HEALTH HOLDING

HAFER ALBATIN HEALTH CLUSTER
MATERNITY AND CHILDREN HOSPITAL

Department:	Nursing		
Document:	Internal Policy and Procedure		
Title:	Measurement of Blood Pressure		
Applies To:	All Nursing Staff		
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1. PURPOSE:

1.1 To obtain baseline readings of patient's blood pressure.
1.2 To identify abnormal alteration in blood pressure readings.
1.3 To obtain vital signs data in physical assessment.
1.4 To monitor patient's blood pressure readings.

2. DEFINITONS:

2.1 **Blood Pressure** - is the force exerted of the circulating blood on the walls of the blood vessel.
2.2 **Systolic** - a maximum arterial pressure during contraction of the left ventricle.
2.3 **Diastolic** - a minimum arterial pressure during relaxation and dilatation of the ventricles filled with blood.
2.4 **Mean Arterial Pressure (MAP)** – is defined as the average pressure in a patients arteries during one cardiac cycle, it is considered a better indicator of perfusion to vital organs than systolic blood pressure (SBP) doctors usually consider anything between 70 and 100mmHg to be normal.
2.4.1 To calculate MAP:

$$MAP = \frac{SBP + (2 \times DBP)}{3}$$

3. POLICY:

3.1 The blood pressure will be assessed for the following reasons:
3.1.1 Patient with any risk of blood pressure alterations: post-operative patients, acute or chronic pain, rapid IV infusion fluids or blood products, increased intracranial pressure, circulatory shock and history of cardiovascular disease, diabetes, renal disease and any conditions as ordered by the doctor.
3.1.2 Presence of signs and symptoms of blood pressure alterations, headache, flushing of face, bleeding, fatigue, dizziness, restlessness and pallor.
3.1.3 Factors that influence blood pressure: medication, daily variation, positioning.
3.1.4 The most appropriate blood pressure measurement.
3.2 The routine duration for taking blood pressure is every 6 hours.
3.3 A patient at risk for blood alteration, the duration for taking blood pressure is every 2 hours, or as ordered by the physician.
3.4 Use electronic system for documentation in vital signs monitoring form during system shutdown return to manual Use black ink pen. When plotting down the result write down for systolic and for diastolic BP on the vital signs chart. Affix RN initial and Job number at the bottom of each column.
3.5 Any abnormality in the measurement of blood pressure should be reported to the physician immediately.
3.6 If any error in recording is identified, do not use correction fluid. Cancel by drawing a line across the error and write "ME" and initials.

3.7 Selection of blood pressure site is important for accurate reading. Avoid applying cuff to extremity when intravenous fluid are infusing, arteriovenous shunt or fistula is present, breast or axillary surgery has been performed on the side, or if extremity has been traumatized, diseased or requires a case or bulky bandage. The lower extremities may be used when the brachial arteries are inaccessible.

3.8 Blood pressure measurement shall be repeated by two nurses using alternative site if blood pressure is inaudible or difficult to obtain.

3.9 The normal BP ranges from:

- 3.9.1 Neonate: 60-80/35-55 mmHg
- 3.9.2 Pediatric: 90-110/60-80 mmHg
- 3.9.3 Adult: 120/80 mmHg

4. PROCEDURE:

4.1 Assess the patient for

- 4.1.1 Any risk of blood pressure alterations: Post-operative patients. Acute or chronic pain, rapid IV infusion fluids or blood products, increased intracranial pressure, circulatory shock and history of cardiovascular diseases and any conditions as ordered by the doctor.
- 4.1.2 Assess for presence of signs and symptoms of blood pressure alterations, headache, flushing of face, bleeding, fatigue, dizziness, restlessness and pallor.
- 4.1.3 Determine the factors that influence blood pressure: Medication, daily variation, positioning, age, sex, activity, emotional state, time of day.

4.2 Perform hand hygiene and gather supplies.

- 4.2.1 Supplies needed: Stethoscope and BP cuff with sphygmomanometer (always use the right side of cuff).

4.3 Identify the patient using 2 identifiers (MRN, 4 names for Saudi and complete name for Non – Saudi).

4.4 Explain procedure to the patient. Encourage to rest for 5 minutes before measurement.

4.5 Have the patient sitting or lying down with the arm at heart level. Turn the arm outward with the palm facing up. Ensure legs are uncrossed.

4.6 Locates the brachial artery then applies the cuff of the sphygmomanometer snugly around the bared arm 2.5cm above the anticubital fosa. Ensure the arrow on the BP cuff is lined up in the brachial artery. Do not place the BP cuff over clothes or gown.

4.7 Positions the manometer at the chest level.

4.8 Measure the Blood Pressure manually:

- 4.8.1 First, estimate the systolic pressure by palpating the brachial artery and inflating the cuff to the point where the pulse disappears. Note that number on the gauge when the brachial artery is no longer felt. Then deflates the cuff and waits 30 to 60 seconds.
  - 4.8.1.1 By first estimating the systolic pressure, missing the auscultory can be avoided. The auscultory gap is an abnormal silence during auscultation that can lead clinician to obtain inaccurate systolic reading. This gap occurs in some patient (not all), especially if with hypertension.
- 4.8.2 Places the ear piece of stethoscope in the ears and ensure the sounds are clear and not muffled.
- 4.8.3 Palpate the brachial artery again, and place the bell of the stethoscope lightly on the brachial pulse site (diaphragm can be used rather than the bell, but the bell is the best for hearing low pitched sound).
- 4.8.4 Inflate the cuff 30mmHg above the number, the brachial artery disappears when estimating the systolic pressure.
- 4.8.5 Slowly release the value and allow mercury to drop at the rate of 2 -3 mmHg/sec.
- 4.8.6 Listen for the very first sound and note the point of the gauge when it was heard which indicate the systolic blood pressure (first korotkoff sound).
- 4.8.7 Continuous to allow the air to leave the cuff and note the point on the gauge when the sounds stops completely which indicates diastolic blood pressure (last korotkoff sound).
- 4.8.8 Deflates the cuff completely. Deflates the cuff completely.

4.8.9 Removes the cuff and sphygmomanometer from the patient and clean the earpiece and diaphragm /bell with alcohol swab.

4.9 Measure the Blood Pressure ELECTRONIC DEVICE:

4.9.1 Preparing the device

4.9.1.1 Make sure that the power switch is on .

4.9.1.2 Secure the dual air hose to the front of the monitor.

4.9.1.3 Connect the pressure cuff's tubing into the other ends of the dual air hose, and tighten connections to prevent air leaks.

4.9.1.4 Keep the air hose away from the patient to avoid accidental dislodgment.

4.9.2 Locates the brachial artery then applies the cuff of the sphygmomanometer snugly around the bared arm1 inch (2.5cm)above the anticubital fosa. (Never apply the cuff to a limb that has an I.V. line in place) .

4.9.3 Position the cuff's "artery" ar- row over the palpated brachial artery. Then secure the cuff for a snug fit

4.9.4 Press start the machine begins measuring. The cuff will inflate, then slowly deflate so that the machine can take the measurement. When the reading is complete, the monitor displays blood pressure.

4.10 Performs hand hygiene.

4.11 Documents reading in vital signs monitoring form and which arm the blood pressure was measured.

4.12 Notifies the physician for any abnormal blood pressure readings.

5. MATERIALS AND EQUIPMENT:

5.1 Sphygmomanometer

5.2 Stethoscope

5.3 Alcohol swab

5.4 Pen

6. RESPONSIBILITIES:

6.1 Nurse

7. APPENDICES:

7.1 N/A

8. REFERENCES:

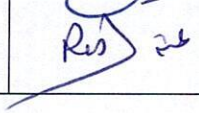
8.1 Ministry of Health, General Nursing Administration, Functions and Duties Policies and Procedures

8.2 www.pedcases.com/pediatrics-vital-signs-reference.chart

8.3 https://my.clevelandclinic.org/health/articles

8.4 Judith A. Schilling , H. Nancy Holemes , Lippincott's Nursing Procedures , fifth edition

9. APPROVALS:

	Name	Title	Signature	Date
Prepared by:	Ms. Bashayer Alshammari	CNE Educator		January 08, 2025
Reviewed by:	Ms. Teflah Alsahali	CNE Coordinator		January 13, 2025
Reviewed by:	Ms. Rasha Anwar	Nursing QM&PS Supervisor		January 15, 2025
Reviewed by:	Mr. Abdulelah Ayed Almutairi	QM&PS Director		January 16, 2025
Approved by:	Mr. Sabah Turayhib Al Harbi	Director of Nursing		January 22, 2025

Appendix 7.1

KINGDOM OF SAUDI ARABIA

وزارة الصحة
Ministry of Health

Hospital: _____ مستشفى:

Region: _____ المنطقة/المحافظة:

Dept./Unit: _____ القسم/الوحدة:

MRN: | | | | | | | | | | رقم الملف الطبي:

Name: _____ الاسم:

Nationality: _____ الجنسية:

Age: _____ ☐ سنة Years ☐ شهور Months ☐ يوم Days العمر:

Date of Birth: ___/___/14___ H ___/___/20___ تاريخ الميلاد:

Gender: ☐ Male ☐ Female الجنس:

VITAL SIGNS CHART

WEIGHT-kg						
POST-OPERATIVE DAY						
DATE						
TIME						
TEMPERATURE	40					
	39					
	38					
	37					
	36					
	35					
RESPIRATORY RATE						
O2 SATURATION						
BLOOD PRESSURE AND PULSE RATE PULSE = X SYSTOLIC = V DIASTOLIC = ^	240					
	220					
	200					
	180					
	160					
	140					
	120					
	100					
	80					
	60					
	40					
	20					
BP						
PAIN SCORE SCALE						
INITIALS AND JOB NUMBER						

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