مؤسسة مستشفى سرطان الأطفال-مصر Children's Cancer Hospital Foundation - Egypt 57357	**Policy Name**: **Management Of Concentrated Electrolytes**

Prepared By: إعداد:	Dr. Mohammed Nagy– Pharmacy Director Dr. Salwa Sayed – Section Head decision support	**Document Code: IPP-PSSD-010**	
		Issue Date:	01.09.2015
Reviewed By: مراجعة:	Dr. Hend Alsayed- Senior supervisor pharmacy	**Issue No.:**	04
		No# of Pages:	05
CPID Director: مدير ادارة تحسين الاداء المستمر:	Dr. Shaimaa El-Meniawy – CPID Director	**Review Date:**	01.01.2023
		Next Review Date	31.12.2025
Approved By: موافقة:	Dr Moataz Elzemaity – CMO	**No# of Copies:**	01-DMS 01-Depart.
Authorization By: إقرار:	Dr. Sherif Abouelnaga – CEO 57357 Group	**Department:** **Pharmaceutical Service and Science**	

1.0 Change of policy

1.1 No changes

2.0 Purpose

2.1 To reduce the risk of inappropriate use of concentrated electrolytes within the Children's Cancer Hospital.

3.0 Policy

3.1 Policy statement:

3.1.1 It is the policy of CCHE to establish additional controls on the management of concentrated electrolytes.

3.2 Scope:

3.2.1 All CCHE patient care areas and central pharmacy.

3.3 Responsibilities

3.3.1 All healthcare personnel.

4.0 Definitions /abbreviations:

4.1 **CCHE:** Children Cancer Hospital – 57357 Egypt
4.2 **CPID:** Continuous Performance Improvement Department
4.3 **MMU:** Medication Management & Use
4.4 **BMT:** Bone Marrow Transplant.
4.5 **ED:** Emergency Department.
4.6 **ISMP:** Institute for Safe Medication Practices.
4.7 **IPSG:** International Patient Safety Goals.

4.8 MMS: Medication Management & Safety

5.0 Procedure:

5.1 Concentrated Electrolytes:

5.1.1 General guidelines:

5.1.1.1 Concentrated electrolytes include potassium chloride [equal to or greater than 2 mEq/mL concentration], sodium chloride [greater than 0.9%concentration]and hypertonic saline (3%), calcium chloride (equal to or greater than 100mg/ml), calcium gluconate equal to or greater than 100mg/ml) and magnesium sulfate (equal to or greater than 0.5 gram/5ml), sodium bicarbonate ampoules.

5.1.2 Storage:

5.1.2.1 For critical care areas concentrated electrolytes will be kept in unit stock and are accessible only qualified and trained charge nurses (ICU, OR, Step-down, BMT, ER, and Crash carts).

5.1.2.2 Clearly labeled “concentrated electrolyte- Dilute before administration orang label” and segregated from other medications.

5.1.2.3 **For Other areas:**

5.1.2.3.1 Concentrated electrolytes will be supplied by the central pharmacy and clearly labeled “concentrated electrolyte -Dilute before administration orang label”.

5.1.3 Recording:

5.1.3.1 Documentation of regular Refills and dispensing of concentrated electrolytes ampoules from crash carts and Pyxis will follow CCHE policies.

5.1.3.2 For other areas dispensing will be according to the routine dispensing process.

5.1.3.3 Concentrated electrolyte should be dispensed with physician order on Cener which full integrated with Oracle and Pyxis.

5.1.3.4 In case of emergency in critical areas the nurse could be withdraw as override and must be enter on Cerner by physicians during shift and solve override.

5.1.3.5 All override report discussed daily with nursing department.

5.1.4 Prescribing:

5.1.4.1 Concentrated electrolytes are indicated in the treatment of electrolyte deficiency states when oral replacement is not feasible.

5.1.4.2 **The prescription must state:**

5.1.4.2.1 Quantity of electrolytes required (mmols or mEq)

5.1.4.2.2 The form (e.g., Potassium chloride)

5.1.4.2.3 The diluents to be used
5.1.4.2.4 The total volume to be prepared in
5.1.4.2.5 The period to be infused over or the infusion rate.

5.1.5 **Preparation:**

5.1.5.1 Commercially prepared ready to use diluted solutions should be used when possible.

5.1.5.2 Where there is a requirement for an electrolyte in a dilution that is not available in a commercially prepared ready to use diluted form, the electrolyte will be dispensed only by the pharmacy approval and solution prepared under supervision of a Clinical Pharmacist, according to the patient's need.

5.1.6 **Labeling:**

5.1.6.1 All concentrated electrolytes should be clearly labeled with high alert label & "concentrated electrolyte- Dilute before administration orang label".

5.1.7 **Restrictions:**

5.1.7.1 A second practitioner must always check for correct product, dosage, dilution, mixing and labeling during the preparation of or selection of concentrated electrolytes solutions and the actual administration of the potassium infusion including identifying the patient, checking against the prescription, the device for administration and rate of administration.

5.1.7.2 Any concerns must be addressed to the prescriber or may be discussed with a pharmacist.

5.2 Special Considerations for Potassium Chloride:

5.2.1 Potassium Chloride is the most used electrolyte in CCHE.

5.2.2 Potassium Chloride diluted solutions are regularly supplied by central pharmacy to non-critical care areas.

5.2.3 **Prescribing: The prescription must state:**

5.2.3.1 Quantity of electrolytes required (mEq)
5.2.3.2 The form (e.g., Potassium chloride).
5.2.3.3 The diluents to be used.
5.2.3.4 The total volume to be prepared in.
5.2.3.5 The period to be infused over or the infusion rate.
5.2.3.6 Other prescription elements (see Prescription review policy).

5.2.4 **Prescription review: Refer to Prescription review policy.**

5.2.5 **Order Entry:**

5.2.5.1 Use Cerner IV sets for maintenance & correction.

5.2.5.2 In order to ensure effective morning batch report:

5.2.5.2.1 **Check Cerner order for:**

- Dispense location: Inpatient pharmacy.
- Volume entered should be of "500 ml" units.

5.2.5.2.2 **In case of order modification:**

- Discontinue old order.
- Enter new order (you can use the "copy" tool).

5.2.6 **Morning batch for daily maintenance solutions (refills):**

5.2.6.1 Labels are automatically printed at (2:30 pm) and every thirty minutes for any modified or new orders.

5.2.7 **Correction solution requisition:**

5.2.7.1 When Correction needed it send to floor from central pharmacy.

5.2.8 **Storage in pharmacy in the floor:**

5.2.8.1 Round pharmacist reviews the received solutions (quantities & beyond use dates).

5.2.8.2 Reviewed infusions should be immediately stored in refrigerator, arranged & used according to: "first prepared first used"(according to preparation date).

5.2.8.3 Unused bottles are return every morning to IV check.

5.2.9 **Preparation & storage of Potassium Chloride solutions:**

5.2.9.1 Potassium Chloride solutions are prepared in I.V Mix Area on daily basis and stored in refrigerator.

5.2.9.2 Appropriate labeling is done &date of preparation of preparing personnel signature is added.

5.2.9.3 IV prep / Check ensures appropriate labeling & storage (immediate refrigeration).

5.2.10 **Distribution:**

5.2.10.1 Round/ward Pharmacists handle their requirements from Potassium Chloride solutions to the IV Prep.

5.2.10.2 Returns or Unused Concentrated electrolytes are returned DAILY to the IV Check.

5.2.10.3 Needs and Returns are revised according to the date of preparation and then they are sent to the floors according to their needs.

5.2.10.4 If extra doses are required, they are sent to the IV Mix to be prepared

5.2.11 **Restrictions:**

5.2.11.1 Initial potassium therapy should not involve glucose infusions, because glucose may cause a further decrease in the plasma-potassium concentration due to a shift in potassium into cells.

5.2.11.2 Potassium should not be given in established hyperkalemia and should be used with extreme caution and close monitoring - where there is renal impairment or coincidental administration of drugs that may cause hyperkalemia.

5.2.11.3 Potassium must under NO circumstances be injected into a hanging bag, regardless of whether it is in use or prior to use.

5.2.11.4 A second practitioner must always check for correct product, dosage, dilution, mixing and labeling during the preparation of or selection of high strength potassium chloride solutions and the actual administration of the potassium infusion including identifying the patient, checking against the prescription, the device for administration and rate of administration.

5.2.11.5 Any concerns must be addressed to the prescriber or may be discussed with a pharmacist.

6.0 References:

6.1 ISMP's High-Alert Medications List.

6.2 Critical Care Drug Reference Card.

7.0 Appendices:

7.1 Related Forms:

7.1.1 N/A

7.2 Related Policy:

7.2.1 Medication Management Program

7.2.2 High alert medication policy

7.3 Related Standards:

7.3.1 Joint Commission Accreditation Standards – IPSGS.

7.3.2 GAHAR Standards MMS. 06 , 11, 12, 13, 14, 15 and 16

7.4 Attachments

7.4.1 N/A