



# Rancho Los Amigos National Rehabilitation Center

## DEPARTMENT OF NURSING

### CLINICAL

### POLICY AND PROCEDURE

**SUBJECT:** INTRAVENOUS THERAPY: ELECTROLYTE REPLACEMENT

**Policy No.:** C122.10

**Effective Date:** 06/2014

**Page:** 1 of 2

**Purpose:** To outline the management of the patient receiving electrolyte replacement.

**Physician's Order Required:** Yes

**Performed by:** RNs, Affiliating student nurses under the direct supervision of an RN/Affiliate Instructor.

#### **Policy Statements:**

1. The physician will evaluate the need to transfer the patient to a monitored unit if signs and symptoms of electrolyte imbalances are present.
2. Electrolytes should be replaced cautiously in patients with renal insufficiency/failure.
3. Electrolyte replacement MUST be administered via infusion pump and preferably through a central line if not contraindicated.
4. Electrolyte replacement in pediatric patients and the need for transfer to a higher level of care will be determined on an individual basis.

#### **I. STANDARDS OF PRACTICE:**

##### **A. Assessment:**

1. The serum electrolyte levels will be evaluated prior to infusion.
2. Assess the following prior to initiation and during infusion.
  - Clinical signs of electrolyte imbalances:
    - Alteration in level of consciousness (LOC)
    - Abnormal pulse
    - Palpitations
    - Neuromuscular changes
3. Dysrhythmias and ECG changes (ICU, PCU, Peri- operative areas)
4. Assess all possible sources for electrolyte additives including the IV infusion and PO/ enteral administration.
5. Assess peripheral infusion site for infiltration or phlebitis every 2 hours (every 1 hour in pediatric patients).
6. Re-evaluate serum electrolyte values as ordered by physician.

##### **B. Safety**

1. Refer to the Electrolyte Administration Guidelines (see attached) for Maximum Total Hourly Electrolyte Infusion.
2. Administer via infusion pump.
3. Check drug/diluent compatibility prior to administration.
4. Check electrolyte values prior to infusion.

##### **C. Reportable Conditions:**

1. Alteration in LOC

2. Abnormal pulses
3. Palpitations
4. Neuromuscular weakness, paresthesias, spasms, tetany, seizures
5. Persistent abnormal lab values
6. Infiltration
7. ECG changes

**II. PATIENT EDUCATION:**

- A. Instruct the patient or caregiver on:
  1. Purpose of electrolyte replacement
  2. Reporting any discomfort on IV site
    - a. Reporting any cardiovascular and neuromuscular symptoms

**III. DOCUMENTATION:**

- A. Document in accordance with documentation standards – Refer to Nursing Policy C152  
*Medication Management Guidelines*

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**References:**

Infusion Nurses Society (2021). Infusion Nursing Standards of Practice. *Journal of Infusion Nursing*. Norwood, MA.

Moreau, D. (Ed.). (2020). *Nursing Drug Handbook*. New York: Wolters Kluwer.

Phelps, S., Hagemann, T. M., Lee, K. R., & Thompson, J. A. (2018). *Pediatric injectable drugs*.

Rancho Los Amigos National Rehabilitation Center. (2023) *Nursing policy and procedure manual. C122 - Intravenous Therapy*

Rancho Los Amigos National Rehabilitation Center (2022) *Policy and Procedure Manual Pharmacy Services 5.09.7- Potassium Chloride Guidelines*

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06/2014 – New  
06/2017 – Revised  
04/2020 – Revised  
08/2023- Revised

Approved by:  
Pharmacy and Therapeutics Committee: July 2014  
Nursing Practice Council: June 2014

**ICU/PCU**

The following are standard recommendations:

	<b>Standard Infusion rate</b>	<b>Maximum Rate</b>	<b>Standard Concentration</b>	<b>Maximum Concentration</b>
<b>Calcium</b> Gluconate (90mg or 4.5 mEq of elemental calcium/g)	1 gram/hr	1 gram/hr	1-2 grams in 100 mLs In D5W or NS	2 grams in 50 mLs In D5W or NS
<b>Calcium</b> Chloride (273mg or 13.6mEq of elemental calcium/g)	1 gram/hr	1 gram/hr	1-2 grams in 100 mLs In D5W or NS	2 grams in 50 mLs In D5W or NS
<b>Magnesium</b> Sulfate	1 grams/hr	2 grams/hr.	2-5 grams in 250 mLs In D5W or NS	2 grams in 50 mLs In D5W or NS
<b>Phosphate</b> Potassium or Na Phosphate	3-5 mmol/hr	7.5 mmol/hr.	15 mmol in 250 mLs In D5W or NS	30 mmol in 250 mLs In D5W or NS
<b>Potassium</b> (K-rider)  Cardiac monitor required for rate above 10 mEq/ hr.	Peripheral 10 mEq/hr.  Central 10 mEq/hr.	Peripheral 10 mEq/hr.  Central 20 mEq/hr. (For severe hypokalemia)	10-20 mEq in 250 mLs 30-40 mEq in 500 mLs In D5W or NS  Maintenance Infusion 80 mEq/1000 mLs	Peripheral 10 mEq in 100 mLs (Fluid restricted patients)  Central 40 mEq in 100 mLs (ICU Only)  20 mEq in 100mLs (PCU) In D5W or NS
<b>Hypertonic Saline</b>	25-50 mLs/hr	50 mLs/hr	<b><u>Restricted to ICU use only</u></b>	

\*This tool is utilized only as a guideline, any deviation from the recommendations will be approved by the patient care team.

**Peri-operative Areas**  
(Pre-Op, OR, PACU)

The following are standard recommendations:

	<b>Standard Infusion rate</b>	<b>Maximum Rate</b>	<b>Standard Concentration</b>	<b>Maximum Concentration</b>
<b>Calcium Gluconate</b> (90mg or 4.5 mEq of elemental calcium/g)	1 gram over 4 hours	2 grams over 4 hours	1-2 grams in 100 mLs In D5W or NS	2 grams in 50 mLs In D5W or NS
<b>Calcium Chloride</b> (273mg or 13.6mEq of elemental calcium/g)	1 gram over 4 hours	2 grams over 4 hours	1-2 grams in 100 mLs In D5W or NS	2 grams in 50 mLs In D5W or NS
<b>Magnesium Sulfate</b>	1 gram/hr	1 gram/hr	1-4 grams in 100-250 mLs In D5W or NS	2 grams in 50 mLs In D5W or NS
<b>Phosphate</b> Potassium or Na Phosphate	15 mmol over 6 hours 30 mmol over 8 hours	7.5 mmol/hr	15-30 mmol in 250-500 mLs In D5W or NS	30 mmol in 250 mLs In D5W or NS
<b>Potassium</b>  Cardiac monitor required for rate above 10 mEq/ hr.	Peripheral 10 mEq/hr  Central 10 mEq/hr	Peripheral 10 mEq/hr  Central 20 mEq/hr (For severe hypokalemia)	10-20 mEq in 250 mLs 30-40 mEq in 500 mLs In D5W or NS  Maintenance Infusion 40 mEq in 1000 mLs	Peripheral 10 mEq in 100 mLs  Central 20 mEq in 100 mLs  In D5W or NS
*This tool is utilized only as a guideline, any deviation from the recommendations will be approved by the patient care team.				

**Medical Surgical / Rehabilitation Areas**  
(Medical Surgical, Rehabilitation)

The following are standard recommendations:

	<b>Standard Infusion rate</b>	<b>Maximum Rate</b>	<b>Standard Concentration</b>	<b>Maximum Concentration</b>
<b>Calcium Gluconate</b> (90mg or 4.5 mEq of elemental calcium/g) <b>Calcium Chloride</b> (273mg or 13.6mEq of elemental calcium/g)	Patients in need of IV Calcium preparations should be transferred to a monitored unit			
<b>Magnesium Sulfate</b>	1 gram/hr	1 gram/hr <b>Not to exceed 6 grams in 24 hours</b>	1-4 grams in 100-250 mLs In D5W or NS	2 grams in 50 mLs In D5W or NS
<b>Phosphate</b> Potassium or Na Phosphate	15 mmol over 6 hours 30 mmol over 8 hours	5 mmol/hr	15-30 mmol in 250-500 mLs In D5W or NS	30 mmol in 250 mLs In D5W or NS
<b>Potassium</b>  Cardiac monitor required for rate above 10 mEq/ hr.	Peripheral 10 mEq/hr  Central 10 mEq/hr	Peripheral 10 mEq/hr  Central 20 mEq/hr (For severe hypokalemia)	10-20 mEq in 250 mLs 30-40mEq in 500 mLs In D5W or NS  Maintenance Infusion 40 mEq in 1000 mLs	Peripheral 10 mEq in 100 mLs  Central 20 mEq in 100 mLs  In D5W or NS

\*This tool is utilized only as a guideline, any deviation from the recommendations will be approved by the patient care team.