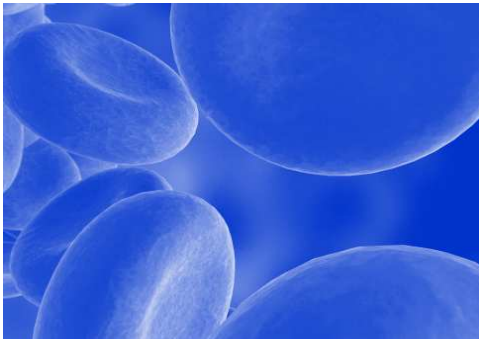


Catheter-Related Blood Stream Infection (CR-BSI): Improving Patient Safety

Martha A. Heath, MS, RN, CNS, CCRN, CNRN



Reducing hospital-acquired infections has become a mandate ranging from the general public to the Centers for Disease Control. According to the CDC, hospital-acquired infections attribute an additional \$5 billion to the overall healthcare costs of the United States. A urinary tract infection averages \$2,000 in additional hospital expenditures, while pneumonia costs approximately \$20,000. Even more costly, catheter-related bloodstream infections can reach as high as \$50,000 per episode and an attributable mortality of 18%! In

light of these additional costs, patient safety and care are at stake resulting in increased hospital lengths of stay, increased mortality and worsening outcome at discharge.

Tampa General Hospital recognizes the importance of protecting our patients from unnecessary infection and is aggressively rising to the challenge. Considering the costs to be life, disability and finances, Catheter-Related Blood Stream Infections (CR-BSIs) have garnered additional attention at Tampa General. Tampa General Hospital has teamed up with the University Healthsystems Consortium (UHC) to identify ways to reduce CR-BSIs even further.

This project consists of clinicians representing the spectrum of medicine, nursing and risk management. The team routinely convenes to share strategies with other UHC members as well as to discuss TGH-specific strategies and goals. The strategic plan recently developed included an evidence-based checklist to serve as a guideline for catheter insertion. Daily rounding on a “pilot” intensive care unit has been incorporated to identify patients with central venous catheters. This team discusses necessity of the line with nurses and physicians. As a result, an immediate reduction in the number of catheter days has been realized. The rounding event has also provided an opportunity for education among various staff members. Surprisingly, the practice has influenced questioning the necessity of all patient indwelling lines and catheters.

Performance practice guidelines to consider for prevention of CR-BSIs are as follows:

- Utilize a central line cart specifically containing all necessary supplies for insertion of the line.
- Ensure consent for the procedure is obtained.
- Utilize a central line checklist for insertion procedure.

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(Continued from page 1)

- Verify a “time out” is performed prior to the procedure.
- Ensure maximal barrier precautions are maintained:
 - Person inserting and/or assisting with the line must wash hands.
 - Person inserting and/or assisting with the line must wear sterile gloves, sterile gown, cap, & mask.
 - Ensure a full sterile body drape for patient.
- Use chlorahexidine prep for insertion.
- Avoid a femoral site for line placement. If necessary, change site from the femoral location as soon as possible.
- Use a transparent dressing on site.
- Confirm placement with follow-up chest x-ray.
- Assess line necessity daily.
- Inspect site daily.

As part of this project, we will be monitoring our compliance with the use of the central line documentation form, with a goal of 100%. Improving patient care and safety is a team responsibility. Protecting our patients from unnecessary harm can lead to better outcomes, shorter hospital stays and limiting expenditures.



Standard Dosing for Titratable Drips in the Adult Critically Ill Population

Maresa Glass, PharmD, BCPS, Critical Care Pharmacotherapy Specialist

The Institute for Safe Medication Practices (ISMP) identified that a lack of standard dosing methods contributes to errors with IV medications.

The Following are Safe Practice Recommendations from ISMP

1. Standardize dosing methods. Look for variable dosing methods for the same medication in your hospital, and select a standard way to dose the drug for adults and a standard way to dose the drug for pediatric patients. List the standard dosing methods on preprinted or electronic order sets in which applicable drugs appear.

TGH has already standardized the dosing of infusions for pediatric ICU patients. Upon recommendation of the Critical Care Committee and the Critical Care Steering Committee, TGH will standardize the dosing of titratable infusions for adult critically ill patients. Orders written for a non-standard dosing regimen will be clarified with the prescriber.

2. Use fully functional smart pumps. Use of smart pumps that provide dosage error-reduction software will help avoid harmful mix-ups among various dosing methods for the drugs in the pump’s library.

Currently the Alaris smart pump at TGH has 2 different line items for the following medications to allow for selection of different dosing regimens (mcg/min vs mcg/kg/min): Epinephrine, Nitroglycerin, Phenylephrine, and Norepinephrine.

(Continued on page 3)

Standard Dosing for Titratable Drips in the Adult Critically Ill Population (Cont.)

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This significantly increases the risk of a dosing error. It also creates confusion among the staff when determining the clinical response of the patient to the medication.

> **The Critical Care and Critical Care Steering Committees have determined that weight-based dosing regimens are to be used when writing orders for continuous infusions of the following medications: epinephrine, nitroglycerin, norepinephrine, phenylephrine, and propofol**

Generic Name	Brand Name	Approved Dosing Units	Usual Dosing Range
Epinephrine	Adrenalin®	mcg/kg/min	0.05-0.3 mcg/kg/min
Nitroglycerin	Tridil®	mcg/kg/min	0.25-1 mcg/kg/min
Norepinephrine	Levophed®	mcg/kg/min	0.05-0.3 mcg/kg/min
Phenylephrine	Neosynephrine®	mcg/kg/min	0.4-9.1 mcg/kg/min
Propofol	Diprivan®	mcg/kg/min	5-100 mcg/kg/min

- > **A hospital-wide educational campaign began in May 2009**
Reference cards with dosing information will be available for prescribers, nursing, pharmacy staff
The ICU drip book reference will be available as a hardcopy in all ICU areas and the ER as well as electronically within the Micromedex Formulary Advisor
- > **Approximately 60 days after the education has begun, the non-weight based dosing method will be removed from the Alaris pumps**
Both the adult critical care profile and the anesthesia mode will be changed
- > **Orders written for non-standard doses will be clarified with the prescriber**
Orders will be clarified at the bedside by nursing as well as by pharmacy when the order is received



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TGH Welcomes our new Physicians



The physicians below were added to TGH staff March 31st

Apologies to Dr. Mark L. Kayton, who was listed in the May issue as a General Surgeon and is actually a Pediatric Surgeon.

Amanda N. Alvelo-Malina, MD
Jonathan P. Alviar, MD
Umesh S. Lingegowda, MD
Jacinto B. Moya, MD

Obstetrics & Gynecology
Internal Medicine
Cardiology
Anesthesiology

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. Eric Sauvageau
Dr. Selim Benbadis
Dr. Mark Greenburg



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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