



# Pharmacy is Therapeutic



<b>High Alert Medication</b>	<b>Medication Safety</b>	<b>Medication Safety</b>
<p data-bbox="310 267 527 295" style="text-align: center;"><b>Insulin U-500</b></p> <p data-bbox="94 337 745 560"><i>Insulin U-500 is a concentrated regular insulin product, available as 500 units/mL in a 20 mL vial. This is five times as concentrated as insulin U-100. It is used in patients with extreme insulin resistance, who may otherwise require multiple injections at once to receive an adequate insulin dose.</i></p> <p data-bbox="94 597 745 852"><i>Due to the concentrated nature of insulin U-500 and the potential risks associated with insulin use, the ISMP has issued recommendations for the safe use of this product. Prescribers should ensure the correct patient dose of insulin and write orders with <u>both the number of insulin units and milliliters of U-500</u> the patient requires.</i></p> <p data-bbox="94 889 745 950"><i>Example: U-500 Insulin 50 units (0.1 mL) subQ before each meal</i></p> <p data-bbox="94 987 745 1112"><u><i>Insulin U-500 should then be administered only in tuberculin syringes, since insulin syringes measure insulin units based on insulin U-100 (100 units/mL).</i></u></p> <p data-bbox="94 1149 745 1372"><i>The South Austin Medical Center Pharmacy will stock insulin U-500 for those patients that require it, based on insulin requirements and prior use. The pharmacy will dispense all doses of insulin U-500 in tuberculin syringes with the number of units of insulin and volume to be administered clearly labeled.</i></p>	<p data-bbox="947 199 1220 227" style="text-align: center;"><b>Medication Safety</b></p> <p data-bbox="831 267 1335 295" style="text-align: center;"><b>Avoid the use of ¼ Normal Saline</b></p> <p data-bbox="745 337 1417 657"><i>Hypotonic saline is used in patients with hypernatremic or hyperosmolar conditions. Hypotonic saline may also be used in elderly patients, where saline may increase fluid retention. However, the use of intravenous ¼ normal saline (0.225% sodium chloride) should be avoided and discouraged, as it is associated with significant risks due to its osmolarity of 77 mOsm/L, which is much lower than normal serum osmolarity of 280-300 mOsm/L.</i></p> <p data-bbox="745 695 1417 755"><u><i>Side effects/risks associated with hypotonic saline solutions:</i></u></p> <ul data-bbox="800 760 1228 917" style="list-style-type: none"> <li>○ Intracellular swelling</li> <li>○ Hemolysis</li> <li>○ Nausea, lethargy</li> <li>○ Cerebral edema</li> <li>○ Seizure, coma, and/or death</li> </ul> <p data-bbox="745 954 1417 1015"><u><i>Recommendations:</i></u> <i>consider the use of free water orally/per tube, if appropriate. Or use:</i></p> <ul data-bbox="800 1052 1396 1339" style="list-style-type: none"> <li>○ D5W (isotonic and provides free water)</li> <li>○ ½ NS (hypotonic at 154 mOsm/L, but less hemolysis)</li> <li>○ D5 ¼ NS (provides free water and sodium)</li> <li>○ If ¼ NS use is unavoidable, add electrolytes such as potassium chloride to increase osmolarity of the solution to 154 mOsm/L</li> </ul>	<p data-bbox="1577 199 1850 227" style="text-align: center;"><b>Medication Safety</b></p> <p data-bbox="1430 267 1997 328" style="text-align: center;"><b>Proper Use of proton pump inhibitors (PPI) for stress ulcer prophylaxis</b></p> <p data-bbox="1417 365 2007 490"><i>PPIs are frequently used to prevent stress ulcers in the inpatient setting. Patients most likely to be at risk of developing stress ulcers are typically ICU patients.</i></p> <p data-bbox="1417 527 2007 717"><i>Indications for stress ulcer prophylaxis include major trauma, multiple organ failure, burns covering more than 25-30% of the body, major surgery, sepsis, shock, mechanical ventilation, coagulopathy, and high-dose steroid use.</i></p> <p data-bbox="1417 755 2007 1075"><i>However, both PPIs and H2-receptor antagonists have been associated with increased rates of pneumonia and clostridium-difficile associated disease, with higher rates in those receiving PPIs. Placing patients without risk factors for stress ulcers on these medications puts those patients at an unnecessary risk of complications, and increases the cost of hospital stays.</i></p> <p data-bbox="1417 1112 2007 1205"><i>Patients should only receive stress ulcer prophylaxis if they have a clear indication for therapy.</i></p> <p data-bbox="1417 1274 2007 1351"><i>Reference: ASHP therapeutic guidelines on stress ulcer prophylaxis. Am J Health Syst Pharm 1999;56:347-79.</i></p>



## Review of Medication Orders at South Austin Medical Center

A review of medication orders scanned to the pharmacy department during a 24 hour period was conducted to review order completeness and trends.

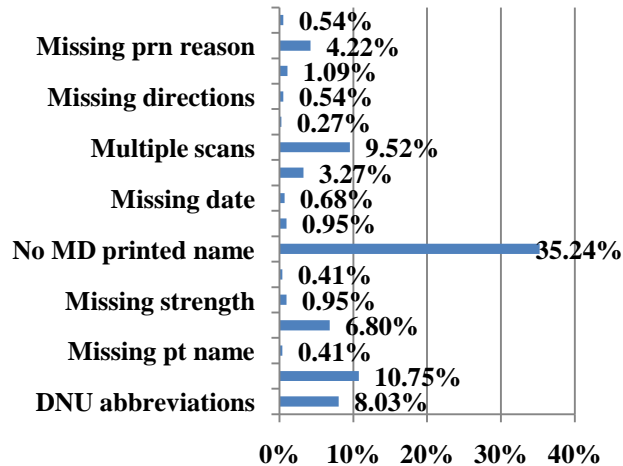
During this time period, the orders revealed:

**35%** Missing Physician printed name

**10.7%** One or more illegible orders

**8%** Contained one or more Joint Commission Do not Use Abbreviations

**4.2%** One or more prn medications lacked a written indication



## Drug Shortages: Update

While medication shortages have long been a problem in healthcare, the number experienced in the past few months is unprecedented. This is particularly the case with high use medications, including emergency drugs, pain medications, and anesthetic agents. Medication shortages, often without prior notice, present a unique challenge to healthcare providers. The potential for a medication misadventure increases when looking for alternative agents. The alternatives may require different dosage strengths, or dosage forms, different dosing, preparation, and / or administration considerations.

### Currently limited supply available in Pharmacy Department (not a complete list)

- cistracurium (Nimbex®)
- succinylcholine
- fosphenytoin (Cerebyx®)
- furosemide (Lasix®)
- amino acids 10% (Travasol®)
- bumetanide (Bumex®)
- desmopressin (DDAVP®)

### Medications currently not available

- manufacturers premixed nitroglycerin (vials available)
- labetalol syringes (multi-dose vials available)
- sulfamethoxazole / trimethoprim injectable (Bactrim®)
- erythromycin injectable

## New Prescribing Recommendations for colchicine for gout

### Gout flares (adults)

Prophylaxis: 0.6 mg once or twice daily  
Maximum of 1.2 mg/day  
Treatment: 1.2 mg (two 0.6 mg tablets) at the first sign of a gout flare followed by 0.6 mg one hour later

### Special populations:

No adjustment necessary for patients with mild to moderate renal or hepatic impairment.

Severe renal impairment: reduce prophylaxis dose to start at 0.3 mg/day and do not repeat standard treatment more often than once every 2 weeks.

Severe hepatic impairment: reduce prophylaxis dose and do not repeat standard treatment more often than once every 2 weeks.

### Dialysis patients

Prophylaxis: 0.3 mg twice a week with careful monitoring  
Treatment: 0.6 mg once, do not repeat more often than once every 2 weeks.

For more specific prescribing information, visit <http://www.colcrys.com>



# Pharmacy is Therapeutic



## Spotlight: Home Medication Policy: MU-08

Patients will be allowed to use their own medications from home ONLY if the medication is unobtainable from the Pharmacy (i.e., investigational drug, high-cost non-formulary medication or high-cost bulk items such as eye drops or inhalers)

The following criteria must be met for patients to use home medications in the hospital:

- An order is obtained from the attending physician for the medication to be brought from home. The order includes: name of drug, strength (if applicable), and administration instructions
- The medications must be in their original containers
- The patient's medications are sent to the Pharmacy for positive identification and labeling
- The nurse caring for the patient administers and documents medications according to the Policy on Medication Administration and Documentation
- Controlled substances must be secured and administration documentation must follow the policy on Controlled Substances: Ordering, Receiving, Storing, Dispensing, Administering, Documenting and Monitoring Controls

## Spotlight: Home Medication Policy: MU-08

Example of complete and correct way to order a home medication for use in the hospital:

① OPANA 10 mg po Q12H - pt may use her own meds if non-formulary

Example of incomplete or incorrect way to order a home medication for use in the hospital:

① Lisinopril 20mg po qday  
 ② Penicillin 400mg po qday  
 ③ clonidine 0.2mg po q12  
 ④ lantus 400mg po qday  
 ⑤ Nexium 40mg po qday  
 ⑥ simvastatin 40mg po qday  
 ⑦ Aspir 325mg po qday

pt may take from his own med supply

PHYSICIAN'S ORDERS

### Conditional Orders

"Conditional Orders" are not valid medication orders. An example of a conditional order would be, "Start medication A, if OK with Dr X." Physicians must contact the physician for verification and / or communicate in progress notes rather than write conditional orders.

See PC 183 - Guidelines for Ordering, Receipt, Transcription, and Administration of Physician/LIP Orders

## Medical record documentation makes Joint Commission top 10 noncompliance list for first half of 2010

Of all of the Joint Commission standards, RC.01.01.01 received the highest percentage of noncompliance among hospitals, with a score of 62%. Other standards that made the noncompliance list included:

- RC.02.03.07 (verbal orders received and recorded by qualified staff): 31%
- PC.01.02.03 (patient is assessed and reassessed per defined time frames): 31%
- **MM.04.01.01 (clear and accurate medication orders): 30%**

Rationale for MM.04.01.01 Medication Orders are clear and accurate:

Medication errors may occur when hospital staff are communicating or transcribing medication orders. Verbal and telephone orders are particularly susceptible to error. The hospital is responsible for reducing the potential for medication errors and the misinterpretation of these medication orders.



# Pharmacy is Therapeutic



## "Do Not Use" List and recommendations from The Joint Commission

- U / IU Write out the entire word "Units" or "International Units"
- Trailing zero (1.0 mg) Do NOT use trailing zeros after a decimal point
- Lack of a leading zero (.1mg) ALWAYS use a zero before a decimal point
- MS, MSO4, MgSO4 Write "morphine sulfate" or "magnesium sulfate"
- Q.D., q.d., qd, Q.O.D., q.o.d., qod Write "daily" and "every other day"

DO NOT USE abbreviations: MS / MSO<sub>4</sub> / MgSO<sub>4</sub> / Q.D. / Q.O.D. / U / IU / Trailing zero  
Authorization is hereby given to dispense the generic

Date/Time	PH
11/9/10	1500mg x3
	6-558 780mg 50. qd
	1.0K 10mg 5.0. qd x3

PHYSICIAN'S ORDERS  
Lentils 15.0 50 now  
Discharge home today  
Flu

Mg SO<sub>4</sub> 4 gm IV now

PROCRIS 4000 M SA

## Unclear Medication Orders

① Vitamin 10 mg po now ~~qd~~, repeat AM 8/13.

② ↓ IVF to 100% now  
- ↓ IVF to 100% when stable: low sodium

ADA k Other: Chlor Legit d  
0.505 70 Ce 1 hour

Levaquin 500 mg po qd  
Lorazepam 30 mg, sc qd

### Other Considerations for Writing Medication Orders

- Write medication names in full
- Use metric units and not Apothecary units
- Write "mcg" or "micrograms" and not µg

### Propoxyphene Products (Darvon, Darvocet) - Withdrawn From the Markets

FDA has asked manufacturers to withdraw all propoxyphene-containing products (Darvon, Darvocet, generics) from the market. New data show propoxyphene can cause significant cardiac toxicity including prolonged PR interval, widened QRS complex, and prolonged QT interval, increasing the risk for serious abnormal heart rhythms. The safety risks of propoxyphene outweigh any benefit for pain relief.

## ISMP update: Avoid the use of "biweekly"

The word biweekly usually means once every 2 weeks, but it can also mean twice-a-week. The word bimonthly usually means once every 2 months; however it can also indicate twice a month.

An example cited by the ISMP was a case of an order for chlorambucil to be given "BIW" with an intended meaning of twice a week and was misinterpreted as "twice daily"

Avoid the following when ordering medications: "biweekly," including the abbreviation "BIW" "bimonthly"

Instead, use the terms: "twice-a-week" "every 2 weeks" "every other month" "alternate months"

Pharmacy is Therapeutic is provided as a means to educate about medication safety, new medication information, and updates on formulary medications.



Pharmacy and Therapeutics Committee  
Medication Safety Committee  
Department of Pharmacy Services