

**Final process standard for maintaining fluid and electrolyte balance  
for critically ill patients in ICUs**

**Comprehensive Standard I:** Critical care nurses perform basic assessment measures to all patients who experience fluid and electrolyte imbalance from their time of admission and during their length of stay.

<b>Supportive Standard</b>	<b>Activities / Skills</b>
<p><b>I.1. Critical care nurses shall perform component secondary assessment to all patients who experience fluid and electrolyte disturbance.</b></p>	<p><b>1.1. Critical care nurses shall obtain complete patients history as:</b></p> <ul style="list-style-type: none"> <li>1.1.1. Obtain demographic related data from the patient.</li> <li>1.1.2. Assess the chief complain as a reason for patient admission.</li> <li>1.1.3. Assess the patient history by using the SAMPLE model.</li> </ul> <p><b>1.2. Critical care nurses shall perform specific physical assessment measures as appropriate for these patients as:</b></p> <ul style="list-style-type: none"> <li>1.2.1. Assess vital signs / hour for patients.</li> <li>1.2.2. Assess level of consciousness for these patients by using GCS.</li> <li>1.2.3. Measure weight and height of all admission ICU patients to take baseline data about this parameter to monitor these changes and record it.</li> </ul>

**Comprehensive Standard II (Fluid Balance Standard):** Critical care nurses monitor all parameters and signs and symptoms, and provide appropriate nursing intervention to correct fluid imbalance.

Supportive Standard	Activities / Skills
<p><b>I.2. Critical care nurses shall monitor all parameters that affect fluid, such as the CVP and fluid chart.</b></p>	<p><b>2.1. Critical care nurses shall measure and monitor CVP for patients every 6 hour.</b></p> <p><b>2.1.1. Accurately measuring CVP for patients as a following:</b></p> <p>2.1.1.1. Prepare the patient, equipment and environment.</p> <p>2.1.1.2. Begin IV infusion and checking the patency by flush back.</p> <p>2.1.1.3. Close the stopcock in the direction of the patient and allow the fluid to pass via manometer line</p> <p>2.1.1.4. Position the patient and put the manometer line at mid axillary line.</p> <p>2.1.1.5. Take CVP reading when the fluid stops to fluctuate.</p> <p>2.1.1.6. Begin IV fluid again.</p> <p>2.1.1.7. Document the procedure in patient's record.</p> <p><b>2.1.2. Interpret any changes in patient's CVP.</b></p> <p><b>2.1.3. Report any changes for physician and follow order.</b></p>
	<p><b>2.2. Critical care nurses shall monitor fluid intake and output chart.</b></p> <p><b>2.2.1. Accurate measuring intake and output/ hour and considering insensible loss in equation that varies according to body temperature changes.</b></p> <p><b>2.2.2. Record any changes in patient's record.</b></p> <p><b>2.2.3. Report these changes to the physician and follow order.</b></p>

Supportive Standard	Activities / Skills
<p><b>II.2. Critical Care Nurses shall monitor all signs and symptoms that affect fluid balance such as presence of edema, chest sound and skin changes.</b></p>	<p><b>2.3. Critical care nurses shall assess the presence of edema.</b></p> <p>2.3.1. Identify the size, degree, extent and type of edema present.</p> <p>2.3.2. Record and report this change.</p> <p>2.3.3. Elevate the edematous part and check the bone prominence of the site.</p>
	<p><b>2.4. Critical care nurses shall monitor the skin turgor and mucus membrane changes</b></p> <p>2.4.1. Interpret any changes in skin condition and record it.</p> <p>2.4.2. Report this change to physician.</p> <p>2.4.3. Provide skin care and position change every 2 hours as possible.</p> <p><b>2.5. Critical care nurses shall auscultate chest continuously for abnormal sounds.</b></p> <p>2.5.1 Interpret any changes in chest sounds and record it</p> <p>2.5.2. Report the changes to the physician.</p> <p>2.5.3. Follow physician's order and assess patient's response to treatment.</p>
<p><b>III.2. Critical care nurses shall provide all specific nursing care for patients who experience fluid imbalance by monitoring laboratory investigations and fluid administration.</b></p>	<p><b>2.6. Critical care nurses shall monitor all laboratory investigations that are linked with fluid balance</b></p> <p>2.6.1. Interpret and monitor lab results.</p> <p>2.6.2. Record any changes and report it to the physician for appropriate action.</p> <p><b>2.7. Critical care nurses shall increase or restrict fluid intake as doctor order.</b></p> <p><b>2.8. Critical care nurses shall administer diuretic as ordered and record it. Use approved items of charting as a following:</b></p> <p>2.8.1. Use ink.</p> <p>2.8.2. Indicate date, time, dose and signature of The responsible doctor on entries.</p> <p>2.8.3. Complete and brief charting with no blank space left.</p>

	2.7.4. Error crossed out and signature with full name.
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**Comprehensive Standard III (Sodium Balance Standard):** Critical care nurses monitor all parameters and signs and symptoms, and provide appropriate nursing intervention to correct sodium imbalance.

Supportive standards	Activities / Skills
<p><b>I.3. Critical care nurses shall monitor all parameters and element that can affect on sodium balance such as CVP and fluid chart.</b></p>	<p><b>3.1. Critical care nurses shall measure and monitor CVP for patients every 6 hour.</b></p> <p><b>3.2. Critical care nurses shall monitor fluid intake and output chart.</b></p> <p><b>3.3. Critical care nurses shall assess nutritional supplementation for these patients increasing or decreasing sodium in their die as doctor ordered.</b></p>
<p><b>II.3. Critical care nurses shall monitor all signs and symptoms that can affect on sodium balance.</b></p>	<p><b>3.4. Critical care nurses shall assess presence of seizure for these patients.</b></p> <p>3.4.1. Identify and interpret the type, duration of seizure.</p> <p>3.4.2. Provide care and safety measure during seizure</p> <p>3.4.3. Record any changes in patient record.</p> <p>3.4.4. Report these changes to physician and follow his order.</p>
<p><b>III.3. Critical care nurses shall provide all specific nursing care for sodium imbalance patient by monitoring laboratory investigation and sodium administration.</b></p>	<p><b>3.5. Critical care nurses shall monitor all laboratory investigation that are linked with sodium balance as Na, and other serum electrolytes, bl. Urea, and creatinine, bl.PH.</b></p> <p>3.5.1. Interpret and monitor the lab results.</p> <p>3.5.2. Record any changes and report it to physician for appropriate action taken.</p> <p><b>3.6. Critical care nurses shall Increase/restrict fluid intake as ordered.</b></p> <p>3.6.1. Administer IV fluid containing sodium (in hypernatremia) as ordered.</p> <p>3.6.2. Administer hypotonic IV fluid (in</p>

	<p>hypernatremia) as ordered with slow rate.</p> <p><b>3.6.3. Administer diuretics as ordered.</b></p>
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**Comprehensive Standard IV (Potassium Balance Standard):** Critical care nurses monitor all parameters and signs and symptoms, and provide appropriate nursing intervention to correct potassium imbalance.

<b>Supportive standards</b>	<b>Activities / Skills</b>
<p><b>I.4. Critical care nurses shall monitor all parameters and elements that can affect potassium balance.</b></p>	<p><b>4.1. Critical care nurses shall assess and monitor ECG changes.</b></p> <p><b>4.1.1. Initiate cardiac monitor for ECG monitoring as the following:-</b></p> <p>4.1.1.1. Prepare patient, equipments and environment.</p> <p>4.1.1.2. Check and choose the appropriate leads.</p> <p>4.1.1.3. Connect ECG leads and operates the cardiac monitor.</p> <p>4.1.1.4. Set alarm based on patient condition.</p> <p><b>4.1.2. Interpret any changes in ECG.</b></p> <p><b>4.1.3. Report any changes to physician and follow his order.</b></p> <p><b>4.2. Critical care nurses shall monitor fluid intake and output chart.</b></p> <p><b>4.3. Critical care nurses shall assess nutritional supplementation for patients by increasing or decreasing potassium in their diet as doctor order.</b></p>

**II.4. Critical care nurses shall monitor all signs and symptoms that can affect potassium balance.**

**4.4. Critical care nurses shall assess muscles for tone, strength, cramp, twitching, paresthesia, and paralysis.**

4.4.1. Identify and interpret the problem.

4.4.2. Record any changes in muscles.

4.4.3. Report any changes to the physician and follow the plan of treatment.

**III.4. Critical care nurses shall provide proper nursing intervention for patients who experience potassium imbalance by monitoring laboratory investigation and potassium administration.**

**4.5. Critical care nurses shall assess and monitor laboratory results: K, other serum electrolytes, bl. Urea, creatinine and bl.PH.**

**4.6. Critical care nurses shall administer the intravenous fluid with prescribed K supplemental as follows:-**

4.6.1. Check five right of the patient.

4.6.2. Check renal function tests.

4.6.3. Dilute K infusion and administrate it in a central line.

4.6.4. Adjust the infusion flow by using infusion pump.

4.6.5. Assess ECG changes during administration.

4.6.6. Assess the site of infusion for infiltration.

4.6.7. Label the bottle with the date and time.

**4.7. Administer calcium gluconate, calcium chloride, insulin, sodium bicarbonate, diuretics as ordered.**

**Comprehensive Standard V (Calcium Balance Standard):** Critical care nurses monitor all parameters and signs and symptoms, and provide appropriate nursing intervention to correct calcium imbalance.

Supportive standards	Activities / Skills
<p><b>I.5. Critical care nurses shall monitor all parameters and element that can affect on calcium balance.</b></p>	<p><b>5.1. Critical care nurses shall assess and monitor ECG changes.</b></p> <p><b>5.2. Critical care nurses shall check peripheral perfusion: capillary refill, Peripheral pulses and color.</b></p> <p><b>5.3. Critical care nurses shall Assess nutritional supplementation for these patients by increasing or decreasing calcium in their diet as doctor ordered.</b></p>
<p><b>II.5. Critical care nurses shall monitor all signs and symptoms that can affect on calcium balance.</b></p>	<p><b>5.4. Critical care nurses shall assess muscle for tone, strength, cramp, twitching, paresthesias, and paralysis</b></p> <p><b>5.5. Critical care nurses shall assess positive trousseaus traid, chvosteks signs in hypocalcemia.</b></p> <p><b>5.6. Critical care nurses shall monitor patients for seizure</b></p>
<p><b>III.5. Critical care nurses shall provide all nursing interventions for patients who experience calcium imbalance by monitoring laboratory investigation and calcium administration.</b></p>	<p><b>5.7. Critical care nurses shall assess and monitor laboratory results: Ca, and other serum electrolytes, bl. Urea, and creatinine, bl.PH.</b></p> <p><b>5.8. Critical care nurses shall administer the intravenous fluid with prescribed Ca supplemental as the following:-</b></p> <p><b>5.8.1. Check five right of the patient.</b></p> <p><b>5.8.2. Assess drug interaction with bicarbonate</b></p> <p><b>5.8.3. Connect the fluid to IV line.</b></p> <p><b>5.8.4. Administer IV calcium through IV infusion in central line or largest vein</b></p> <p><b>5.8.5. Assess site of infusion for infiltration.</b></p> <p><b>5.8.6. Label the bottle with date and time.</b></p>