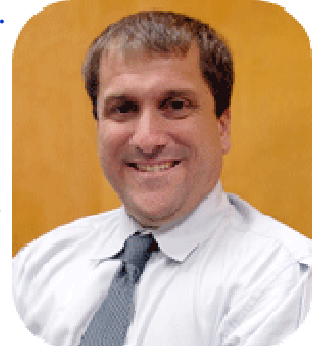


## Antimicrobial Stewardship: Implementing A Team Approach

Jose Montero, M.D.



Tampa General Hospital has initiated an Antimicrobial Stewardship Program with the primary goal of optimizing clinical outcomes in our patients while minimizing unintended consequences of antimicrobial use. We will be now joining some of the nation's leading institutions who have developed successful antimicrobial stewardship programs. Antimicrobial agents have been used to treat numerous infections for many years, but we recognize that there is a paradox with antimicrobial agents, that the more an agent is used, the less useful it may become in the future due to antimicrobial resistance. In addition, the pipeline for new antimicrobials is quite limited. Therefore, it is incumbent upon us to utilize what agents that we do have as wisely as possible.

Antimicrobial stewardship is defined as a rational, systematic approach to the use of antimicrobial agents in order to achieve optimal outcomes. This means using the right agent, at the correct dose, for the appropriate duration in order to cure or prevent infection, while minimizing toxicity and emergence of resistance. One must note that although costs are important to any healthcare institution, the focus of antimicrobial stewardship is the patient and public health.

Leading this program at TGH is Jose Montero, MD and Ripal Jariwala, PharmD. Dr. Montero is an Associate Professor in the Division of Infectious Diseases at USF and has been an active physician member at TGH for over a decade. Ripal Jariwala is an Infectious Diseases Clinical Pharmacy Specialist recently hired by TGH to help lead this program.

The planned core of our Antimicrobial Stewardship Program is concurrent or postprescription review to provide feedback to prescribers. We will review patients on antimicrobials and assist in determining appropriate spectrum, dosing, and duration once further clinical information is available if intervention is warranted. "De-escalation" is a goal whereby once a patient's clinical picture has clarified, broad spectrum antibiotics can be tailored to an appropriate narrow spectrum coverage for the patient's specific infection.

Central to the argument for promoting good antimicrobial stewardship is the growing concern about antimicrobial resistance and patient safety. Studies have established a strong relationship between antimicrobial use and resistance. Appropriate antimicrobial drug use should not be interpreted simply as reduced use, because these drugs offer valuable benefits when used appropriately. It is overuse and misuse that must be decreased to reduce the selective pressure favoring the spread of resistance.

The Antimicrobial Stewardship Program will be involved in many quality initiatives. Some examples include assisting with issues regarding Surgical Care Improvement Project (SCIP) measures, development of guidelines and clinical pathways, and educational opportunities. There will be collaboration with Microbiology and Infection Prevention. Progress and issues related to this program will be reported through the Pharmacy and Therapeutics committee.

## Reporting of Surgical Site Infections to the National Healthcare Safety Network

Peggy Thompson, RN, BSN, CIC, Director, Infection Prevention

Beginning in January of 2012, hospitals who elect to receive funding from the Centers for Medicare & Medicaid Services (CMS) will need to be reporting certain surgical site infections (SSI) to NHSN. These rates will be risk adjusted and published for public viewing. The procedures that are being considered for public reporting include the following:

**Coronary artery bypass grafts**

**Total hip and knee arthroplasty**

**Colon surgery**

**Hysterectomy – abdominal and vaginal**

**Peripheral vascular bypass grafts**

Although we don't know yet which procedures CMS is going to require for reporting, we do know that we are going to be using the NHSN definitions in the reporting requirement. The definitions are divided based on the significance of the infection.

For any infection to be considered a surgical site infection, the following criteria must be met:

In procedures where no implant is involved, the infection must present within 30 days of the procedure.

In procedures involving an implant – including for example orthopedic devices, sternal wires, and mesh implants, the infection must present within 1 year of the procedure. This only applies to deep or organ space infections.

The infections are then subdivided into the following categories:

**Superficial incisional surgical site infection**– involves only skin and subcutaneous tissue of the incision and patient has one of the following:

Purulent drainage from the superficial incision

Organisms isolated from an aseptically obtained culture of fluid or tissue from the superficial incision

At least one of the following signs or symptoms of infection are present: pain or tenderness, localized swelling, redness, or heat, and superficial incision is deliberately opened by surgeon and is culture positive or not cultured. A culture negative finding does not meet this criterion

Diagnosis of superficial incisional SSI by the surgeon or attending physician.

Stitch abscesses are not included in this description.

**Deep incisional surgical site infection** – involves deep soft tissues (e.g. fascial and muscle layers of the incision) and patient has one of the following

Purulent drainage from the deep incision but not from the organ/space component of the surgical site

A deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture positive or not cultured when the patient has at least one of the following signs or symptoms: fever greater than 38 degrees C. or localized pain or tenderness.

A deep incision spontaneously dehisces or is deliberately opened by a surgeon and is culture positive or not cultured when the patient has at least one of the following signs or symptoms: fever greater than 38 degrees C. or localized pain or tenderness.

An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination

Diagnosis of a deep incisional SSI by a surgeon or attending physician

**Organ/ space infection** – may involve any part of the body excluding the skin incision, fascia, or muscle layers that is opened or manipulated during the operative procedure – e.g a subdiaphragmatic abscess occurring after an appendectomy. Patient must have one of the following:

Purulent drainage from a drain that is placed through a stab wound into the organ/space

Organisms isolated from an aseptically obtained culture of fluid or tissue in the organ/space

An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination

Diagnosis of an organ/space SSI by a surgeon or attending physician

**The full report of all of the definitions can be found in the following reference: Am J. Infect Control 2008;36:309-32.**

*You are invited to attend a continuing medical education program:*

## *Incretin-Based Therapies: New Options for Glycemic Control in Type 2 Diabetes*

**DATE:** Wednesday, November 10, 2010

**SPEAKER:** Frank Svec, M.D., PhD.  
Clinical Professor of Medicine  
Interim Chief, Section of Endocrinology  
Tulane University School of Medicine  
New Orleans, LA (Former Chief of Endocrinology at LSU)

**TIME:** 12 noon presentation

**LOCATION:** Tampa General – 1 Tampa General Circle – Tampa, FL  
Room: B104 (in Food Court)

**TARGET AUDIENCE:** This conference is designed for primary care physicians, endocrinologists, hospitalists, diabetes educators, nurses and allied healthcare professionals charged with the care of patients with diabetes.

**COURSE OBJECTIVES:** Upon completion of the course, the participants should be able to:

- Review the physiologic defects of glucose control in type 2 diabetes
- Analyze the therapeutic potential of incretin hormones when compared to existing diabetic therapies
- Evaluate new paradigms for the management of glycemic control
- Discuss the impact and potential outcomes of incretin mimetics in the management of type 2 diabetes

**ACCREDITATION:** EXCEL Continuing Education is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. This activity has been planned and implemented in accordance with the essential areas and policies of the ACCME.

**CREDIT HOURS:** EXCEL Continuing Education designates this educational activity for a maximum of **one AMA PRA category 1 credit**<sup>™</sup>. Physicians should only claim credit commensurate with the extent of their participation in the activity.

EXCEL CE is accredited by the FL Board of Nursing (provider # 50-619) and designates this activity for **1 nursing contact hour**. EXCEL CE is also accredited by the FL Board of Physician Assistants and designates this activity for **1 AMA Category 1 Credit**.

**FACULTY DISCLOSURE:** Dr. Svec has indicated that he has no relevant financial relationship to disclose.  
Supported through educational grants from:

**Bristol-Myers Squibb and AstraZeneca, Lilly USA, LLC, Amylin – Lilly, Boehringer-Ingelheim**

## TGH Pharmacy & Therapeutics (P & T) Committee UPDATE: August 2010

Earnest Alexander, Pharm.D, Pharmacy Manager

*\*Please visit Micromedex – FORMULARY ADVISOR for more details of the latest formulary decisions and access to the TGH Formulary. Micromedex – FORMULARY ADVISOR is available on any computer in the hospital with an internet browser!*



### High Impact Medication Initiative Update

Current (FY 2010 to date) drug utilization at TGH was reviewed and compared to last year's (FY 2009) utilization. Medications that have been the focus of P & T Committee actions showed a decrease in overall cost to TGH compared to last year (FY2009). Intravenous immune globulin (IVIG) has had the biggest increase compared to last year (FY 2009), with approximately \$500,000 more this fiscal year to date compared to last year. Other significant increases were noted in use of Evicel, Cytogam, and aztreonam. As a result, the recommendation of the committee was to closely evaluate IVIG and Cytogam utilization for appropriateness based on guidelines and evidence and continue to evaluate Evicel and other hemostatic usage with the OR Hemostasis workgroup. Additionally, aztreonam utilization will be reviewed by the Antimicrobial Stewardship Program (ASP).

### Pharmaceutical Shortage Update

The most recent drug shortage list (updated and available through Micromedex Formulary Advisor) was evaluated by the P & T Committee. All institutions (including TGH) are impacted by the growing number of agents that are in short supply. The most critical shortage discussed was amikacin. Dr. Montero (Antibiotic Stewardship Program) has aided in the development of criteria for usage that involve reserving the agent for multi-drug resistant organisms. This ensures the agent is being used in the most appropriate setting and when other alternatives have been exhausted. Bristoject shortages were discussed along with the reservation of these syringes for code carts. Limited desmopressin supply has led to reservation of the agent to the operating room and pediatric diabetes insipidus. Many other products were discussed. The role of the Committee is to approve alternative therapies and therapeutic interchanges in shortage situations. The Committee has developed a plan to continue to track shortages and optimize communication of planned changes in practice/process to pharmacy, nursing, and physicians. Additionally, a policy is being developed for the management of drug shortages.

**Please visit Micromedex – FORMULARY ADVISOR for a complete and current list of pharmaceutical shortages**

### Basal bolus insulin comparison to sliding scale in diabetes patients

John Allen, Pharm D., PGY-2 critical care pharmacy resident presented the findings of his research project that compared the effectiveness of a basal bolus insulin (BBI) regimen versus a sliding scale insulin (SSI) regimen in hospitalized diabetic patients as the primary objective. The secondary objective was to assess insulin prescribing patterns in hospitalized diabetic patients and compare differences in morbidity by evaluating the level of hyperglycemia/hypoglycemia and length of stay between the groups. The methodology was a retrospective chart review with 44 patients in each group.

The study revealed that SSI achieved lower mean serum blood glucose (SBG) across hospital stay, however it was not statistically significant. BBI achieved greater SBG change from baseline compared to SSI despite having a higher baseline SBG. Hospital length of stay and days within normal SBG range were similar between the two groups. Hypoglycemia was observed more in the BBI group.

Based on the results of the study, the researchers' recommendations to the committee are that clinicians should consider a change from SSI to BBI as a targeted intervention in diabetic patients with sustained hyperglycemia on SSI over a 72 hour period. The results of the study are to be further discussed with endocrinology, diabetes education, and other key prescribers.

# TGH Research Grant Funding Announcement

Calling all research investigators! TGH is offering research grant opportunities for any staff and affiliates in good standing that are interested in performing a clinical research project. In an effort to enhance TGH research efforts and to support investigators with great ideas in improving patient care, funds are being made available to support research projects with costs of \$500 to \$10,000.

Any TGH staff or affiliate is eligible – anyone - students, physicians, nurses, support staff, pharmacists, dietary, environmental services, anyone with an idea on how to improve patient care. A formal grant application must be completed for consideration. Please send an email requesting an application to [grants@tgh.org](mailto:grants@tgh.org)

**Application Deadline is December 1, 2010**



WE'RE ON THE WEB  
[WWW.TGH.ORG](http://WWW.TGH.ORG)

## TGH Welcomes our new Physicians

The physicians below were added to TGH staff: 9/30/2010

Sally F. Alrabaa, MD	Infectious Diseases
Martin K. Gelbke, MD	Orthopaedic Surgery
John P. Gonzolvo, MD	General Surgery
Sumit Gupta, MD	General Medicine
Hussein K. Osman-Mohamad, MD	General Surgery
Amit P. Pathak, MD	Hospital Medicine
Sowsan H. Rasheid, MD	General Surgery
Sunil-Kumar S. Reddy, MD	Neurology
Arthi Sanjeevi, MD	Gastroenterology
Jeffery D. Watson, MD	Orthopaedic Surgery
Robert D. Wilson, DO	Neurology



This newsletter is produced by Tampa General Hospital's Quality Improvement Department. All comments, responses or suggestions are welcome and should be directed to:

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Sr. V.P. &  
Chief Medical Officer  
Tampa General Hospital,  
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Tampa, Florida 33601

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### **KUDOS TO OUR PHYSICIANS!**

Congratulations to the following physicians who were recognized by their patients in the form of personal letters to TGH leadership.

**Dr. Mark Rolfe, Dr. Tarik Haddad**

