MEDICATION ADMINISTRATION: INTRAVENOUS PHENYTOIN (DILANTIN)

PURPOSE

Describes the method of administering intravenous (IV) phenytoin to reduce occurrence of precipitation.

POLICY STATEMENTS

Intravenous administration of phenytoin (Dilantin) requires a dedicated administration set of normal saline (NS) connected directly to the intravenous (IV) device.

In special circumstances (e.g. single lumen PICC with TPN), a new peripheral IV may be necessary; this is to be decided on a case-by-case basis.

As soon as possible, intravenous administration of phenytoin should be converted to oral administration.

Due to the risk of precipitate formation, the use an in-line 0.22 micron filter when infusing intravenous phenytoin is highly recommended.

Administration sets disconnected/reconnected from patient are replaced every 24 hours.

SITE APPLICABILITY

All clinical areas.

INDICATIONS

- Used in the treatment of status epilepticus and epileptic seizures.
- Used in the treatment of ventricular arrhythmias in persons refractory or hypersensitive to conventional therapy.

CONTRAINDICATIONS

Phenytoin is cardiotoxic and is contraindicated in patients with a history of cardiac problems, such as sinus bradycardia, sino-atrial block, second and third degree A-V block, or patients with Adams-Stokes syndrome.

PRECAUTIONS

- The extreme pH (alkalinity) of the parenteral formulation can cause venous irritation and extensive tissue damage, frequent visualization of the IV site is required.
- Phenytoin is unstable in solution and there have been reports of it blocking PICC and peripheral IV lines.
- Phenytoin is incompatible with dextrose containing solutions and will precipitate immediately if in contact with any dextrose solution.
- Eye protection should be worn when preparing and administering this drug as inadvertent splashing of Phenytoin in the eyes will result in a chemical burn which could scar the cornea and could lead to blindness.
- Phenytoin is identified as a Hazardous Drug and needs to be handled according to the Hazardous Drugs Handling Policy PTN.02.021.1

ADVERSE REACTIONS AND INTERVENTIONS

- If extravasation occurs stop the medication infusion at once and leave the cannula in place.
- Refer to Extravasation Guidelines.

EQUIPMENT

- Personal Protective Equipment (PPE) as outlined in Hazardous Drugs Handling Policy
  - Phenytoin vial
  - Vial of Normal Saline (NS)
  - Appropriate sized syringe with large bore blunt needle
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- 2 x 10 mL pre-filled NS flush syringes (1 for pre-infusion, 1 for post-infusion)
- 2 x dead end caps
- Primed IV administration set with in-line 0.22 micron filter
- Syringe infusion module

### PROCEDURE | Rationale
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1. **CHECK** chart for prescriber's order for Phenytoin specifying dosage, frequency of administration, and indication. | Medication orders that meet safe prescribing practices promote patient safety.
2. **ASSEMBLE** equipment. | Facilitates completion of task in timely manner.
3. **PERFORM** hand hygiene and **DON** PPE. | Routine infection control practices; reduces transmission of microorganisms.
4. **PREPARE** Phenytoin: dilute to a concentration of 10 mg/mL using Normal Saline. **DO NOT MIX WITH ANY OTHER DRUGS OR SOLUTION.** | Prepare dilution just prior to administration, observe closely for precipitate/particulate matter, do not administer if present.
5. **IDENTIFY** patient and **EXPLAIN** procedure. **VERIFY** that the patient name and medical record number on all medication labels match the same information on the patient ID band. | Failure to correctly identify patients prior to procedures may result in errors. 2 unique client identifiers required to verify correct patient. Reduces child and family's anxiety. Evaluates and reinforces understanding of previously taught information and confirms consent for medication administration.
6. **DISCONNECT** maintenance line and cap end with dead-end cap. **SCRUB** needless connector with chlorhexidine/alcohol swab for 30 seconds and allow to dry for 1 minute. | Maintains sterility.
7. **FLUSH** device with NS using turbulent flush method (1 mL for PIV, 3 – 10 mLs for central lines/PICCs as tolerated). | Turbulent flush method is best practice for clearing vascular access devices
8. **CONNECT** NS/Phenytoin line. Infuse as ordered (rate not to exceed 1 mg/kg/minute and not to exceed 50 mg/minute) and flush as per IV medication administration policy. | 
9. **DISCONNECT** NS line at completion of infusion and cap end with dead-end cap. **SCRUB** needless connector with chlorhexidine/alcohol swab for 30 seconds and allow to dry for 1 minute. | Maintains sterility.
10. **FLUSH** device with NS using turbulent flush method (1mL for PIV, 3-10 mLs for central lines/PICCs as tolerated). | Turbulent flush method is best practice for clearing vascular access devices
11. **RECONNECT** maintenance line. | 
12. **REPLACE** administration sets that have been disconnected/reconnected to patient every 24 hours. | Per CDC (Centre for Disease Control) and INS (Infusion Nursing Society) standards.

### REFERENCES
CM.04.41  BC Children’s Hospital Child & Youth Health Policy and Procedure Manual  Effective Date: Jan 18, 2016

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DOCUMENT drug administration on medication administration record (MAR).

REPORT any catheter occlusions in PSLS.

REFERENCES
