

SOP On Blood Pressure Measurement

Department of Family Medicine

Faculty of Medicine

UWUSL

Standard Operating Procedure (SOP) On Blood Pressure Measurement

Issued By
Faculty of Medicine, Uva Wellassa University of Sri Lanka

(1) Purpose

To provide a standardized, accurate, evidence-based, and safe method for measuring blood pressure in adults for screening, diagnosis, monitoring, and management of hypertension and other cardiovascular conditions.

(2) Scope

This SOP applies to medical students, medical officers, and other healthcare professionals performing blood pressure measurements in hospitals, outpatient departments, clinics, primary care centres, and community healthcare settings.

(3) Responsibilities

(3.1) Medical Students

- Prepare equipment and patient before the procedure
- Explain the procedure clearly and request verbal consent under supervision
- Ensure patient comfort, privacy, and proper positioning
- Select appropriate cuff size according to arm circumference
- Perform blood pressure measurement using correct technique under supervision
- Maintain infection prevention practices
- Record findings accurately in patient records
- Inform supervising medical officer of abnormal findings immediately

(3.2) Medical Officers

- Assess indication for blood pressure measurement
- Supervise students where appropriate
- Ensure adherence to guideline-based measurement technique
- Interpret blood pressure readings in clinical context
- Diagnose hypertension, hypotension, hypertensive urgency, or emergency when indicated
- Initiate appropriate management, follow-up, investigations, or referral
- Ensure calibration and maintenance of blood pressure measuring devices

(4) Safety Consideration

- Perform hand hygiene before and after procedure
- Confirm patient identity using appropriate identifiers
- Maintain patient privacy and dignity
- Ensure patient is relaxed and comfortable before measurement
- Avoid excessive cuff inflation causing unnecessary discomfort
- Do not measure blood pressure over injured, infected, oedematous, or traumatized limbs

- Ensure equipment is clean and functioning correctly

(5) Indication

- Routine vital sign assessment
- Screening for hypertension
- Monitoring patients with diagnosed hypertension
- Cardiovascular risk assessment
- Evaluation of dizziness, syncope, headache, chest pain, or shock
- Monitoring during acute illness
- Pre-operative assessment
- Monitoring response to antihypertensive therapy

(6) Contraindication

Avoid using the affected arm in patients with:

- Intravenous infusion in situ
- Arteriovenous fistula
- Severe trauma or burns
- Post-mastectomy arm
- Severe infection or oedema

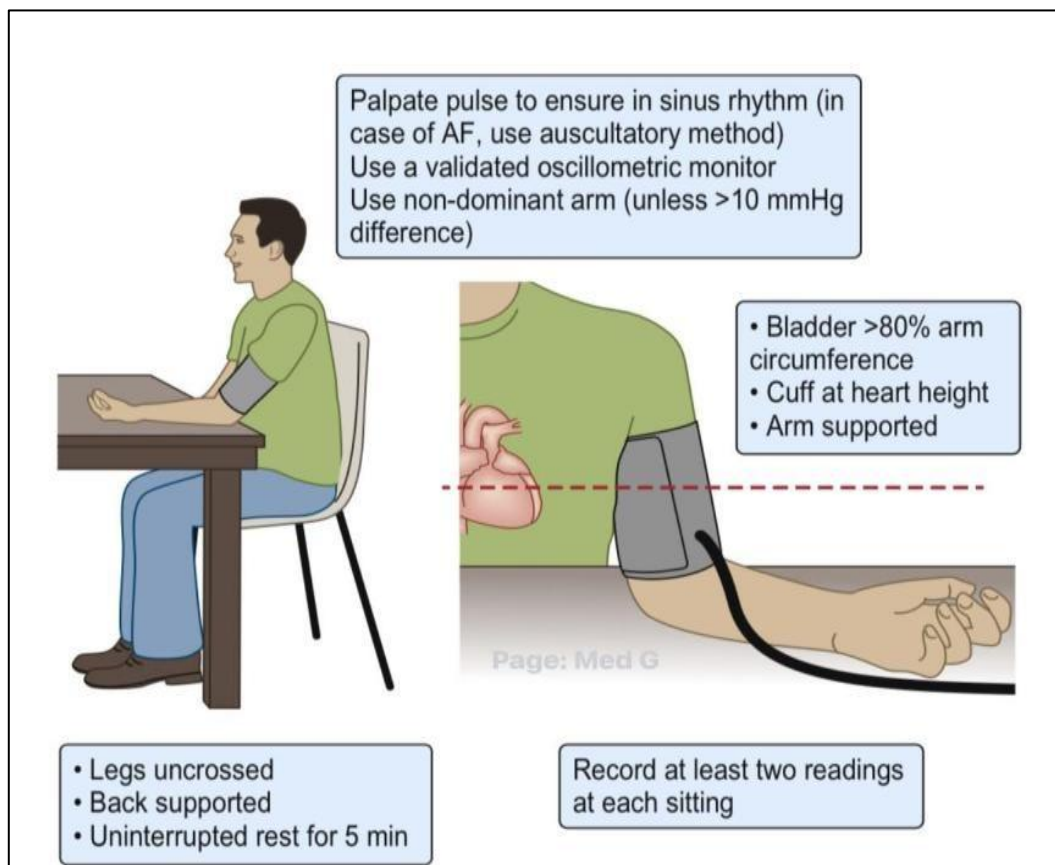
(7) Equipment Required

- Manual sphygmomanometer or validated automated blood pressure device



(8) Patient Preparation

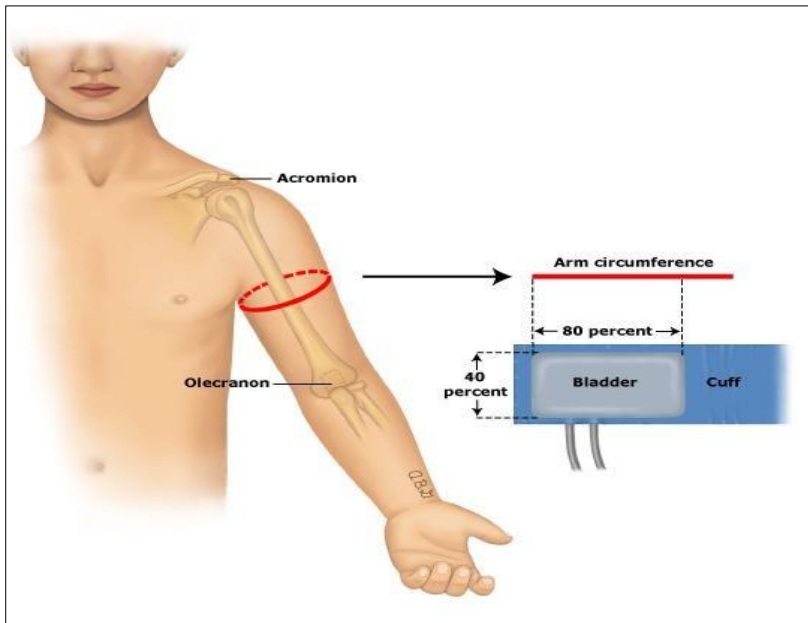
- Explain procedure clearly and request consent
- Confirm patient identity
- Ensure patient has rested quietly for at least 5 minutes before measurement
- Ensure patient avoids smoking, caffeine, exercise, or heavy meals for at least 30 minutes before measurement
- Ask patient to empty bladder if necessary
- Seat patient comfortably with back supported
- Ensure legs are uncrossed and feet flat on floor
- Support arm at heart level
- Remove tight clothing from upper arm
- Instruct patient not to talk during the procedure as talking may affect accuracy



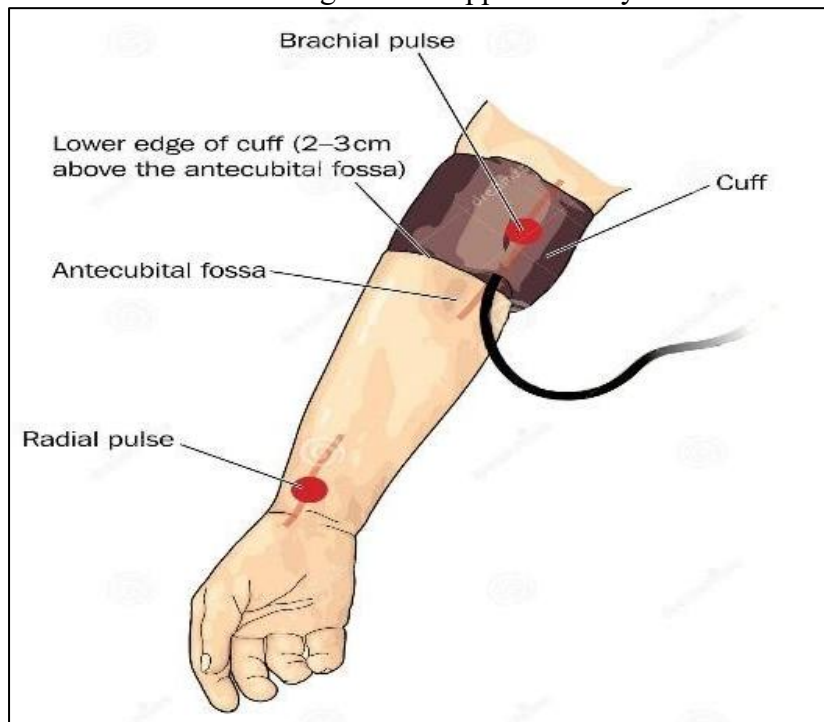
(9) Procedure

(9.1) Selection and Application of Cuff

- Select cuff size appropriate to patient's arm circumference – The internal inflation bladder should cover at least 40% of the patient's arm width and 80% of its total circumference.



- Wrap cuff evenly and firmly around upper arm
- Position lower edge of cuff approximately 2–3 cm above antecubital fossa



- Align artery marker over brachial artery



(9.2) Manual Blood Pressure Measurement

Step 1 – Palpatory Method

- Palpate radial pulse



- Inflate cuff until radial pulse disappears



- Note pressure level and inflate an additional 20–30 mmHg
- Deflate cuff completely

Step 2 – Auscultatory Method

- Place stethoscope over brachial artery without excessive pressure
- Reinflate cuff to previously determined level
- Deflate cuff slowly at approximately 2–3 mmHg per second
- Identify first Korotkoff sound as systolic blood pressure
- Identify disappearance of Korotkoff sounds as diastolic blood pressure
- Continue deflation for another 10 mmHg before removing cuff

(9.3) Automated Blood Pressure Measurement

- Apply cuff correctly
- Instruct patient to remain still and avoid talking
- Start device according to manufacturer instructions
- Allow machine to complete reading
- Record systolic and diastolic values displayed

(9.4) Repeat measurements

- Measure blood pressure at least two times during a visit and average readings when appropriate
- Repeat measurement after 1-2 minutes if readings are abnormal or inconsistent
- Measure blood pressure in both arms during the initial assessment
- Use the arm with higher blood pressure for future measurements

(9.5) Completion of Procedure

- Remove cuff carefully
- Ensure patient comfort
- Clean reusable equipment
- Perform hand hygiene
- Inform abnormal readings promptly to supervising doctor

(10) Infection Control

- Perform hand hygiene before and after procedure
- Clean reusable cuffs and stethoscopes regularly
- Follow standard precautions
- Use separate equipment for isolation patients when necessary

(11) Complications

- Temporary discomfort during cuff inflation
- Petechiae or bruising in susceptible individuals
- Anxiety-related elevation of blood pressure (white coat hypertension)
- Incorrect reading due to poor technique, movement, talking, or incorrect cuff size

(12) Quality Control

- Use validated and calibrated blood pressure devices
- Ensure correct cuff size is used for every patient
- Check equipment regularly for damage or malfunction
- Minimize patient movement and talking during measurement
- Repeat readings if results are inconsistent with clinical condition

(13) Documentation

- Date and time of measurement
- Blood pressure reading in mmHg
- Arm used and patient position if relevant
- Method use (manual or automated)
- Any symptoms observed
- Name/signature of operator

(14) Interpretation of Results

Blood pressure category	Systolic (mmHg)	And/or	Diastolic (mmHg)
Normal	Less than 120	and	Less than 80
Elevated	120-129	and	Less than 80
Hypertension stage 1	130-139	or	80-89
Hypertension stage 2	140 or higher	or	90 or higher
Hypertensive crisis	Higher than 180	and/or	Higher than 120

Prepared By:

Snr. Prof. Janaka C Ramanayake,
Cardre Chair and Senior Professor of Family Medicine,
Department of Family Medicine,
Faculty of Medicine
University of Kalaniya

Dr. Samira Jayasinghe
Acting Head
Department of Family Medicine
Uva Wellassa University of Sri Lanka

Snr. Prof. Muditha Vidanapathirana
Dean
Faculty of Medicine
Uva Wellassa University of Sri Lanka

Dr. Thakshila Dissanayake
Temporary Demonstrator
Department of Family Medicine
Uva Wellassa University of Sri Lanka

Date of Implementation – 10/06/2026