



# CONWAY MEDICAL CENTER

## POLICY

When in hard copy form, refer to Policy Manager to validate this as the most current revision

|               |   |                 |              |
|---------------|---|-----------------|--------------|
| POLICY TITLE: | Guidelines for Standard Intravenous Infusion Concentrations |                 |              |
| ISSUED BY:    | General Nursing Services                                    | REFERENCE #:    | GNA-3.96-POL |
| APPROVED BY:  | Vice President of Patient Care Services                     | EFFECTIVE DATE: | August 2003  |

**SCOPE:** CMC Physicians, Pharmacy, Nursing Department

### **POLICY STATEMENT:**

To provide guidelines for the safe storage, handling and administration of medications that have a high risk of causing significant patient harm if they are not used correctly.

### **Policy Guidelines:**

- I) The Pharmacy and Therapeutics Committee and the Critical Care Committee have undertaken the task of identifying and standardizing the number of medication drips available for intravenous administration and the required patient location.
- II) To obtain a patient specific dose the Physician should adjust the rate of the infusion as opposed to the concentration, thus keeping the concentration of the medication standardized.
- III) Only in emergencies should IV infusions be prepared outside of the sterile preparation area in the pharmacy.
- IV) Orders for intravenous infusions are sent to the Pharmacy and the standard intravenous infusion is prepared and delivered to the floor for administration.
- V) In cases when fluid restriction is required: solutions may be double concentrated. Pharmacy is to label all double concentrated solutions as such utilizing precautionary labeling and including the final concentration of the solution in the comment section of the label.
- VI) Utilize hospital approved electronic medication reference (link on intranet) for administration information.
- VII) In chart below **DC** means "Double Concentrated."

| Drug                       | Standard | Base Solution | Concentration  |
|----------------------------|----------|---------------|--|
| Acetylcysteine (Acetadote) |          | D5W           | Weight based and given in 3 steps per protocol ( <b>Protocol #3303</b> ) |



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| Drug                       | Standard   | Base Solution          | Concentration  |
|----------------------------|--|------------------------|--|
|                            |  |                        | ED/ICU ONLY  |
| Amiodarone<br>(Cordarone)  | Load 150mg/100ml<br>Maintenance<br>900mg/500ml         | D5W (non-PVC)          | 1.5mg/ml ( <b>Protocol #359</b> )<br>1.8mg/ml<br>ED/ICU/PCU/CCL ONLY                                       |
| Diltiazem<br>(Cardizem)    | 125mg/125ml  | D5W                    | 1mg/ml ( <b>Protocol #326</b> )<br>ED/ICU/PCU/CCL/Tele limited use-see<br>Protocol (Tele Bolus / ICU Drip) |
| Dobutamine<br>(Dobutrex)   | 250mg/250ml<br>500mg/250ml <b>DC</b>                   | D5W<br>(DC non-premix) | 1000mcg/ml<br>ED/ICU/PCU/CCL Titrated Dose<br>Telemetry – Med-Surg - Renal Dose                            |
| Dopamine                   | 400mg/250ml<br>800mg/250ml <b>DC</b>                   | D5W<br>(DC non-premix) | 1600mcg/ml<br>ED/ICU/PCU/CCL Titrated Dose<br>Telemetry - Med-Surg - Renal Dose                            |
| Epinephrine<br>(Adrenalin) | 5mg/250ml  | D5W                    | 20mcg/ml ( <b>Protocol #365</b> )<br>ED/ICU/CCL ONLY   |
| Tirofiban<br>(Aggrastat)   | 12.5mg/250ml   | (Premixed)             | 50 mcg/ml ( <b>Protocol #334</b> )<br>ED/ICU/PCU/CCL/Telemetry ONLY  |
| Esmolol<br>(Brevibloc)     | 2.5g/250ml<br>2500mg/250ml                             | D5W<br>(Premixed)      | 10 mg/ml<br>ED/ICU/CCL ONLY  |
| Fenoldopam<br>(Corlopam)   | 10mg/250ml   | NS                     | 40mcg/ml ( <b>Protocol #364</b> )<br>ED/ICU/PCU/CCL ONLY   |
| Fentanyl                   | 2.5mg/100ml<br>2500mcg/100ml<br>2500mcg/50ml <b>DC</b> | D5W                    | 25 mcg/mL<br>ED / ICU ONLY/Palliative Care Patient   |
| Heparin                    | 25,000 units/500 ml                                    | D5W<br>(Premixed)      | 50 units/ml ( <b>Protocol #306</b> )   |
| Insulin<br>Regular         | 100 units/100ml  | NS                     | 1 units/ml<br>ED/ ICU/PCU/L&D ( <b>Protocol #397</b> )   |
| Isoproterenol<br>(Isuprel) | 2 mg/500 ml  | D5W                    | 4mcg/ml<br>ED/ICU/CCL ONLY   |
| Labetalol                  | 200mg/200ml  | D5W/NS                 | 1mg/ml ( <b>Protocol #380</b> )  |



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| Drug                                | Standard                           | Base Solution        | Concentration  |
|-------------------------------------|------------------------------------|----------------------|--|
| (Normodyne)                         |                                    | (either)             | ED/ICU/PCU/CCL ONLY  |
| Lidocaine                           | 2g/500ml                           | D5W<br>(Premixed)    | 4mg/ml<br>ED/ICU/PCU/CCL ONLY  |
| Magnesium                           | 20 gram/500ml                      | Water<br>(Premixed)  | 40mg/ml ( <b>Protocol #3337</b> )<br>OB  |
| Midazolam<br>(Versed)               | 100mg/100ml<br>250mg/500ml         | D5W                  | 1mg/ml and 5mg/ml<br>ED/ICU/or Palliative Care patient                                 |
| Naloxone<br>(Narcan)                | 2 mg/500ml                         | D5W                  | 4 mcg/ml<br>ED/ICU GTT   |
| Nesiritide<br>(Natrecor)            | 1.5 mg/250ml                       | D5W                  | 6 mcg/ml ( <b>Protocol #358</b> )<br>ED/ICU/PCU/CCL/Tele ONLY                          |
| Nitroglycerin                       | 25 mg/250ml                        | D5W<br>(Premixed)    | 100 mcg/ml ( <b>Protocol #381</b> )<br>ED/ICU/PCU/CCL ONLY                             |
| Nitroprusside<br>(Nipride)          | 50mg/500ml                         | D5W                  | 100mcg/ml ( <b>Protocol #379</b> )<br>ED/ICU/CCL ONLY                                  |
| Norepinephrine<br>(Levophed)        | 8 mg/500ml<br>16mg/500ml <b>DC</b> | D5W                  | 16 mcg/ml ( <b>Protocol #366</b> )<br>ED/ICU/CCL ONLY                                  |
| Octreotide Acetate<br>(Sandostatin) | 600mcg/240ml                       | NS                   | 2.5 mcg/ml ( <b>Protocol #369</b> )  |
| Pantoprazole<br>(Protonix)          | 96mg/240ml                         | NS                   | 0.4 mg/ml<br>20ml = 8 mg   |
| Phenylephrine<br>(Neo Synephrine)   | 10mg/250ml                         | NS                   | 40mcg/ml ( <b>Protocol #383</b> )<br>ED/ICU/CCL ONLY                                   |
| Procainamide<br>(Pronestyl)         | 2g/500ml                           | NS                   | 4mg/ml<br>ED/ICU/PCU/CCL ONLY  |
| Propofol<br>(Diprivan)              | 1000mg/100ml                       | (Premixed<br>Bottle) | 10 mg/ml ( <b>Protocol #353</b> )<br>ER/ICU intubated patients only                    |
| Vasopressin<br>(Pitressin)          | 40 units/100ml                     | D5W                  | 0.4 units/ ml<br>ED/ICU ONLY   |
| Vecuronium<br>(Norcuron)            | 50mg/100ml                         | D5W/NS<br>either     | 500mcg/ml ( <b>Protocol #367</b> )<br>ED/ICU ONLY on sedated/intubated<br>patient only |
| Ibutilide<br>(Corvert)              | 1mg/60ml                           | D5W                  | ED/ICU/PCU/CCL ONLY<br>( <b>Protocol #3304</b> )<br>*0.01mg/kg Max dose 1mg/60ml*      |
| Nicardipine                         | 20mg/200ml                         | NS (premix)          | 0.1mg/ml ( <b>Protocol #3327</b> )   |



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|----------------------------|-----------------------------|---------------|---|
| (Cardene)                  | 25mg/250ml                  | (non-premix)  | ED/ICU/PCU ONLY   |
| Argatroban                 | 250mg/250ml                 | D5W           | 1000mcg/ml ( <b>Protocol #3341</b> )<br>ICU/PCU/Telemetry ONLY                        |
| Rocuronium (Zemuron)       | 500mg/500ml                 | NS            | 1000mcg/ml ( <b>Protocol #3370</b> )<br>ED/ICU/CCL on sedated, intubated patient ONLY |
| Dexmedetomidine (Precedex) | 200mcg/50ml<br>400mcg/100ml | NS            | 4mcg/ml ( <b>Protocol #3375</b> )<br>ICU ONLY   |

**RECORDS:** Various Facility Protocols

**REFERENCE STANDARDS:**

- I) Medicare Conditions of Participation: Pharmacy Services §482.25(b) Standard Delivery of Services.
- II) NIAHO: Medication Management (MM): MM.1 Management Practices

**REVISION/REVIEW HISTORY:**

| Date                   | Affected Section(s) | Summary of Changes ('Reviewed' or details of change)  |
|------------------------|---------------------|---|
|                        |                     | March 2004; April 2004; January 2005; October 26, 2006; November 19, 2007; June 19, 2008; October 6, 2010; February 2, 2011; April 11, 2011-KM, 12/10/12 jv/ap (L&D to Insulin)   |
| 10/03/2013<br>4/9/2014 | Reviewed All        | None (Dir Pharmacy/Dir. Clin Ed), P&T   |
| 7/1/2016               | Reviewed all        | Added "and the required patient location" to I); added statement about use of electronic reference for general administration information   |
| 9/19/2019              | Reviewed all        | Clarification added to Vecuronium about sedated/intubated; clarification added to Naloxone ED/ICU GTT. Reviewed by CCU Mngt and Clin Ed.; Pharmacist Review--additional mixture concentrations added to Dobutamine, Dopamine, Esmolol, Fentanyl, Versed, Levophed, Corvert, Cardene, and Precedex. Deleted Theophylline from chart. Removed the wording "intubated patients" from Precedex. |