

- The exam has 37 questions that have a single best answer.
- Items are multiple choice and true/false
- You will be given scratch paper and you may use a calculator that you bring with you
- No cell phone, iPad or tablet usage allowed.
- 85% competency is expected to pass the exam

Concepts to emphasize for the exam

1. Unapproved abbreviations
2. Basic dosage calculations and I.V. drip calculations
3. Knowledge of grams to milligrams, mg/ml calculations
4. Procedures to follow for adverse drug reactions and medication errors
5. Administration of medication down a nasogastric tube
6. Verifying properly written orders
7. Verifying, administering and charting medications
8. Assessments of I.V.s

Medications

1. Analgesics
2. Anticoagulants
3. Antibiotics
4. Digoxin, digitalis
5. Diuretics
6. Insulins
7. Opioid Antagonist

Medication Administration Guidelines

Practice the SIX (6) RIGHTS of Medication Administration

1. The right **PATIENT**
2. The right **MEDICATION**
3. The right **DOSE**
4. The right **ROUTE**
5. The right **TIME**
6. The right **DOCUMENTATION**

Guidelines For Preventing Medication Errors

1. When checking orders:
 - A. Make sure the order is clearly written
 - B. Make sure that abbreviations or symbols were not used
 - C. Make sure that there is an indication for all medication
 - D. Make sure that proper parameters are set for PRN medications
 - E. Make sure that route is identified

CLARIFY WITH PHYSICIAN if order is not written clearly

2. If a medication error occurs, report it and forward the completed forms to the appropriate manager and/or the Department of Risk management.

Formula for Calculation of I.V. Drip Rates

$$\text{Drops per minute} = \frac{\text{amount of ml/hour} \times \text{drip factor}}{60}$$

Example: 1000ml is to be given over 8 hours. The drip factor of the I.V. tubing is 15.

$$1000 \div 8 = 125(\text{ml/hour})$$



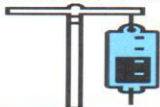



$$\frac{125 \times 15}{60} = \frac{1875}{60} = 31.25 \text{ gtts/min}$$

Non Approved Abbreviations

- “u” : write “Units”
- “IU”: write “International Units”
- “QD” : write “daily” or “every day”
- “QOD”: write “Every other day” or “q other day”
- “MS” or “MSO4”: write “Morphine Sulfate”
- “MGSO4”: write “Magnesium Sulfate”
- Decimal with trailing zeros : Ex. Write 7 mg not 7.0 mg;
- Decimal without preceding 0: Ex. Write 0.5 mg rather than .5 mg.

Pharmacology Exam Study Guide

HIGH ALERT MEDICATIONS

	Common Risk Factors	Proactive Approach
<p>1. Heparin/Coumadin</p> 	<p>Concentration and total volume is not clearly labeled</p> <p>Multi-dose containers</p> <p>Mix-ups due to different concentrations of heparin vials being kept in close proximity to each other on nursing units</p> <p>"U" used as an abbreviation for "units" in orders (can be confused with "0" leading to a 10-fold overdose)</p> <p>INR not checked prior to administration</p>	<p>**DOUBLE SIGNATURES REQUIRED**</p> <p>Standardized concentration and use of premixed solutions</p> <p>Single-dose containers utilized in the patient care areas</p> <p>All concentrations of Heparin stored in different areas of the Pyxis in each nursing unit</p> <p>"U" is not an approved abbreviation. MUST Spell out "units" when ordering heparin</p> <p>Documented INR prior to administration of Coumadin.</p>
<p>2. Insulin – All forms</p> 	<p>No dose-check system in place</p> <p>"U" used as an abbreviation for "units" in orders (can be confused with "0" leading to a 10-fold overdose)</p>	<p>**DOUBLE SIGNATURES REQUIRED**</p> <p>A check system is established per Policy and Procedure in which one nurse prepares the dose and another nurse reviews it to ensure accuracy</p> <p>"U" is not an approved abbreviation. MUST Spell out "units" when ordering insulin</p>
<p>4. Sodium Chloride solutions above 0.9%</p> 	<p>High concentration needs to be diluted to prevent hypernatremia. Too fast of an infusion can lead to pulmonary edema</p>	<p>Remove all high concentrated sodium chloride from patient care areas</p> <p>Premixed bags available</p>
<p>5. Magnesium Sulfate injection</p> 	<p>Serious, potentially life-threatening electrolyte disturbances. (e.g. Respiratory paralysis & bradycardia)</p>	<p>Remove all high concentrated sodium chloride from patient care areas.</p> <p>Premixed bags available</p>
<p>7. Ketorolac (Toradol®) IV</p> 	<p>Indicated for short term management of moderate to severe pain.</p> <p>Increased risk of serious cardiovascular thrombotic events, myocardial infarction, and stroke, which may be fatal. Patients with cardiovascular disease or risk factors for cardiovascular disease may be at greater risk.</p> <p>Increased risk of serious gastrointestinal adverse events including bleeding, ulceration, and perforation of the stomach and intestines which may be fatal.</p>	<p>KETOROLAC should be indicated for IM or oral administration. <u>IF IV administration is required:</u></p> <ul style="list-style-type: none"> - Limit treatment to 48 hours. - Check renal function. - Adjust dose based on renal function, age, and weight.
<p>8. Potassium Chloride injection</p> 	<p>Storage of concentrated potassium chloride outside the pharmacy stock</p> <p>Extemporaneous mixing of potassium chloride</p> <p>Requests for unusual concentrations</p>	<p>All potassium chloride has been removed from floor stock</p> <p>Use commercially available premixed IV solutions. Drug preparations performed in Pharmacy – unless emergency & Pharmacy closed</p> <p>Standardized the limit drug concentrations</p>

Heparin/Coumadin and Insulin Medications requires second signature on patient's MAR

Second signature signifies:

- Correct patient
- Correct Drug
- Correct dose / amount
- Correct route