

### Novant Pharmacy

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## Adult Amino Acid Shortage

*Deanna Rattray, Pharm.D., BCPS*

Due to a nation-wide shortage of Aminosyn II, the most commonly purchased amino acid product throughout Novant, all of the below alternative products were reviewed and approved for formulary status. Currently, along with Aminosyn II, all adult amino acid products are on allocation or not widely available. The shortage is expected to continue into 2011.

Approved Products	Aminosyn II 10%	Aminosyn II 15%	Clinisol 15%	Travasol 10%	ProSol 20%
<b>Essential Amino Acids (mg/100ml)</b>					
Isoleucine	660	990	749	730	1,080
Leucine	1,000	1,500	1,040	600	1,080
Lysine	1,050	1,575	1,180	580	1,350
Methionine	172	258	749	400	760
Phenylalanine	298	447	1,040	560	1,000
Threonine	400	600	749	420	980
Tryptophan	200	300	250	180	320
Valine	500	750	960	580	1,440
Histidine	300	450	894	480	1,180
<b>Nonessential Amino Acids (mg/100ml)</b>					
Alanine	993	1,490	2,170	2,070	2,760
Arginine	1,018	1,527	1,470	1,150	1,960
L-Aspartic Acid	700	1,050	434	-	600
L-Glutamic Acid	738	1,107	749	-	1,020
Proline	722	1,083	894	680	1,340
Serine	530	795	592	500	1,020
N-Acetyl-L-Tyrosine	270	405	39	40	50
Glycine	500	750	1,040	1,030	2,060
How supplied	2,000 ml	2,000 ml	500 ml; 2,000 ml	500 ml; 1,000 ml; 2,000 ml	500 ml;1000 ml; 2,000 ml
Manufacturer	Hospira	Hospira	Baxter	Baxter	Baxter



## Formulary Reconciliation—Class Reviews

*Chris Lowe, PharmD*

This committee will reconcile the formularies across the system by comparing all of the existing formulary agents by AHFS classification and retaining a group of drugs that is determined to be the most beneficial for our patients and will meet the needs of all facilities across the system. Class reviews will be preformed by teams of clinical pharmacists from all facilities across the system. The order in which the drug classes will be reviewed was determined by a decision matrix that scored each section by safety, ease and cost. Formulary reconciliation will remain a constant item in this newsletter until the process is complete in 2011.

- |   |   |                                     |
|---|---|-------------------------------------|
| 1. Antidiarrhea agents                        | 7. Iron preparations                    | 13. Azoles                          |
| 2. Benzodiazepines (anticonvulsants)          | 8. Emetics                              | 14. Misc B-lactam antibiotics       |
| 3. Benzodiazepines (Anxiolytic, sedative/hyp) | 9. Local anesthetics                    | 15. Basic oils and other            |
| 4. Phenothiazine derivatives                  | 10. Antivirals (skin & mucous membrane) | 16. Basic ointments and protectants |
| 5. Prostaglandins                             | 11. Chloramphenicol                     | 17. Oxytocics                       |
| 6. Antipsychotic agents                       | 12. Antivirals (misc)                   | 18. Pulmonary surfactants           |
|   |   | 19. Vasoconstrictors                |

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### Formulary Class Review Teams:

Medicine Team I: Andrea Fender, Lorie Poole, Deanna Rattray, Christina Roels

Medicine Team II: Lisa Brennan, Gwen Mitchell, Chue Lee, Kristine Vaden

Medicine Team III: Sara Shields, Lauren Gurganus, Dustin Pippin, Michael Evans

Medicine Team IV: Brock Harris/Amy Holmes, Allison Gaddy, Cam Haskett, Randi Bridges

Surgery/Critical Care Team I: Sara Szafran, Susan Smith, Jackie Olin, Patricia Pinder

Surgery/Critical Care Team II: Jeremy Hodges, Susan Wilson, Laura Bruner, Kevin Morris

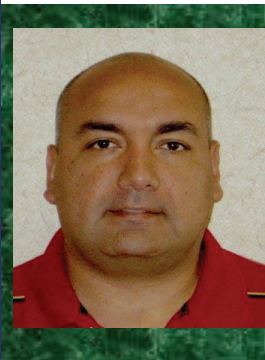
Infectious Disease Team: Charles Hartis, Susan Smith

Oncology Team: Christina Ciccarello, Chris Lowe

Pediatrics Team: Amy Holmes, Brock Harris, Shannon Williams

### P&T Member Spotlight

*Miguel Loayza, IT Manager—  
Behind the scenes P & T  
implementer*



Miguel may not attend P&T Committee meetings, but he has a major role in implementing formulary changes. After each meeting, he helps to update pharmacy software data bases. (no small task). Miguel grew up in Los Angeles California and spent part of his time in San Diego. He received his Pharm.D. from the University of Southern California. Miguel moved to the Charlotte area in 1998 and has

worked at PH Charlotte since 2007. Outside of work, he keeps busy with his family, coaching little league football and mountain biking.

### October Events:

- Medication Use Policy Subcommittee: October 8th
- Medication Safety Subcommittee: October 11th
- Oncology Subcommittee: October 14th
- Cardiovascular subcommittee: October 28th
- Novant P&T Committee: October 28th



## Medication Safety Subcommittee (MASCOT) Report

*Elizabeth Rebo, PharmD*

The team discussed the August 26<sup>th</sup> ISMP safety alert that discussed transposition errors with height and weight, when utilizing both in metric. In follow-up to earlier discussions, the team has decided to move forward with measuring height in standard and weight in metric. A work request has been submitted to display height in both standard and metric in Net Access so both values will be accessible with no need for calculations.

The team discussed a medication reconciliation issue regarding the transfer and discharge/readmit process. These orders are sometimes written hours before the patient actually moves to their new location. The risk point involves any orders written during that interim time – sometimes those orders are missed. A team has been created to review the current process and develop a new procedure to ensure these orders are not missed.

The Novant anticoagulation team met on September 7, 2010. One of the main goals of the team will be to standardize the management of anticoagulation across Novant. The team also identified a need to follow up on discharged patients with a positive **HIT** to ensure that the allergy is documented in the medical record even though they are discharged.

The Novant allergies team had their first meeting on September 15, 2010. Dr. Steve Collins and Kathryn Montanya will lead this team. There was a great deal of discussion regarding the term “allergy” as our computer system currently does not differentiate an allergy from a side effect or intolerance. The team will investigate whether our current systems can make this differentiation.

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## Cardiovascular Subcommittee Report

*Laura Frantz, Pharm.D.*

An Angiotensin II Blocker (ARB) formulary review was completed. All ARBs are indicated for hypertension; other indications (e.g. Acute Myocardial Infarction, Heart Failure, Type I Diabetic Nephropathy, and Cardiovascular risk Reduction) vary by agent. The maximum blood pressure lowering effect observed with each ARB is consistent across the medication class with an average maximum blood pressure reduction of approximately 8 mm Hg systolic/ 5 mm Hg diastolic. Our preferred formulary ARBs will now be losartan and candesartan. All other ARBs (except Valsartan) will be nonformulary and substituted to a therapeutically equivalent losartan dose. Valsartan will be substituted to a therapeutically equivalent dose of candesartan. The following Formulary Class Reviews were completed: Thrombolytics, Cardiotonics, ezetimibe.

A formulary review of adenosine, dipyridamole, and regadenoson for myocardial perfusion imaging (MPI) exams was completed. All agents have similar indications; the distinguishing differences primarily pertain to ease of administration and cost. Upon completion of a detailed financial analysis of these agents for MPI, it was decided that Dipyridamole will be our preferred agent for inpatient exams and that regadenoson will be our preferred agent for outpatient exams or in any patient with stable bronchospastic disease.

Sotalol (intravenous) was reviewed and added to the formulary restricted to cardiology for use in patients unable to tolerate oral sotalol. Administration will be limited to appropriate intermediate care/ critical care units and a mandatory order set will be developed for use in patients who receive this medication. Dose conversion between IV and PO is as follows: 75 mg IV = 80 mg PO, 112.5 mg IV = 120 mg PO, and 150 mg IV = 160 mg PO. Doses must be administered as an IV infusion over 5 hours q12h or q24h based upon creatinine clearance. Additionally, compatibility information is not available so administration will require a dedicated IV line.

An HMG CoA Reductase Inhibitor (Statin) formulary review was completed. The preferred formulary statins will now be simvastatin, rosuvastatin, and atorvastatin (80 mg strength only). All other statins will be therapeutically substituted to an equivalent dose of simvastatin with the exception of atorvastatin 40 mg, which will be therapeutically substituted to rosuvastatin 10 mg.

The following Formulary Class Reviews were completed: Platelet-Aggregation Inhibitors, Vasodilating Agents, and Phosphodiesterase Inhibitors.

## Medication Use Policy Subcommittee (MUPS)

*Kathryn Montanya, PharmD, MS*

MUPS recommended the following policies for approval by P&T:

<b>TRw Vaccine Information and Documentation</b>
<b>TRw Transdermal Patch Policy</b>
<b>FMC Glycemic Management Policy</b>
<b>FMC Procedures</b>
<b>TR Medication Administration Timing</b>
<b>TR Medication Reconciliation</b>
<b>TR Medications From Home</b>



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## Succinylcholine Shortage

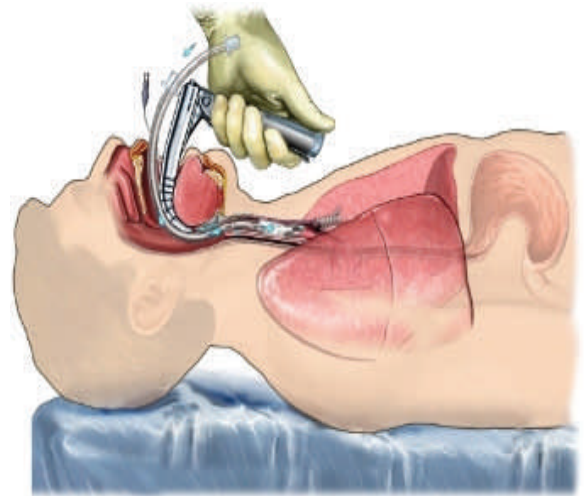
*Chris Lowe, PharmD*

Shortages of drugs commonly used in hospitals are putting patients at risk across the country and healthcare professionals are devising methods to ration their limited supplies.

Although some shortages stem from temporary manufacturing or distribution problems, many are the result of profound shifts in the economics of the pharmaceutical industry. In response to increasing financial pressures, drug makers are abandoning older, less profitable products used mainly in hospitals in favor of newer, more lucrative medications tailored to the outpatient market.

Government regulators have no authority to prevent drug makers from halting production. Only in rare cases can they even require that manufacturers give notice before dropping products so that doctors have time to find substitutes or make other arrangements.

Succinylcholine, a drug currently experiencing a period of extreme short supply, is used to induce short-term muscle relaxation in anesthesia and intensive care, usually for facilitation of endotracheal intubation. Despite its adverse effects, including life threatening malignant hyperthermia, hyperkalaemia and anaphylaxis, it is perennially popular in emergency medicine because it arguably has the fastest onset and shortest duration of action of all muscle relaxants. The former is a major point of consideration in the context of trauma care, where endotracheal intubation may need to be completed very quickly. The latter means that, should attempts at endotracheal intubation fail and the patient cannot be ventilated, there is a prospect for neuromuscular recovery and the onset of spontaneous breathing before hypoxaemia occurs.



While the Novant facilities do all have succinylcholine on hand, supplies are limited and it is our responsibility to use these supplies responsibly. Please contact your pharmacy department to be advised of the current drug shortage status, and to learn what strategies are being employed to help combat the shortage issues.