


<b>Name of Policy:</b> <u>Administration of Continuous Intravenous Infusions</u> <b>Policy Number:</b> 3364-110-05-02 <b>Department:</b> Nursing Service <b>Approving Officer:</b> AVP Patient Care Services/CNO <b>Responsible Agent:</b> AVP Patient Care Services/CNO <b>Scope:</b> The University of Toledo Medical Center (UTMC)	  <b>Effective Date:</b> 3.27.2021 <b>Initial Effective Date:</b> 8/1981
<input type="checkbox"/> New policy proposal <input type="checkbox"/> Major revision of existing policy	
<input checked="" type="checkbox"/> Minor/technical revision of existing policy <input checked="" type="checkbox"/> Reaffirmation of existing policy	

### (A) Policy Statement

Registered Nurses (RN's) may administer Intravenous (IV) Medications in accordance with the following guidelines. It is the responsibility of the RN administering the medication to utilize unit resources and the Pharmacy Department for specific methods of administration or guidelines in giving specific drugs. Strict aseptic techniques and needleless systems will be utilized.

### (B) Purpose of Policy

To provide guidelines for a safe and therapeutic administration of continuous IV infusions

### (C) Procedure

1. The Nursing Service policies and procedures pertaining to the Administration of IV Therapy, Administration of Medications, specific policies regarding specialized types of vascular access devices (i.e. Broviac, Hickman, etc.), and any pertinent specialty area guidelines should be adhered to when administering IV medications.
2. When there are requests for variance from these guidelines, it is the responsibility of the RN to use discretion in each patient situation and to utilize all existing resources, i.e. Pharmacy and other specialty area personnel in the determination of whether the medication can be safely administered.
3. For adult patients, Pharmacy will indicate in Admin-Rx those medications requiring filters. These cues are also noted in the guardrails of the smart pumps for continuous infusions. Macro-filtered needles must be used to draw up medications from ampules which otherwise would not be filtered on administration.
4. IV medications requiring close observation, frequent monitoring of vital signs, or having high concentrations or pH extremes are only to be administered in areas that provide the availability of necessary monitoring equipment, and by RNs knowledgeable in administration of that specific drug. *See attached chart.*
5. The following IV medications require a second RN to double check administration: all blood products, chemotherapy, patient controlled analgesic medications, and investigational medications.
6. Appropriate precautionary measures should be taken when the specific medication or administration is unfamiliar or unusual. Clarification as needed should always be obtained from the Pharmacist or other existing resources.
7. RN's may administer I.V. medications via peripheral, central and PICC lines. The RN is responsible for

assuring adequate patency and placement before administering IV medications.

- A. IV medications may be administered peripherally via the following types of needles and catheters:
    1. Scalp vein or butterfly needles.
    2. Plastic or teflon over the catheter needles (jelco-caths, angiocaths, etc.).
    3. Plastic through the needle catheters (intracaths).
  - B. IV medications may be administered via the following types of central lines:
    1. Single lumen catheters, multiple lumen and pulmonary artery catheters (i.e. Arrow triple lumens, Hickmans and Broviacs, Groshong catheters, etc.).
8. The following methods of administration may be employed:
- A. IV continuous infusion.
  - B. IV admixture (medication added to the primary IV).
  - C. IV piggyback and other secondary IV infusions connected to a primary IV solution.
  - D. IV push or bolus injection via the Y-site of an IV line or intermittent IV line (INT).
  - E. IV push chemotherapy or one-time dose medications such as Lasix and SoluMedrol (insert a syringe with the medication into a Y-site or INT, pushing the medication). Patency of the IV must first be established by flushing the line with 5ml's of Normal Saline. After administration of medication, line must be flushed with 5 ml's of normal saline unless a continuous IV fluid is running.
  - F. Push-pump method (mechanical syringe administration).
9. The following medications may be administered as primary infusions. These solutions may be administered by gravity drip with the RN's discretion when ordered at a Keep Vein Open (KVO) rate post-procedure, and/or when precise fluid administration is not required.
- A. Blood and blood products.
  - B. Dextrose, Saline, and Lactated Ringers solutions.
10. The following solutions may be administered as primary solutions using the assistance of a mechanical volume or rate controller. Intravenous caloric solutions:
- A. Hyperalimentation (All-In-One TPN) solutions (Dextrose solutions of greater than 20% concentration must be run via central lines whereas solutions of 10% or less may be run through a peripheral IV or midline PICC).
  - B. Lipid or fat emulsion solutions.
  - C. Glucose, fructose, or concentrated dextrose solutions.
  - D. Amino acids (amino acid solutions ranging from 3.5 to 4.25% may be administered through peripheral lines).
11. The following medications may be administered as additives to primary IV infusions (500-1000 ml for adult patients).
- A. Electrolyte replacement solutions (in dilute solutions). Examples: KCL, calcium compounds, Magnesium Sulfate, NH<sub>3</sub>Cl, NaHCO<sub>3</sub>.
  - B. Antibiotics or anti-infectives. Examples: Penicillin in a liter of solutions.
  - C. Vitamin and mineral solutions. Examples: Vitamin C or B complex.
12. The following medications should be administered as a primary infusion only with the assistance of a mechanical volume or rate controller using the correct setting for the level of care (med-surg, pediatrics, critical care). Additionally, guardrails on the smart pumps should be used when available. These medications should not be administered as piggyback medications. These primary solutions should not be used to deliver a bolus of medication unless the bolus feature and guardrails of the smart pumps are utilized (exception: PCA).
- A. Vasopressive agents
  - B. Aminophylline
  - C. Anticoagulants/Thrombolytics/ Heparin

- D. Insulin
  - E. Morphine sulfate or other narcotics
  - F. Patient controlled analgesia (example: PCA)
  - G. Chemotherapy
13. The following medications may be administered as primary or secondary infusions with the assistance of a mechanical volume or rate controller using the correct setting for the level of care (med-surg, pediatrics, critical care). Additionally, guardrails on the smart pumps should be used when available.
- A. NaHCO<sub>3</sub>, Antibiotics, antifungals, anti-infectives
  - B. Steroids or other hormonal replacements
  - C. Vitamin and mineral replacement solution
  - D. Electrolytes
  - E. Antihypertensive agents (secondary infusion)
  - F. Uterine contractants
  - G. Plasmanate
  - H. Immunosuppressants
  - I. Anticonvulsants
  - J. Lasix may be administered by primary or secondary infusion, but the preferred method is by IV bolus or IV push
  - K. Antibiotics
14. The following medications may be administered by IV bolus or IV push:
- A. Digoxin as a maintenance dose for a patient who cannot be given liquid or tablet form.
  - B. Diuretics Example: Mannitol, Lasix
  - C. Steroids Example: Decadron, Solu-Medrol
  - D. Narcotics Example: Morphine Sulfate, Demerol
  - E. Antianxiety or sedatives Example: Ativan, Droperidol, Benadryl
  - F. Antihypertensives Example: Hydralazine, Vasotec
  - G. Sedation for procedures Example: Versed
  - H. Narcotic antagonists Example: Narcan
  - I. Benzodiazepine Reversal Antagonists Example: Romazicon
  - J. Hypoglycemics and glycemics Example: Insulin, Dextrose 50% in 50ml syringe
  - K. Anticoagulants/coagulation enhancers Example: Heparin, Vitamin K (adults only)
  - L. Select antihypertensives for routine maintenance dosing therapy when oral therapy is not feasible. Example: Vasotec, Lopressor, Labetalol, Hydralazine  
Telemetry monitoring is required when IV Beta blockers (e.g. Lopressor, Labetalol) are administered.
  - M. Antiarrhythmics
  - N. Antiemetics Example: Droperidol, Ativan
  - O. Chemotherapy Example: Adriamycin
  - P. Diagnostic Agents Example: Methylene Blue
15. It is highly recommended that medications that are hypertonic, caustic or have a very high or low pH be administered via a central line, if clinically possible. Exceptions to this include chemotherapy and Amphotericin B. Medications demonstrating these properties that must be run via a peripheral line must be closely monitored for infiltration.

<p><b>Approved by:</b></p> <p>/s/ _____          Monecca Smith, MSN, RN          AVP Patient Care Services/Chief Nursing Officer</p> <p><i>Review: Policy &amp; Standard Committee, 2/11, 3/15, 3/15, 3/18, 3/21</i>  <i>Revision Completed by: Nancy Gauger, MSN, RN</i></p>	<p><b>Review/Revision Date:</b></p> <p>1982 1989 1/1998 7/24/2008          1983 7/1990 7/1999 8/31/2009          1984 1/1993 11/2000 3/2/2011          1985 1993 4/2001 3.27.15          1986 2/1995 5/2001 3.15.18          1987 6/1996 3/2003 3.15.21          1988 1/1997 6/2005</p>
	<p><b>Next Review Date:</b> 3/2024</p>
	<p><b>Policies Superseded by This Policy:</b> 5-02</p>