2 Blood Pressure Technique

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Scenario
Take the patient's blood pressure and document the reading.

Equipment
Sphygmomanometer
Appropriate sized inflatable cuff (this should be at least 80% of the arm's circumference).
Stethoscope

Candidate:	Hello my name is Student Nurse Collins. Can I just confirm your name?
Patient:	Yes my name is Mr Light, but call me George.
Voiceover:	Whilst doing this it is important to establish a rapport with your patient.
Candidate:	Thank you George I have been asked to take your blood pressure today. Is that OK?
Patient:	Yes that is fine.
Candidate:	Have you had your blood pressure taken before?
Patient:	Yes I have.
Candidate:	Good, so you know that I'll need to put a cuff around your arm and inflate it. This may cause some discomfort but please let me know if you want me to stop.
Patient:	Yes, I will.
Candidate:	I'll need to wrap the cuff around your upper arm. Please would you roll up your sleeve to expose your arm for me. *This must not cause pressure around the upper arm.*
Patient:	*Wearing short sleeves so can easily roll up his sleeve*

Candidate: Thank you.

Voiceover: Ensure that the patient is sitting in a comfortable position with the arm supported and with their legs and ankles uncrossed.
Position the patient's arm at the level of their heart and then locate the brachial artery.

Candidate: I am now locating your pulse.
The candidate selects the appropriate sized cuff and wraps it around the patient's upper bare arm.

Candidate: George I am now going to put the blood pressure cuff around your arm.

Voiceover: The cuff ought to fit firmly and comfortably but there should be enough room to slip one fingertip under the cuff.

Ensure that the bottom edge of cuff is 2cms above crease of elbow.

Candidate: I'm now going to inflate the cuff whilst feeling your pulse so I can accurately record your blood pressure. You may feel some discomfort. Please let me know if you want me to stop.

Patient: OK.

Voiceover: The candidate inflates the cuff until they cannot feel the pulse any more; then they immediately release the pressure valve. This gives an estimated systolic reading.

Candidate: *To examiner* The reading was 120mmHg. I will now add 30mmHg to this value when I inflate the cuff to take the patients blood pressure.

Candidate: I am now going to take your blood pressure reading, so I am going to reinflate the cuff and slowly release the pressure. Is that all right?

Patient: Yes that's fine.

Voiceover: The student now places their stethoscope over the brachial artery and inflates the cuff to 30mmHg above the estimated value.

She then releases the valve slowly to let the air out of the cuff.

The cuff is deflated at a rate of approximately 2-3mmHg per second.

When the first Korotkoff sound is heard this indicates the systolic blood pressure. The eventual softening and disappearance of Korotkoff sounds indicate the diastolic blood pressure.

When the student has completed the blood pressure they record the measurement as systolic over diastolic readings, telling the examiner the reading.

Candidate: Mr Light's blood pressure is 126 over 74.

Candidate: *Takes the cuff off George's arm* Thank you Mr Light, I have finished taking your blood pressure, you can now unroll your sleeve. Are you alright?

Patient: Yes, that was fine thank you.

Candidate: Do you have any questions?

Patient: No thank you.

Candidate: OK thank you Mr Light. Goodbye.

Key points

- Measuring blood pressure is considered a basic skill but it is often done badly, particularly when checked against standard criteria.
- In an OSCE an examiner can use a dual head stethoscope so they can also listen to the blood pressure whilst you are performing the procedure.
- A good explanation of the procedure and checking the patient understands can reduce anxiety and the possibility of "white coat hypertension."
- Hypertension is a reading of 140/90 mmHg on 3 or more occasions with each reading at least one week apart.
- If the recorded blood pressure is elevated above 140/90 mmHg, you may repeat the measurement after giving patient 1-2 minutes to rest.
- There are certain categories of people whose blood pressure is variable and this makes it difficult to reliably and accurately measure their blood pressures e.g. Children, Patients with arrhythmias, Pregnancy
- Positioning of the arm is very important. If the arm is below the level of the heart, it will lead to an overestimation of the systolic and diastolic readings. If the arm is above the level of the heart, it will lead to an underestimation.

Common Mistakes

- Putting the blood pressure cuff on the wrong way round.
- Choosing the wrong size cuff.
- Inaccurate systolic and diastolic readings.
- Lack of knowledge regarding implications of the blood pressure measurement.

Resources

- Dornan T and O'Neill (2006) *Core Clinical Skills for OSCEs in Medicine*. Churchill Livingstone Elsevier.
- Nicol M, Bavin C, Bedford-Turner, Cronin P, Rawlings-Anderson K (2000) *Essential* Nursing *Skills*. Mosby.