Volume 27, Number 4

Shands at the University of Florida

April 2013

Drugs & Therapy

B • U • L • L • E • T • I • N

FORMULARY UPDATE

The Pharmacy and Therapeutics Committee met March 19, 2013. 4 drugs were added in the *Formulary*, no drugs were deleted, and 3 drugs were designated nonformulary and not available. 1 interchange was approved and 2 drugs were designated high-priority nonformulary drugs. 2 drugs had criteria for use changes.

◆ ADDED

Influenza Vaccine, Quadrivalent (Fluarix® Quadravalent)

Influenza Vaccine, Trivalent (FluBlok®)*

**Restricted to Occupational Health*

Ofatumumab (Arzerra®)*

**Restricted to a 1st or 2nd dose for the labeled indication*

Teduglutide (Gattex®)*

**Restricted to patients admitted receiving this drug*

◆ DELETED

None

◆ NONFORMULARY AND NOT AVAILABLE

Influenza Vaccine, Trivalent, High Dose (Fluzone® HD)

Influenza Vaccine, Trivalent (Flucelvax®)

Oxybutynin Transdermal (Oxytrol® for Women)

◆ INTERCHANGES

Mesalamine Extended-Release (Delzicol®)†

†*Interchanged to Mesalamine ER*

◆ HIGH-PRIORITY NONFORMULARY DRUGS

Eculizumab (Soliris®)‡

‡*Will be acquired as needed*

(continued on next page)

POLICIES AND PROCEDURES

Formulary Categories

A formulary is a list of drugs that are readily available for use and it reflects the current opinions of the medical staff. The P&T Committee is the medical staff committee that determines which drugs are listed in the *Formulary* by using an evidence-based approach.

When drugs are listed in the *Formulary*, they are in 1 of 3 categories on the left side of the figure on page 6. Most drugs listed are not restricted in any way. When new drugs are added in the *Formulary*, they are approved with criteria for use. These criteria are a snapshot of appropriate use at the time of that drug's addition. Restricted drugs may be limited to a location, service, use, or other standard. Most restrictions are for safety or cost concerns.

Only about 10% of the drugs on the market are included in the *Formulary*. Most drugs on the market are, thus, nonformulary. Your patients may be admitted on drugs not listed in the *Formulary*. There are 5 categories of nonformulary drugs on the right side of the figure on page 6.

Many drugs not listed in the *Formulary* are interchanged to a drug that is available. This includes generic and therapeutic interchanges. When a drug is available as an A-rated generic according to the FDA, a single generic product will be available at Shands. For some drug categories with many similar drugs (angiotensin converting enzyme inhibitors), a limited selection is available with equivalent dosage conversions to the formulary alternative. In Epic, an alert with a link will lead the prescriber to the appropriate therapeutic alternative.

When a new drug or drug category is reviewed and the P&T Committee determines that there is no reason to obtain a drug for nonformulary use, it is deemed nonformulary and not available. Shands UF has a liberal *Patients' Own Medication* policy, and patients can use their own supply of a nonformulary and not available drug. However, most patients should use an alternative listed in the *Formulary*.

When a new drug or drug category is reviewed and use in the inpatient setting is deemed unsafe, it is designated nonformulary and do not use. We will not obtain these drugs for inpatient use AND patients cannot use their own supply. Examples of drugs in this category are listed in the table below.

Nonformulary: Do Not Use
Benzocaine-containing products (eg, HurriCaine® Spray)
Bisphosphonates *(except alendronate, which is restricted)*
Colesevelam (WelChol®)
Compounded drugs removed from the market for safety reasons
Controlled substances not listed in the *Formulary*
Injectable drugs that are patient supplied [not exempted by policy]
Insulins not listed in the *Formulary (pens, etc.)*
Magic Mouthwash
Raloxifene (Evista®)
Triple sulfa vaginal cream

High-priority nonformulary drugs are drugs that should be used by inpatients, but they either cannot be stocked or are not stocked for cost reasons. Some restricted drug distribution programs do not allow Shands to purchase or stock risky drugs; manufacturers want to track each patient's supply. In this case, patients must use their own supplies. Exceptions sometimes have to be made for injectable drugs in this category, because there would be no other way for patients to be treated. Some rarely used expensive drugs, when a delay in therapy would not be critical, are only obtained when they are needed (eg, glucarpidase for methotrexate toxicity). The cost of stocking these drugs and replacing them when they expire is too steep. If a delay in therapy is not

(continued on page 6)

INSIDE THIS ISSUE

Formulary update, *from page 1*

Pomalidomide (Pomalyst®)‡

‡*Patients must use their own supply; restricted distribution*

◆ CRITERIA-FOR-USE CHANGES

Alemtuzumab (Campath®)*

**Clopidogrel* (Generic)*

**Zolpidem* (Generic)*

Influenza vaccines are used annually to prevent influenza A and influenza B. The goal is to prevent influenza outbreaks and decrease the complications of the illness. Until recently, all influenza vaccines were trivalent (ie, contained 3 strains of influenza antigens) based on influenza viruses anticipated to be endemic for that season. Trivalent vaccines traditionally contained antigens for two A-strains and one B-strain.

FluMist® is a live attenuated intranasal form of the seasonal influenza vaccine. It was the first marketed quadrivalent vaccine. FluMist® is not listed in the *Formulary* because patients shedding virus after vaccination might pose risk to our immunocompromised patients. Injectable vaccines are inactivated and cannot cause influenza.

Fluarix® Quadrivalent is the first injectable [inactivated] quadrivalent vaccine. The Anti-Infective Subcommittee recommended the addition of this product for the 2013-14 influenza season. Fluarix® Quadrivalent includes an additional B strain of influenza compared with conventional trivalent vaccines. In 6 of the last 12 seasons, B-strain selection has been poor. By adding an additional strain, better coverage is anticipated.

Fluarix® Quadrivalent is only recommended for patients 3 years of age and older. It is made by the traditional "chicken egg" technology. Although Fluarix® Quadrivalent is 50% more expensive than the trivalent vaccine, the P&T Committee added it in the *Formulary* for the next influenza season. Fluarix® Quadrivalent will also be the primary "influenza vaccine" used by Occupational Health for the next influenza season.

Flublok® and **Flucelvax®** are trivalent vaccines made with "non-egg technology." Flublok® is made using genetically modified proteins from insect cells (baculovirus expression system and recombinant DNA technology). Flucelvax® is made in modified Darby-canine-kidney (MDCK) cell lines. Flublok® is labeled for use in 18 to 49 year olds, while Flucelvax® is labeled for patients 18 years of age or older. Both are antibiotic-free.

There are concerns about the safety of these products because they use new technology. The Anti-Infective Subcommittee recommended that both products be designated nonformulary and not available for inpatient use, and that FluBlok® be restricted to use by Occupational Health for employees with a documented egg allergy. Whether Flucelvax® will be available for next season is not clear.

FluBlok® will not be used for inpatients with a documented egg allergy. The decision to use a non-egg based vaccine is deferred to the patient's primary care provider in the outpatient setting. In the outpatient setting, the primary care provider can assess the patient's egg allergy and determine the benefits versus the risks of using this new technology.

The CDC has guidelines for influenza vaccines in patients with "egg allergies." If a patient can eat lightly cooked eggs, then the egg allergy is not a concern. If the patient has a history of urticaria (hives) after eating eggs, the patient can receive an egg-based vaccine, but the patient should be monitored for 30 minutes after administration. If the patient has a history of hypotension (or other cardiovascular effect), respiratory distress, nausea or vomiting, or requires epinephrine or other emergency attention when exposed to eggs, they should be assessed by a physician with expertise in management of allergic conditions. CMS currently allows an exception for influenza vaccine standards for inpatients who have an egg allergy and should receive the vaccine.

Fluzone® HD is a "high dose" trivalent vaccine indicated for elderly people since they do not achieve optimal serological response with conventional vaccine. The Anti-Infective Subcommittee concluded that higher titers have not been associated with improved outcomes and Fluzone® HD was designated nonformulary and not available for inpatient use.

Ofatumumab is a fully humanized monoclonal antibody with a labeled indication for the treatment of chronic lymphocytic leukemia (CLL) refractory to fludarabine and alemtuzumab. The P&T Committee added ofatumumab in the Chemotherapy Policy in November 2009, but it remained nonformulary.

Ofatumumab targets CD20-expressing B-lymphocytes and induces complementary dependent cytotoxicity. In vitro, ofatumumab has superior binding to B-cells by attaching to a unique epitope compared to rituximab. Ofatumumab is primarily used in leukemias and lymphomas where B cells proliferate; it may also be beneficial in autoimmune diseases where B-cells are involved in producing inappropriate autoantibodies. Rituximab is frequently used off-label. It is plausible that ofatumumab would be used in these disease states because of their similarities. Thus, off-label use is a concern.

Ofatumumab is typically administered as an infusion over 30 minutes. The labeled dosage is 300 mg for the first infusion followed by 2,000 mg for subsequent infusions, with doses 1-8 given weekly and doses 9-12 given monthly. Before administering ofatumumab, patients must be pretreated with acetaminophen, an antihistamine, and an IV corticosteroid to reduce infusion-related adverse effects. Initial doses may require prolonged infusions to mitigate infusion reactions.

Efficacy data for ofatumumab are limited. FDA approval was based on an interim analysis of an uncontrolled phase 2 study. Studies measured response rates as their primary variable and measured progression-free survival and overall survival as secondary outcomes. It is difficult to determine ofatumumab's place in therapy because of the lack of data for comparable therapies.

The most common adverse effects of ofatumumab are infusion-related (nausea, urticaria, headache, pyrexia, rash) particularly with the first and second dose. Tumor lysis syndrome is a risk for patients with high white blood cell counts (eg, greater than 25,000/mcL). Other common adverse effects are infection and neutropenia. Studies are small, so it is difficult to determine the rate of adverse effects; there may be additional rare adverse effects.

The cost of ofatumumab is substantial; each dose costs between $1,500 and $9,000. A full course of CLL therapy costs an estimated $100,000. Ofatumumab is more expensive than rituximab. If even a small percentage of patients receiving rituximab were switched to ofatumumab, costs would increase significantly.

Ofatumumab is restricted to only the first or second dose for CLL refractory to fludarabine and alemtuzumab. It remains unrestricted in the Infusion Center.

Teduglutide is a recombinant glucagon-like peptide-2 (GLP-2) analog with a labeled indication for the treatment of adult patients with Short Bowel Syndrome (SBS) who are dependent on parenteral support. SBS is a condition that results from the partial or complete surgical removal of the small and/or large intestine. Extensive loss of the small intestine can

(continued on next page)

Formulary update, *from page 2*

lead to poor absorption of fluids and nutrients from food needed to sustain life. As a result, patients with SBS often receive parenteral nutrition.

Teduglutide is a subcutaneous injection administered once daily to improve intestinal absorption of fluids and nutrients and to reduce the frequency and volume of parenteral nutrition.

Because teduglutide may cause other serious health conditions, it is critical that patients and health care professionals understand the drug's potential and known safety risks. Patients treated with teduglutide have a potential increased risk of developing cancer and polyps in the intestine, obstructions in the intestine, gallbladder disease, biliary tract disease, and pancreatic disease. To ensure that the benefits of teduglutide outweigh the potential risks, the drug is being approved with a Risk Evaluation and Mitigation Strategy (REMS), consisting of a communication plan and training for prescribers.

Teduglutide's safety, efficacy, and tolerability were evaluated in 2 clinical trials and 2 extension studies. Patients in the trials were randomly assigned to receive teduglutide or placebo. The clinical trials were designed to measure the number of patients who achieved at least a 20% reduction in the volume of weekly parenteral nutrition after 20 and 24 weeks of treatment (clinical response). Forty-six percent and 63% of patients treated with teduglutide achieved clinical response, versus 6% and 30% of patients treated with placebo. The trials also measured the mean reduction in the volume of parenteral nutrition (liters per week) after 24 weeks of treatment. Results showed a mean reduction in parenteral nutrition of 2.5 L/week and 4.4 L/week in teduglutide-treated patients, compared with 0.9 L/week and 2.3 L/week in placebo-treated patients.

The extension studies followed patients treated with teduglutide in the clinical trials for an additional 28 weeks. Patients experienced a 4.9 L/week and 5.2 L/week mean reduction in parenteral nutrition after 1 year of continuous teduglutide treatment. Six patients in the extension studies were weaned off parenteral nutrition while on teduglutide.

The most common adverse effects of teduglutide identified in clinical trials were abdominal pain, injection site reaction, nausea, headache, abdominal distension, and upper respiratory tract infection. The FDA is requiring a postmarket study of SBS patients treated with the drug in a routine clinical setting to evaluate further the drug's potential to cause colorectal cancer and other conditions. Patients in this study will be followed for at least 10 years.

Teduglutide is restricted to patients who have already been receiving it in the outpatient setting. Teduglutide's use must meet the requirements of the REMS and the restricted distribution system.

Oxytrol® for Women is the first over-the-counter (OTC) treatment for overactive bladder in women ages 18 years and older. Oxybutynin is an anticholinergic. Oxytrol® Patch remains available for men with overactive bladder by prescription only.

Oxytrol® for Women is a patch that is applied to the skin every 4 days, so patients could be admitted on the patch with drug remaining for delivery. The patch delivers 3.9 milligrams of oxybutynin per day.

The safety and effectiveness of Oxytrol® for Women for over-the-counter use were established in more than 5,000 subjects participating in 9 studies. Overall, results from these studies showed that consumers can understand the information on the label, properly select whether the product is right for them, and use the drug appropriately.

Adverse effects reported during clinical studies were mild and included skin irritation where the patch was applied, dry mouth and constipation. A leaflet with tips to help manage overactive bladder will be provided with the product.

In May 2009, Oxytrol® was designated nonformulary and not available.

Oxytrol® for Women was also designated nonformulary and not available and should be converted to tolterodine ER or oxybutynin IR…or they may use their own supply from home.

Delzicol® is a delayed-release oral mesalamine capsule. It was approved after showing bioequivalence to mesalamine 400 mg delayed-release tablet (Asacol®) and using clinical trial data from the previously approved tablet formulation.

Mesalamine is an aminosalicylate with a labeled indication for the treatment of mildly to moderately active ulcerative colitis and for the maintenance of remission of ulcerative colitis.

Delzicol® does not provide additional benefits over other delayed-release mesalamine products. The data used in the labeling for Delzicol® is based on mesalamine delayed-release tablets.

Delzicol® is available as 400-mg oral capsules, and 2 capsules of Delzicol have not been shown to be bioequivalent to an Asacol® HD 800-mg delayed release tablets. Although Asacol® and Delzicol® cannot be interchanged in the community setting because they are different dosage forms (ie, capsule vs tablet), the P&T Committee approved the interchange of Delzicol® and mesalamine delayed-release tablets.

Eculizumab is a complement inhibitor with a labeled indication for the treatment of patients with paroxysmal nocturnal hemoglobinuria (PNH) to reduce hemolysis. It is also labeled for use in hemolytic uremic syndrome. Eculizumab's major risk is immunosuppression and the risk of meningococcal infections.

In November 2009, eculizumab was designated a high-priority nonformulary drug and that patients must use their own supply. At that time, patients had to use their own supply because it was only available via a restricted distribution program (ie, OneSource™).

The restricted distribution system changed about a year ago and Shands UF can now purchase eculizumab; therefore, it remains a high-priority nonformulary drug (will not be stocked), but we will obtain it rather than require that the patient use their own in appropriate circumstances (paroxysmal nocturnal hemoglobinuria or hemolytic uremic syndrome) when the patient has been maintained on the drug in the outpatient setting.

Pomalidomide is a thalidomide analogue with a labeled indication for patients with multiple myeloma who have received at least 2 prior therapies including lenalidomide and bortezomib and have demonstrated disease progression on or within 60 days of completion of the last therapy.

Pomalidomide's safety and effectiveness was evaluated in a clinical trial of 221 patients with relapsed or refractory multiple myeloma. The trial was designed to measure the number of patients whose cancer completely or partially responded after treatment (objective response rate, or ORR). Patients were randomly assigned to receive pomalidomide alone or pomalidomide with low-dose dexamethasone. Results showed 7.4% of patients treated with pomalidomide alone achieved the ORR. The median duration of response has not yet been reached in these patients. In patients treated with pomalidomide plus low-dose dexamethasone, 29.2% achieved the ORR with a 7.4-month median duration of response.

Pomalidomide carries a boxed-warning alerting patients and health care professionals that it should not be used in pregnant women because it can cause severe life-threatening birth defects, and that the drug can cause blood clots. Because of pomalidomide's embryo-fetal risk, it is available only through the Pomalyst Risk Evaluation and Mitigation Strategy (REMS) Program. Prescribers

(continued on next page)

Formulary update, *from page 3*

must be certified with the Pomalyst REMS Program by enrolling and complying with the REMS requirements. Patients must sign a Patient-Physician agreement form and comply with the REMS requirements. In particular, female patients who are not pregnant but can become pregnant must comply with the pregnancy testing and contraception requirements, and males must comply with contraception requirements. Pharmacies must be certified with the Pomalyst REMS Program, must only dispense to patients who are authorized to receive the drug, and must comply with REMS requirements.

Common adverse effects include neutropenia, fatigue and weakness, anemia, constipation, diarrhea, thrombocytopenia, upper respiratory tract infection, back pain, and fever.

Pomalidomide was designated a high-priority nonformulary drug, and patients must use their own supply during their hospitalization.

Alemtuzumab is a humanized monoclonal antibody that binds to lymphocytes at the CD52-receptor and stimulates antibody-mediated cell lysis. It was originally approved with a labeled indication for use in patients with refractory B-cell chronic lymphocytic leukemia (CLL).

Alemtuzumab is given IV over a 2-hour period 3 times a week for up to 12 weeks. It is important that patients be carefully monitored during their infusion. Serious infusion-related reactions can occur. Rigors, fever, and nausea are common. Hypotension, rash, fatigue, urticaria, dyspnea, pruritus, headache, and diarrhea are also reported. Gradual escalation of the dose is required when therapy is begun or any time that therapy is restarted after greater than or equal to 7 days. Pre-medication with diphenhydramine 50 mg and acetaminophen 650 mg administered 30 minutes before the infusion may decrease the incidence of infusion-related reactions. Other pre-medications (eg, antiemetics, meperidine, and corticosteroids) are also sometimes used.

Alemtuzumab is immunosuppressive and can result in serious infectious complications. Bacterial, viral, fungal, and protozoal infections have been reported in patients receiving alemtuzumab therapy. Prophylaxis for *Pneumocystis carinii* pneumonia (PCP) and herpes virus infections has been shown to decrease, but not eliminate, the occurrence of these infections. Serious and, in rare instances, fatal pancytopenia or marrow hypoplasia, autoimmune idiopathic thrombocytopenia, and autoimmune hemolytic anemia have occurred in patients receiving alemtuzumab therapy. Single doses of greater than 30 mg of alemtuzumab or cumulative doses greater than 90 mg per week are not recommended because these doses are associated with a higher incidence of pancytopenia.

There are now data supporting the off-label use of alemtuzumab for the management of acute rejection post solid-organ transplantation. In this case, the dose is a single 30-mg dose.

Alemtuzumab is not being marketed currentlty. Its use for the management of rejection is free of cost…right now. It is expected to be remarketed for other uses (multiple sclerosis) at an increased cost. Its use in cancer has waned.

Alemtuzumab is now restricted to solid organ transplant rejection and no longer must be ordered on a chemotherapy order form.

Clopidogrel inhibits platelet aggregation by directly inhibiting adenosine diphosphate (ADP) binding and ADP-mediated activation of the glycoprotein GPIIb/IIIa complex. Clopidogrel has labeled indications for the reduction of atherothrombotic events following a recent myocardial infarction, stroke or established peripheral vascular disease, and for acute coronary syndrome (ACS) to prevent thrombotic events. It is used after percutaneous coronary interventions (PCIs) with or without stents and coronary artery bypass grafting (CABG).

Clopidogrel has a boxed-warning stating it is dependent on the cytochrome P450 system, specifically CYP2C19, for activation and effectiveness. Clopidogrel is a prodrug that is converted to its active metabolite by CYP2C19. "Poor" metabolizers with ACS or undergoing PCI exhibit higher cardiovascular event rates than do patients with normal CYP2C19 function. Genetic tests are available to identify a patient's CYP2C19 genotype, which can be used to determine the appropriateness of clopidogrel use and whether an alternate should be considered.

In patients whose CYP2C19 genotype suggests that clopidogrel may be suboptimal (ie, both "impaired" and "very impaired" metabolizers), prasugrel (Effient®) 10 mg daily or ticagrelor (Brilinta®) 90 mg twice daily are options. The appropriate selection may be driven by factors that prevent or limit the use of these agents.

For impaired metabolizers (heterozygotes) only, increasing the dose of clopidogrel to 225 mg daily was an option. Now, the Personalized Medicine Program recommendation is to use prasugrel or ticagrelor as an alternative. There is insufficient data to support the use of higher clopidogrel doses. Recent data suggest that platelet reactivity studies do not correlate with clinical effectiveness, which was the basis for the previous recommendation to use higher clopidogrel doses for these patients.

Zolpidem is a nonbenzodiazepine hypnotic drug that works at the benzodiazepine receptors and shares many similarities with benzodiazepines. The FDA recently released a drug safety alert for zolpidem-containing products recommending lower doses.

The FDA recommends that the dose be lowered because of new data that show increased blood levels at higher doses may be sufficient to impair patients the next morning. In the outpatient setting, activities that require alertness include driving. In the hospital, the concern is falls, which have been associated with zolpidem use.

The risk of impairment is highest in patients taking extended-release products, which are not listed in the *Formulary*, and in women. Data show that zolpidem is cleared more slowly in women than men.

The FDA is specifically recommending that the dose for women should never exceed 5 mg for immediate-release products. For all patients, the lowest possible dose that treats a patient's insomnia should be used. All patients should be warned about possible impairment the next day, despite their inability to detect this impairment.

The Medication Safety Subcommittee recommended that a 10-mg dosing option be removed from all order sets and that the 10-mg order composer button be removed from Epic. When zolpidem is ordered, an alert will fire that states, "The recommended dose of zolpidem for women is 5 mg." This does not prevent ordering a 10-mg dose for men or women, but it is a more deliberate choice. The recommendation was to make this an "intermediate" level restriction, but reassess use after 2-3 months of implementing this change to see what influence it has on utilization. If necessary, procedures will be investigated that would prevent 10-mg doses in women under any circumstance.

These recommendations came after an audit in January of 904 doses in 269 patients. More females than males received 10-mg doses (57%). Of the 20 order sets containing zolpidem, more than half had 10-mg range orders (ie, 5-10 mg as needed), which permitted the nurse to determine the appropriate dose. The doses patients were receiving when they were admitted to the hospital were not assessed.

NEWS

New Online *Formulary*

An electronic version of the *Formulary* is now accessible on the pharmacy website through the Portal. To access the *Formulary*, go to the Department of Pharmacy Services' website, which can be found by clicking the Services tab at the top of the portal entry screen. Select ***Clinical***, then select ***Pharmacy Services – UF***.

Click the ***Drugs Listed in the Formulary*** link on the left hand of the screen to get to the searchable database. You can also use the URL http://shandsformulary.shands.ufl.edu. Please bookmark this application, which will be helpful in determining what drugs are readily available for use. You will have to be logged into the Portal to access this link.

There is a dropdown menu. Select ***Please select a Medication List*** that defaults to the ***Shands UF Formulary***. The formularies for Shands Jax and Vista-Rehab are also options. The ***Search any field*** function is very powerful. You can type in a generic name, a common brand name, therapeutic class, or pharmaceutical class.

You can also use any part of a name you are sure is correct. For example, if you typed *"pril,"* you would get any drug name containing that partial word. So, all angiotensin converting enzyme inhibitors, which all contain *"pril"* could be located this way.

When a patient is admitted on a drug not listed in the *Formulary*, the *Online Formulary* can lead to similar options that are readily available. If your patient was admitted on esomeprazole, and you wanted to use the proton pump inhibitor listed in the *Formulary*, you would first search to see if esomeprazole is listed. You would find that it is not. You could enter *"prazole,"* which would show that pantoprazole is our primary proton pump inhibitor. The ***Therapeutic Class*** for pantoprazole is ***Gastrointestinal Agents***. The ***Pharmaceutical Class***, which is more specific, is ***Ulcer Drugs***. By searching for ***Ulcer Drugs***, all drugs listed in the *Formulary* for this use can be found. Alternatives like famotidine or sucralfate will be found.

The *Online Formulary* offers a convenient method to determine which drugs are listed in the *Formulary*…and determine alternatives for nonformulary drugs.

POLICIES AND PROCEDURES

Nursing's Medication Administration Policy

The P&T Committee recently approved the restrictions contained in the Department of Nursing and Patient Services' *Medication Administration Policy* (MA-005). The complete policy, which is designed to provide guidelines for the safe and effective administration of medications, can be found by going to the policies and procedures link on the Portal, selecting ***SUF***, and then ***Nursing***. There are 5 polices under Medication Administration; the *Medication Administration Policy* is the policy approved by the P&T Committee.

This policy has many elements, but the P&T Committee focused on the restrictions placed on the administration of specific drugs (Appendix C of the policy). The drugs listed are usually intravenous and/or high-risk (see table). A few oral and other routes are also listed for high-risk drugs. Often, the restrictions limit where a drug can be used (eg, an intensive care unit (ICU)).

Any policy affecting drug use, including drug administration, must be approved by the P&T Committee. Restrictions in this policy had not been previously approved by the P&T Committee. As new restrictions are added to this policy, it will be updated.

The policy also states, "only the intended amount of a single dose of a parenteral drug for intermittent infusion should be prepared and administered." The addition of this language is intended to minimize the risk of overdose when more than the intended dose is "hung."

Drugs with administration restrictions in MA-005

23.4% hypertonic saline	eptifibatide	nitroglycerin infusion
abciximab	esmolol	nitroprusside
adenosine	etomidate	norepinephrine
alteplase IV/IA	fentanyl infusion	oxytocin
aminocaproic acid	haloperidol IV	pancuronium
amiodarone IV	heparin infusion	pentobarbital
antivenin	hydromorphone infusion	perineural/ paravertebral infusions
argatroban	ibutilide	
bivalirudin	insulin infusion	phenylephrine
calcium chloride IV	isoproterenol	physostigmine
calcium gluconate IV	ketamine	procainamide
conivaptan	labetolol infusion	propofol
dexmedetomidine	lidocaine IV	rocuronium
diazepam	lorazepam infusion	sotalol
digoxin IV	magnesium sulfate infusion	succinylcholine
dobutamine	midazolam	tenecteplase
dofetilide	milrinone	treprostinil
dopamine	morphine infusion	tromethamine
epidural infusions	naloxone infusion	vasopressin
edrophonium	neostigmine IV	vercuronium
epinephrine infusion	nesiritide	verapamil IV
epoprostenol	nicardipine IV	

Drugs & Therapy
B · U · L · L · E · T · I · N

Volume 27, No. 4 April 2013
This publication is produced by the Drug Information and Pharmacy Resource Center under the direction of the Department of Pharmacy Services and the Pharmacy and Therapeutics Committee.

EDITOR, DRUGS & THERAPY BULLETIN
Randy C. Hatton, PharmD

DIRECTOR, PHARMACY SERVICES
Thomas E. Johns, PharmD

CHAIRMAN, PHARMACY & THERAPEUTICS COMMITTEE
I. David Weiner, MD
Professor of Medicine and Physiology and Functional Genomics
University of Florida, College of Medicine

EDITING, DESIGN, & PRODUCTION
Shands HealthCare's Publication Svcs.

FOR MORE INFORMATION, VISIT US ONLINE
http://professionals.ufandshands.org/resources/drug-information-and-pharmacy-resource-center/bulletins/

SHANDS
Shands at the University of Florida
DRUG INFORMATION SERVICE
PO Box 100316
Gainesville, FL 32610-0316

NON-PROFIT ORG.
U.S. POSTAGE
PAID
GAINESVILLE, FL
PERMIT NO. 94

Formulary Categories, *from page 1*

reasonable, these drugs would be listed in the *Formulary*, regardless of cost.

Drugs not fitting into any of the previous nonformulary categories are simply nonformulary. They will be obtained, if needed, but there may be a delay of as much as 72 hours.

The figure gives an overview of the categories listed above. Efficiently handling nonformulary drugs is important in delivering high quality patient care. The system outlined above has an established record of efficiently delivering needed therapies to patients. For interchanges, nonformulary and not available, nonformulary and not used, and high-priority nonformulary drugs, Epic entries should help guide the prescriber.