is regular or irregular.
- Record your findings on the appropriate observation chart.

Measuring respiratory rate

- Whilst appearing to be palpating the radial artery and measuring the pulse rate, count the respiratory rate of the patient for one minute. (During an assessment you may count the respiratory rate for a minimum of 15 seconds and multiply by 4).
- One respiration consists of the full cycle of inspiration and expiration.
- Record your findings on the appropriate observation chart.
Measuring blood pressure

- Make sure the patient is relaxed and sitting/lying comfortably. Check arm for any contraindications to taking a blood pressure on that arm.
- Support patient’s arm so that upper arm is at the level of the heart.
- Place the blood pressure cuff 2 cm above the antecubital fossa.
- Inflate the cuff and obtain an estimated systolic blood pressure whilst palpating the radial artery. The point at which the radial artery disappears is the estimated systolic pressure. Deflate the cuff.
- Place the stethoscope over the brachial artery. Reinflate the cuff between 10-30 mmHg above the estimated systolic pressure. Whilst auscultating over the brachial artery, deflate the cuff at a rate of 2mmHg per second to obtain the systolic and diastolic blood pressure readings.
- Remove blood pressure cuff.
Measuring oxygen saturation

- Make sure the patient’s finger is well perfused (e.g. they are not wearing any tight jewellery)
- Select a finger that does not have nail polish or a false nail.
- Correctly attach the saturation probe to patient’s finger.
- Switch on the machine. Make sure that the probe is properly connected to the machine.
- Observe and record the oxygen saturation.
- When recording findings, document in the observation chart if the patient was breathing room air or was on oxygen. If oxygen was being administered indicate in the chart, the amount or percentage of oxygen being delivered.
Complete all relevant documentation.

- Accurately record all findings on the observation chart including time and date.

Aftercare

- Remove all equipment.
- Make sure the patient is comfortable.
- Thank the patient.

References