### 3F: Orthostatic Vital Sign Measurement

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| **Background:** This tool can be used to identify orthostatic hypotension, a risk factor for falls in hospitalized patients.  **Reference:** Adapted from: John Dempsey Hospital Department of Nursing Clinical Manual/Nursing Practice Manual (available at: <http://nursing.uchc.edu/nursing_standards/docs/Orthostatic%20(Postural)%20Vital%20Sign%20Measurement.pdf> ) with information from MaineHealth Cardiovascular Health (available at: [www.mainehealth.org/workfiles/mh\_healthinformation/Measuring\_Orthostatic\_Vital\_ Signs.pdf](http://www.mainehealth.org/workfiles/mh_healthinformation/Measuring_Orthostatic_Vital_Signs.pdf)).  **How to use this tool:** Staff nurses and nursing assistants typically complete this protocol. All findings should be reported to the treating medical provider. The decision whether to use this protocol on all patients (e.g., on admission), or as needed, will depend on the specific unit. However, consider checking orthostatic vital signs:   * After a fall. * When a patient complains of a symptom that may be due to orthostasis (e.g., lightheadedness). * As part of a routine admission assessment on units where patients frequently take medications that cause orthostasis (e.g., geriatric psychiatry). * When a patient is on a medication that may cause orthostasis and has other risk factors for falls.   Use this tool in conjunction with clinical assessment and a standard assessment of fall risk factors (e.g., Tool 3H, “Morse Fall Scale for Identifying Fall Risk Factors, or Tool 3G, ‘STRATIFY Scale for Identifying Fall Risk Factors”) to determine a patient’s risk factors for falls, and then plan care accordingly. |

##### Protocol for Orthostatic (Postural) Vital Sign Measurement

Policy

1. Orthostatic vital signs may be indicated to evaluate patients who are at risk for hypovolemia (vomiting, diarrhea, bleeding), have had syncope or near syncope (dizziness, fainting), or are at risk for falls. A significant change in vital signs with a change in position also signals increased risk for falls.

Orthostatic vital signs are not indicated in patients who:

1. Have supine hypotension.
2. Have a sitting blood pressure ≤90/60.
3. Have acute deep vein thrombosis.
4. Exhibit the clinical syndrome of shock.
5. Have severely altered mental status.
6. Have possible spinal injuries.
7. Have lower extremity or pelvic fractures.
8. Are not mobile enough to get out of bed.

Orthostatic vital signs (blood pressure, pulse, and symptoms) will be obtained and recorded while the patient is in the supine position as well as in the standing position. If the patient is unable to stand, orthostatics may be taken while the patient is sitting with feet dangling.

Equipment

* Noninvasive blood pressure measurement device.
* Blood pressure cuff of correct size for the patient.

Procedure

1. Instruct the patient on the process of orthostatic blood pressure measurement and its rationale.
2. Assess by verbal report and observation the patient’s ability to stand.
3. Have patient lie in bed with the head flat for a minimum of 3 minutes, and preferably 5 minutes.
4. Measure the blood pressure and the pulse while the patient is supine.
5. Instruct patient to sit for 1 minute.
6. Ask patient about dizziness, weakness, or visual changes associated with position change. Note diaphoresis or pallor.
7. Check sitting blood pressure and pulse.
8. If the patient has symptoms associated with position change or sitting blood pressure ≤90/60, put patient back to bed.
9. Instruct patient to stand.
10. Ask patient about dizziness, weakness, or visual changes associated with position change. Note diaphoresis or pallor.
11. If patient is unable to stand, sit patient upright with legs dangling over the edge of the bed.
12. The patient should be permitted to resume a supine position immediately if syncope or near syncope develops.
13. Measure the blood pressure and pulse immediately after patient has stood up, and then repeat the measurements 3 minutes after patient stands. Support the forearm at heart level when taking the blood pressures to prevent inaccurate measurement.
14. Assist patient back to bed in a position of comfort.
15. Document vital signs and other pertinent observations on the nursing flowsheet or in the medical record. Note all measurements taken and the position of the patient during each reading.

Evaluation

1. Subtract values 3 minutes after standing (or if patient cannot stand, then sitting) from lying values.

A decline of ≥20mm Hg in systolic or ≥10 mm Hg in diastolic blood pressure after 3 minutes of standing = orthostatic hypotension.

A heart rate increase of at least 30 beats per minute after 3 minutes of standing may suggest hypovolemia, independent of whether the patient meets criteria for orthostatic hypotension.

A blood pressure drop immediately after standing that resolves at 3 minutes does not indicate orthostatic hypotension. However, this finding may be useful to confirm a patient’s complaint of feeling dizzy upon standing and may lead to patient education about using caution when arising from a lying or sitting position.

Report all findings to the treating medical provider, including all sets of blood pressure and pulse results, and whether the patient experienced pallor, diaphoresis, or faintness when upright.

Sometimes it may be difficult to determine if the resident/patient has orthostatic hypotension when checking only at one point in time. If the resident/patient does not show evidence of orthostatic hypotension during the assessment but has complained of lightheadedness or dizziness, perform the measurements when the resident/patient complains or within 2 hours of the start of a meal.