



## Operational Guideline

# Maintenance and Re-Calibration for Sphygmomanometers

Approved by: Population and Public Health

Pages:  
1 of 1

Updated: December 2024

Supersedes (if applicable)  
Target Review Date: 2027

**PURPOSE:** The purpose of this operational guideline is to outline the procedures for the maintenance and calibration of aneroid sphygmomanometers to ensure they are functioning appropriately and blood pressure measurements are accurate.

**SCOPE:** For public health nurses who conduct client health assessments, including blood pressure measurement.

**BACKGROUND:** Keeping blood pressure cuffs and equipment calibrated and maintained is crucial for ensuring accurate, reliable, and consistent blood pressure measurements, ultimately promoting client safety and well-being.

- Blood pressure readings must be precise to ensure accurate screening, referrals to health care providers and treatment.
- Regular calibration and maintenance ensure that measurements remain consistent across different devices and time periods and extends the lifespan of blood pressure cuffs and other devices, reducing the frequency and cost of repairs or replacements.
- Proper care prevents issues like leaks in the cuff or malfunctioning valves that can compromise performance.
- Clients rely on accurate readings for their health decisions, and consistently using reliable tools fosters confidence in the care provided.

**PROCEDURE:** The standardized process for the maintenance and calibration of sphygmomanometers, as well as guidelines for handling situations where sphygmomanometers are irreparable are outlined below:

1. The sphygmomanometer is calibrated when the gauge needle is resting within the oval or rectangular accuracy bubble on the dial, with the sphygmomanometer at zero pressure (i.e, in use)
2. While an unpressurized reading of zero does not guarantee accuracy at all scale points, failure of the pointer to indicate zero ( $\pm 3$  mm Hg) is a clear sign of potential error.
  - Contact logistics to arrange for re-calibration.
  - If the gauge needle does not rest within the bubble, the sphygmomanometer must be used.
3. If the tubing is cracked, damaged or the sphygmomanometer is inaccurate following calibration, it needs to be replaced and a new one must be ordered.
4. Damaged or irreparable sphygmomanometer should be sent to a proper disposal facility for safe and environmentally responsible handling.

- Send to “[Mother Earth](#)” for proper disposal.
5. Key steps to maintain and care for BP equipment include:
- 5.1 Regular calibration and maintenance
- Check equipment at least once per year according to the manufacturer guidelines to ensure it is calibrated.
  - Inspect the cuff, tubing, inflation bulb, and manometer for any signs of wear, cracks, or leaks / poor inflation with each use.
  - Avoid over-inflating the cuff: over-inflation can damage the cuff or the gauge.
  - Be careful not drop the manometer or other parts of the equipment as this can cause internal damage and affect accuracy.
  - When not in use, store BP equipment in a secure, padded case to avoid physical damage.
- 5.2 Cleaning of the equipment:
- Wipe down cuffs / inflation bulb and valve after each use and ensure complete drying before storing as moisture can damage internal components.
  - Wipe the manometer (gauge) clean with a soft, dry cloth. If necessary, use a damp cloth, but avoid moisture getting into the interior of the gauge.
  - Do not immerse the cuff or equipment in water or use harsh chemicals.
  - Stethoscope: Clean the ear tips and chest piece regularly with alcohol wipes to maintain hygiene.
- 5.3 Proper storage of equipment:
- Store in a dry place away from direct sunlight, extreme temperatures, or heat sources, as these can damage the materials and affect the accuracy of the readings.
  - Avoid tightly folding or crumpling the cuff. Roll it loosely and store it in a protective case to avoid stress on the fabric and tubing.

**VALIDATION:** Guidelines adapted from sphygmomanometer product information.

## REFERENCES:

1. **\*\*American Heart Association (AHA) Guidelines\*\***:
  - **\*\*AHA Blood Pressure Measurement Guidelines\*\***: [AHA Blood Pressure Measurement] (<https://www.heart.org/en/professional/heart-disease-prevention/blood-pressure>)
2. **\*\*World Health Organization (WHO) - Blood Pressure Measurement Protocols\*\***:
  - **\*\*WHO Blood Pressure Measurement\*\***: [WHO Blood Pressure Guidelines] (<https://www.who.int/news-room/fact-sheets/detail/hypertension>)
3. **\*\*National Institute for Health and Care Excellence (NICE)\*\***:
  - **\*\*NICE Hypertension Diagnosis Guidelines\*\***: [NICE Hypertension Diagnosis] (<https://www.nice.org.uk/guidance/ng136>)

4. **British Hypertension Society (BHS) - Blood Pressure Measurement Standards**:
  - **BHS Guidelines**: [BHS Blood Pressure Measurement] (<https://www.bhsoc.org/>)
5. **Journal of Clinical Monitoring and Computing**:
  - **Example Article on Calibration**: [Journal of Clinical Monitoring] (<https://link.springer.com/journal/10877>)
6. **Food and Drug Administration (FDA)**:
  - **FDA on Medical Device Calibration**: [FDA Medical Devices] (<https://www.fda.gov/medical-devices>)