EXTRAVASATION, MANAGEMENT OF

PURPOSE: To outline the management of the patient when extravasation, or suspected extravasation, has been identified.

SUPPORTIVE DATA: Extravasation is a potential complication of intravenous (IV) therapy and is defined as leakage of intravenous fluid or medication out of the vein. Serious tissue damage may occur, particularly with vesicants. It is also a risk with other medications, including commonly used medications such as vasopressors and contrast media.

Signs of extravasation include:
- Lack of blood return
- An infusion that has slowed or stopped
- Erythema and pain at/or surrounding the IV site

This standard covers the care of extravasation of non-chemotherapy medication. Chemotherapy Certified Nurses manage extravasation of chemotherapy agents according to the *Extravasation Management by Chemotherapy Certified Registered Nurses Standardized Procedure*. NICU nurses manage extravasation according to the *Guidelines for NICU Use of Subcutaneous Hyaluronidase to Treat Infiltration with Skin Injury.*

ASSESSMENT:

1. Assess the IV site and surrounding area upon identification of extravasation and a minimum of every 2 hours for 72 hours:
   - Swelling
   - Induration
   - Redness, bruising, or other discoloration
   - Skin translucency
   - Skin cool to touch
   - Pain
   - Itching
   - Circulatory impairment of distal area
   - Drainage
   - Streak formation
   - Palpable venous cord
   - Ulceration
   - Necrosis

MANAGEMENT:

2. Do the following immediately upon identification of an extravasated medication which **requires** an antidote (see attached table):
   - Have another RN call the provider immediately for possible administration of antidote
   - Stop IV fluid and medication (do not remove IV catheter at this time)
   - Disconnect tubing from the IV catheter
   - Attach 6 mL syringe to IV catheter hub
   - Apply tourniquet above the site of extravasation
   - Aspirate and check for blood return
   - If there is blood return:
     - Slowly aspirate 3-5 mL of blood and discard
     - Remove tourniquet
     - Flush catheter with 0.2 mL normal saline to keep the catheter open for administration of antidote by the provider
     - Remove catheter after antidote has been administered (if it has been given)
   - If there is no blood return:
     - Slowly aspirate as much of the infiltrated fluid as possible

- Remove tourniquet
- Remove IV catheter

3. Do the following immediately upon identification of extravasated medication which does **NOT** require an antidote:
   - Stop IV fluid and medication (do not remove IV catheter at this time)
   - Disconnect tubing from IV catheter
   - Attach 6 mL syringe to IV catheter hub
   - Aspirate and check for blood return
   - Remove 3-5 mL of blood or as much of the infiltrated fluid as possible if no blood return
   - Remove IV catheter
   - Report to the provider
4. Do not apply pressure to the IV site.
5. Outline the affected area with a pen.
6. Elevate the affected limb.
7. Remove constricting bands that may act as a tourniquet (e.g., armbands, blood pressure cuff, or tape).
8. Apply heat or cold therapy as ordered
   - If antidote is indicated, apply heat or cold <u>after</u> antidote has been given
9. Cover the affected area with an occlusive sterile dressing
10. Keep the affected limb elevated for 24-48 hours.

PATIENT/CAREGIVER EDUCATION:

11. Instruct on the following:
    - Inform nurse of change in appearance or worsening of pain/itching
    - Elevate extremity as instructed
    - Purpose of applying heat/cold
    - Discharge teaching as applicable

REPORTABLE CONDITIONS:

12. Notify the provider immediately for the following:
    - Occurrence of extravasation
    - Name of extravasated medication
    - Condition of extravasation site
    - Worsening of extravasation site

ADDITIONAL STANDARDS:

13. Refer to the following as indicated:
    - Intravenous Therapy
    - Wound Management/ Vacuum Assisted Closure (VAC) Therapy

DOCUMENTATION:

14. Document in accordance with documentation standards.
15. Enter a nursing note and include the following:
    - Anatomic location
    - Generic name and volume of medication which extravasated
    - Name of provider notified
    - Treatment administered
    - Patient education/Follow-up instructions
16. Document in iView in Lines & Devices and Provider Notification sections
17. Complete Safety Intelligence Report.
18. Take photograph of affected area.

Initial date approved:	Reviewed and approved by:	Revision Date:
12//2022	Professional Practice Committee Nurse Executive Committee Attending Staff Association Executive Committee	12/23

RECOMMENDED TREATMENT FOR EXTRAVASATION
(All interventions require a provider's order)

Medications	**Recommended Antidote+**	**Recommended Compress*** **
Dobutamine Dopamine Epinephrine Isoproterenol Norepinephrine Phenylephrine Vasopressin	Phentolamine 1 mg/mL solution (reconstitute 5 mg vial with 5 mL NS) given as 5 mL subcutaneous injection	Dry, warm
Amiodarone Calcium salts** Magnesium salts** Mannitol** Phenytoin Potassium salts** Sodium salts**	Hyaluronidase 15 unit/mL (dilute 0.1 mL from 150 unit/mL vial with 0.9 mL NS) given as 1 mL subcutaneous injection	Dry, warm
Aminophylline Contrast media** Dextrose** Nafcillin Parenteral nutrition**	Hyaluronidase 15 unit/mL (dilute 0.1 mL from 150 unit/mL vial with 0.9 mL NS) given as 1 mL subcutaneous injection	Cold
Not otherwise listed above	None	Cold

**Only when at hyperosmolar concentrations

+When ordered, antidotes are recommended to be administered as soon as possible and *before* application of thermal compresses.
Antidotes given as subcutaneous injection should be administered as multiple subcutaneous injections approximately one-half inch apart to include the entire affected area (a clock pattern of 2, 4, 6, 8, 10, and 12 is suggested).

***When ordered, compresses are recommended to be applied for 60 minutes following the extravasation, then for 20 minutes every 6 hours for 48 hours.