

ALL OF US RESEARCH PROGRAM
Standard Operating Procedure
Blood Pressure Measurement

SOP Number 012
Effective Date

Version 4
6/26/2017

1.0 SCOPE

1.1 INTRODUCTION AND PURPOSE

1.1.1 The purpose of this procedure is to obtain three Blood Pressure (BP) measurements for study participants.

2.0 PROCEDURES

2.1 MATERIALS

- Digital (oscillometric automatic device) blood pressure device, with a variety of cuff sizes is required. In the event of an equipment failure a manual blood pressure device **may** be used (optional) to complete the measurement. Use of manual device should be documented in HealthPro.
- Clock or watch with second hand
- HealthPro (documentation tool)

2.2 RESPONSIBILITY

- Research coordinators, nurses and other trained Program staff assigned to complete Blood Pressure measurement.

2.3 PROCESS

The following steps should be taken to complete the Blood Pressure measurement for each participant:

1. Assure participants are sitting still in a chair with back support, legs uncrossed and feet flat on the floor, resting comfortably for at least five minutes prior to BP measurement.
2. Use of right arm is preferable. If right arm cannot be used (e.g. Amputations, Mastectomy, etc.) the left arm may be used. Select which arm is used in HealthPro (dropdown). If right or left arm is not available, no other extremities should be used. Document protocol modification in HealthPro.
3. Ask participant to breathe in and out slowly in a relaxed fashion.
4. Participant arms should be relaxed at the sides or the arm should be resting at the level of the heart supported by a table.
5. Participant's upper arm should be bare and free of constrictive clothing.
6. The participant and the provider should not talk during the measurement process.

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- The cuff should be applied according to the manufacturer's instructions to the bare arm. The artery indicator line should be positioned over the brachial artery. When the cuff is wrapped around the participant's arm, the indicator on the outer edge of the flap should fall between the size guidelines on the cuff.
- BP measurements will be taken one minute apart, three times. All three measurements will be recorded. The 2nd and 3rd measurements will be averaged automatically when entered into HealthPro.

Reading #1	Reading #2	Reading #3
Systolic 120 mmHg	Systolic 121 mmHg	Systolic 118 mmHg
Diastolic 80 mmHg	Diastolic 78 mmHg	Diastolic 77 mmHg
Heart Rate 70 bpm <input type="checkbox"/> Irregular Heart Rate	Heart Rate 68 bpm <input type="checkbox"/> Irregular Heart Rate	Heart Rate 66 bpm <input type="checkbox"/> Irregular Heart Rate
Average		
Blood pressure: 119.5 / 77.5 mmHg (average of 2nd and 3rd measures) Heart rate: 67.0 bpm (average of 2nd and 3rd measures)		

- If an out-of-range value is entered an alert will be displayed in HealthPro, prompting an action by the staff.

Actionable Findings:

- An Emergent referral will be displayed if two consecutive blood pressure readings meet the following criteria:
 - Systolic BP > 200 mmHg
 - Systolic BP <100 mmHg with any symptoms of hemodynamic instability
 - Diastolic BP >120 mmHg
 - Diastolic BP <60 mmHg with any symptoms of hemodynamic instability

An Urgent referral will be displayed if two consecutive BP readings meet the following criteria:

- Systolic BP between 180-200 mmHG
- Diastolic BP between 110-120 mmHG

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When an alert for an emergent or urgent referral is displayed, site specific SOP or guidelines of the core protocol for emergent and urgent care referral should be followed (depending on your site's policy).. If the visit is terminated, and the participant is scheduled to complete their visit at a future date, the blood pressure and heart rate must be repeated. If the other physical measurements were completed during the initial visit, the provider does not need to repeat the physical measurements that were already taken and documented in HealthPro.

11. Results documented in HealthPro should include: a) location utilized and b) average of the systolic and diastolic pressures of the 2nd and 3rd BP measurements.

Reading #1	Reading #2	Reading #3
<p>Systolic: 120 mmHg</p> <p>Diastolic: 80 mmHg</p> <p>Heart Rate: 70 bpm</p> <p><input type="checkbox"/> Irregular Heart Rate</p> <p>Add protocol modification</p>	<p>Systolic: 221 mmHg</p> <p><small>This value may indicate a hypertensive crisis if confirmed by a consecutive measure.</small></p> <p>Diastolic: 78 mmHg</p> <p>Heart Rate: 68 bpm</p> <p><input type="checkbox"/> Irregular Heart Rate</p> <p>Add protocol modification</p>	<p>Systolic: 118 mmHg</p> <p>Diastolic: 77 mmHg</p> <p>Heart Rate: 66 bpm</p> <p><input type="checkbox"/> Irregular Heart Rate</p> <p>Add protocol modification</p>

3.0 LIST OF ATTACHED FORMS

None

4.0 REFERENCES TO OTHER APPLICABLE SOPS

Heart Rate

5.0 REFERENCES

Recommendations for Blood Pressure Measurement in Humans and Experimental Animals.
<http://circ.ahajournals.org/content/111/5/697.long>

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6.0 APPROVALS

MEDICAL DIRECTOR? Director of Operations?
 DATE

REVISION HISTORY	
Original Date	Month XX, Year
Review Date	Month XX, Year
1. ----	

Effective Date	Version	Synopsis of Change
1/17/2017	1	Original Document
4/20/17	2	<ul style="list-style-type: none"> - Section 2.1 added language that manual cuff may be used when automatic cuff fails and should be documented in HealthPro - Section 2.3 (#1) changed resting time to 5 minutes - Section 2.3 (#2) added no other extremities besides arm should be used for obtaining blood pressure. - Section 2.3 (#8) removed language relating to cuff sizes and added that staff should follow device manufacturer's instructions. - Section 2.3 (#10) added diastolic criteria to emergent referral language. - Formatting changes
4/26/17	3	<ul style="list-style-type: none"> - Updated screen shot
6/26/17	4	<ul style="list-style-type: none"> - Added "If the visit is terminated, and the participant is scheduled to complete their visit at a future date, the blood pressure and heart rate must be repeated. If the other physical measurements were completed during the initial visit, the provider does not need to repeat the physical measurements that were



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		already taken and documented in HealthPro.” – Added language about following site specific SOP of “or guidelines of the core protocol for emergent and urgent care referral should be followed (depending on your site’s policy)”
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