Sliding Away Towards Poorer Glucose Control

The classic insulin sliding scale, handed down from generation to generation of interns and medical students, is inadequate inpatient therapy. In a retrospective study of 171 adult medical patients by Queale et al, both "aggressive" (starting 2 units of regular for fingerstick readings of 150-200) and "conservative" (starting 2 units of regular at 200) insulin sliding scales were found to have no statistically significant effect on the relative risk for hyperglycemia in those with standing oral hypoglycemic or insulin regimens. In those without standing treatment regimens, insulin sliding scales increased the risk of hyperglycemia 3-fold.

Rather than ordering a sliding scale, it may be more effective to adjust the standing regimen, particularly if there is evidence that the outpatient regimen is sub-optimal. If there is no pre-existing regimen, then it would be a good opportunity to start a new regimen and evaluate its efficacy while the patient is in the hospital.

Alan Malabanan

Queale, William S. MD, MS. Seidler, Alexander J. PhD. Brancati, Frederick L. MD, MHS. Glycemic Control and Sliding Scale Insulin Use in Medical Inpatients With Diabetes Mellitus. *Arch of Int Med 157(5):545-552*

Give Us Your Tired, Your Poor, (And Your Warm Winter Clothes)

It's that time again when the winter winds come a-howling and the cry goes out for warm clothes donations for our patients. Have you been resisting the prospect of cleaning out those closets – that sweater Aunt Millie gave you in 1986 that you never wore; the flannel shirt that makes you want to sing "I'm a lumberjack and I'm ok…;" that warm winter coat collecting dust in your closet because you wouldn't be seen in anything except black leather? We want to help you help us! Bring those warm clothes in. Get that warm all-over feeling of doing something wonderful at this time of year.

Bring all clean donations to MP 6W and/or page Jeff Greenwald (6912). *Jeff Greenwald*

Aspirations in Medicine

The coordinated function of the vocal cords and multiple ligaments and muscles in the pharynx are critical for airway protection. Multiple disorders can result in dysfunction of the above structures leading to dysphagia, an issue often identified by nursing during po medication administration in addition to arising on medical history taking.

The common tendency to associate an adequate gag reflex with safe swallowing is not established in the literature or on bedside evaluations. Patients admitted with suspicion of aspiration pneumonia or with mental status changes should have their swallowing ability considered and possibly formally evaluated before oral intake is begun, including medications. *Do not order "NPO x meds" in this situation.*

Sahar Khalilieh

THE INPATIENT TIMES

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The Inpatient Times

All the News that makes you more fit to treat

Vol 1; January 2003

The Physical Examination: Past and Future

When Rene Theophile Hyacinthe Laennec first attempted to understand the "action of the heart" of an overweight patient in 1816 by amplifying sounds through a tube, he had little notion that this method would become a routine part of the physical examination. With that simple approach, auscultation was born and, with it, the stethoscope as central tool and symbol of the profession. Auscultation complemented and enriched the other elements of the physical examination essential to 19th century practitioners: inspection, palpation, and percussion.

Over time, the physical examination has suffered largely because other noninvasive techniques have begun to take its place. Equally important, there is a growing deficiency of senior physicians truly skilled in the practice and instruction of physical examination. Even in experienced hands, a careful examination takes time, a precious commodity for all of us.

In recent years, the diagnostic accuracy of the physical examination has been assessed in small but carefully performed studies that compare it to a gold standard noninvasive test. The results of these studies suggest that the physical examination is not effective in diagnosing many illnesses. While I do not quibble with these results, I do question their interpretation: poor performance of the physical examination by participating physicians should not be interpreted to indicate a problem intrinsic to the examination. Individuals inadequately schooled in examination techniques will perform them poorly. The physical examination is only as good as the eyes, ears, hands, and brain of the person conducting it.

A variety of noninvasive techniques have been evolving that are believed to be superior substitutes for the physical examination. One of these, the portable or hand-held ultrasound imager, holds great promise, and its development, I believe, has the potential to change bedside diagnostics greatly. Small trials showed that it performs well in diagnosing abdominal aortic aneurysm, left ventricular dysfunction, and aortic stenosis. Again, however, this technique is only as good as the skills of its practitioners, and will take time to learn and perform. Also its cost will not be trivial: current models range from $10,000 to $40,000.

Physicians are conservative by nature. This trait tends to delay their adopting new diagnostic or therapeutic approaches unless they are unequivocally superior to currently accepted standards. It is too early to tell if the hand-held ultrasound imager will meet this criterion. Even if it does, it should not substitute for the physical examination. As diagnosticians, we are trained to integrate data derived from many sources, eliminating those that are internally inconsistent and, on occasion, focusing on a single piece of information that clinches the diagnosis. Even more important, laying on hands is essential for establishing a bond of trust with our patients and for the healing process itself. For these reasons, I suggest that we continue to follow the progress of the hand-held ultrasound imager and to incorporate it in our diagnostic armamentarium when its cost is no longer prohibitive. As with all other diagnostic tests, however, it is meant to enhance our limited senses and, thus, *complement* the physical examination, not *substitute* for it.

Joseph Loscalzo

Inpatient Alcohol Abuse Interventions: An Ongoing Study

Brief physician counseling can be effective for alcohol problems. But some studies of this approach have shown no beneficial effect and it has not been adequately studied in hospitalized patients. Hospitalized patients may provide a "teachable moment," and be receptive to hearing about changing their drinking. On the other hand, their alcohol problem may be too severe, or they may have different priorities.

The objective of Project ASAP (Addressing the Spectrum of Alcohol Problems) is to test whether screening and brief intervention for hazardous, harmful, and dependent drinking leads to improved alcohol-related outcomes and is cost-effective. The study is supported by the National Institute on Alcohol Abuse and Alcoholism (NIAAA). In this study we screen all medical admissions and randomize hazardous drinkers to a brief intervention tailored to the severity of their problem by a psychologist or usual care to see if the intervention decreases drinking or links patients to alcoholism treatment.

The study does not require attendings, residents or nurses to do anything other than provide their usual care (no referrals are needed as the research staff screen all admissions). You will likely meet our Staff Researchers Marian Perez and Shereen Mohiuddin, and Project Manager Naomi Freedner, as they recruit and interview patients on the inpatient medicine services. They check with residents to assure that no inappropriate patients are approached. In addition, you may meet our study psychologists as they counsel patients, or, when with patient permission, they contact you to summarize their discussions and recommendations.

Richard Saitz

Post-Discharge Clinic: Easing the Transition Back to Primary Care

Many of you are not familiar with the Post-Discharge Clinic, established by the BMC hospitalists in August of 2000, based on the model originating at the University of California at San Francisco. It was created for patients who are being discharged from the hospital who do not have a → Primary Care Provider (but are *assigned* to a new provider at the time of discharge with a follow-up appointment scheduled) or cannot get a timely appointment with their previous PCP (e.g. on vacation, clinic booked for months, etc.). To be eligible for the clinic, patients *must have a specific medical issue*, such as checking resolution of a cellulitis, following-up a creatinine, or titrating an ace-inhibitor, that requires timely follow-up. The patient will be seen by a hospitalist, usually within 1-2 weeks of discharge. It is a one-time visit only, with subsequent PCP follow-up. The Logician documentation for that visit will then assist the PCP in resuming care for the patient.

The clinic is held in the DOB 5th floor Primary Care Group (638-7970) every Tuesday morning, accommodating patients discharged from either East Newton or the Menino Pavilion. We hope eventually to open another clinic in the ACC for the convenience of our Menino patients. With the Discharge Summaries now available on SCM, we can easily review the patient's hospital course and identify the issues requiring immediate follow-up. In order for the hospitalists to be able to access the Discharge Summary, however, it must be signed by the ward attending.

Flyers are posted by the computer workstations on the wards with further details, including how to schedule your patients. Please feel free to contact any of the hospitalists with questions.

Nancy Torres-Finnerty

Fast Facts: The Funny Face

Supranuclear fibers for the upper facial muscles project to both the ipsilateral and contralateral facial nuclei. Supranuclear fibers for the lower facial muscles, however, travel only to the contralateral facial nucleus. This explains how unilateral supranuclear lesions characteristically spare the function of the upper face.

REMEMBER: Upper motor neuron lesions spare upper half of face.

Emotional facial motion is provided by extra-pyramidal input to the facial motor nucleus. If a supranuclear lesion spares this input, emotional facial expressions (e.g., surprise) are generally preserved despite facial palsy. *Subha Ramani*

New Medicine Guidelines for Oral Presentations

You are post-call, exhausted and desperately want to start your work for the day so you go home. The last thing you want to do is spend a long time on presenting each patient in detail! However, oral presentations are a valuable part of both medical education and patient care. For the presenter, an oral presentation is an opportunity to re-review the case and organize and demonstrate your thought process. For the resident and/or attending, it is an opportunity to learn about the patient, guide diagnostic and therapeutic interventions, and plan topics for teaching. For the other members of the team, it becomes an opportunity to learn from patients they are not actively caring for. For the patient, it is an opportunity to allow their care to be guided by a collaborative team.

One frustrating aspect of oral presentations is the seemingly different expectations made by different residents and attendings. In an effort to address this problem, a group of faculty has been working to codify guidelines for presentations. With the input of Dr. Loscalzo, Dr. Battinelli, and many others, we constructed guidelines that address the content, order, and timing of this presentation. Thanks to the handy pocket card (reproduced at right just in case you lost yours) we can now focus on getting the most for ourselves and for our patients from a presentation, rather than trying to figure out what each resident and attending wants!

Eric Green

Using The Pharmacy Website

The pharmacy department has its own website with lots of helpful drug information including, but not limited to antibiotic dosing in renal dysfunction and Pharmacy & Therapeutics Committee approved medication guidelines. Report Adverse Drug Events or read the pharmacy newsletter all on-line! To access the website go to www.internal.bmc.org, click on departments and select pharmacy. If additional questions arise or help is needed, please contact the pharmacy.

Gail Burniske

Oral Presentation Guidelines for the Newly Admitted Patient

Boston U. Department of Medicine

Overview

- Make a convincing case for the important problems, the differential, and the plan.
- Make it structured, organized and targeted as it should take only 3-5 minutes.

Opening Statement

- **Brief statement** of chief complaint and why patient was admitted.
- Include pointed and **relevant historical information**.
- Include name of the **patient's PCP** and site of care.

Source

- Briefly note if/why the patient cannot give reliable history.
- Note any information sources besides the patient.
- No comment assumes that all info came from a reliable patient.

Present Illness

- **The differential diagnosis you considered should guide what you include.**
- Consider starting with: "…usual state of health until…"
- Be chronologically organized and **clear without analyzing**.
- **Remember OPQRST**: **O**nset, **P**alliate/**P**rovoke, **Q**uality, **R**egion/**R**adiation, **S**ymptoms (associated), **T**emporal aspects.
- **Include elements** of past history (with supporting studies and therapeutic interventions), meds, family history, social history (including psychosocial factors) **that specifically contribute to the Present Illness.**
- Pertinent positives and negatives to make the listener understand your Ddx.
- **Pertinent = relevant to the differential diagnosis and management considered.**
- Only include E/R course if it *significantly affects/alters triage or immediate treatment decisions prior to coming to your unit*. Report facts and events, NOT E/R diagnoses.
- For ICU or other transfers, summarize course using problem list.

Other History

- Important PMH (with supporting history/data).
- **Exclude minor diagnoses** without impact on current care.
- Important meds with doses of relevant ones. Omit unimportant medications.
- Allergies
- Focused FH/SH/ROS. Do not repeat previously stated information.

Physical Exam

- Always include **general appearance and specific vitals**
- Include **pertinent elements of exam and any abnormal findings**.
- Remainder may be noted as "noncontributory."

Labs/Data

- Include **pertinent or otherwise significant labs/studies**
- Start with basic blood tests first.
  CBC→Chem→Coags→Urine→ECG→Rad→Other
- Ok to mention other tests as being "normal."

Synthesis

- Consider beginning with: "And in summary…" but…
- **Assess and synthesize**, don't summarize and regurgitate.
- **Demonstrate *YOUR* thinking** about the patient specific differential diagnosis.
- If multiple issues present, weave together or discuss lesser issues in problem list below.

Enumerated Problem List

- Start with **most important problem first**.
- Use **most specific label** for the problem you can.
- Avoid labeling a problem solely by its system.
- **Include your understanding of the cause** of the problem.
- **Include a specific plan** for addressing it.

Active Recruitment for REVIVE Study on CHF:

There is good data that positive inotropes provide short-term hemodynamic support and symptom relief, but have caused increase in mortality in several trials, particularly due to their pro-arrhythmic potential.

A number of preliminary studies with Levosimendan have demonstrated safety and improvement in symptoms of CHF and suggested survival benefit compared to dobutamine and placebo. Levosimendan is a calcium-sensitizing agent with positive inotropic action via its Ca-dependent binding to cardiac troponin C. It is also a vasodilator via opening of ATP dependent K-channel in vascular smooth muscles. At high doses it also selectively inhibits phosphodiesterase III, but this feature does not contribute to the inotropic action at doses used in the study. Hence levosimendan increases myocardial contractility, reduces filling pressure and dilates peripheral and coronary blood vessels. It has an active metabolite that has a half-life of 75 hours and reaches peak concentration 1-4 days after cessation of the infusion, thus having long lasting effects.

The most common adverse events have been hypotension and headache both occuring in about 5% of patients. Combined tachycardia, extrasystoles and atrial fibrillation were reported in 4.5%. Nausea and dizziness were seen in 2% and 1.4 % respectively.

We are currently recruiting for an exciting new inpatient study called REVIVE. This is the Randomized, multi-center, EValuation of Intravenous leVosimendan Efficacy vs placebo in the short-term treatment (24 hours) of decompensated heart failure patients. The objectives are improvement of symptoms and quality of life as well as decrease re-hospitalization for heart failure. The study also looks at survival benefit on this therapy compared to placebo.

Pateints who may be considered for REVIVE are those hospitalized for worsening CHF within 48 hours, having an LVEF ≤35%, and still experiencing dyspnea at rest despite one dose of IV

Continued →

lasix. If you think you have a potential candidate for the study please contact or you have any questions regarding the study, please contact any one of the following:

- Cardiomyopathy Fellow: Eugene Kotlyar Beeper # 3004
- Research Coordinator: Lorraine Keane, Beeper # 1615
- Principal Investigator: Flora Sam, MD. Beeper # 1616

Eugene Kotlyar

Decreasing the Scut in Baby Steps: Improving Phlebotomy Services

In a perfect world, the hospital cafeteria would be staffed by the chef from Maison Robert or Blue Ginger, the halls would be decorated with art from the MFA, and interns would do no scut work. Right?

Baby steps, my friends, baby steps.

Paula Kobos, Administrative Director of Laboratory Medicine, sent me the following piece of good news via email.

"We will begin overnight phlebotomy on 2/1/03 and will cover the hours between 7PM and 7AM. We plan to have a couple of 'rounds' times, and beepers for emergencies. I will get the details to you when they are worked out. We do look forward to providing this service.

"As far as blood cultures are concerned, we are looking to see if we can take over their collection. It is proven that the contamination rate is much lower when the specimens are collected by the lab staff, so we are tying to translate this into savings. BMC does collect about 60 sets of blood cultures every day so it is not an insignificant number to add the phlebotomy workload."

In the meantime, while house officers are responsible for blood cultures, remember your sterile technique as every false positive blood culture adds approximately $4000 on average to the patient's hospitalization costs (personal communication: Dan Shapiro). *Jeff Greenwald*

End of Life Corner: Tube Feed or Not Tube Feed

One of the toughest problems we face on the inpatient wards involves whether or not to place a feeding tube in a chronically ill or dying patient. A number of issues arise:

Issue #1: Will tube feeds prevent aspiration pneumonia?

No randomized controlled studies have been published to help us with this issue. Retrospective cohort studies comparing patients with and without feeding tubes demonstrated no difference in rates of aspiration pneumonia. A few studies suggest that jejunostomy tubes may have lower rates of aspiration pneumonia than gastrostomy tubes, but other studies do not support this.

Swallowing studies, such as videofluoroscopy, lack both sensitivity and specificity in predicting who will develop aspiration pneumonia. Swallowing studies are helpful, however, in providing guidance regarding swallowing techniques for populations amenable to instruction.

Issue #2: Do tube feeds prolong life via caloric support?

The data supporting the use of feeding tubes is strongest in patients with a reversible catabolic state (i.e. in acute sepsis). Theoretically, they should also prolong survival in other, chronic illnesses but this has not been proven in the literature. No improvement in survival has been found in patients with advanced cancer or dementia who are given tube feeds. The exception are patients with proximal GI obstruction or patients receiving chemotherapy/ XRT involving the proximal GI tract.

Issue #3: Will tube feeding enhance quality of life or reduce suffering?

Where true hunger and thirst exist, quality of life may be enhanced (such as in proximal GI obstruction). In chronic or terminal illness, however, tube feeding may adversely affect quality of life through increased need for physical restraints, resultant diarrhea (Cont →)

infections, pain, indignity, cost and the denial of the pleasure of eating. Keep in mind that although Free Care will cover the cost of placing a PEG, it does NOT cover the cost of Ensure or similar nutritive supplements needed. Patients who are actively dying usually do not experience hunger or thirst, although dry mouth is a common problem. Dry mouth is not improved by tube feeding or IV hydration.

So, where does this leave us? The evidence supporting the use of tube feeds in chronically ill or dying patients is weak at best, yet this is all we have to go on. Tube feeding should always be considered relative to an individual patient's goals, and physicians should be prepared to discuss tube feeding as an option, bearing in mind what evidence (or lack thereof) exists that tube feeding will help reach such goals. *Jennifer Hughes*

Adapted with permission from Hallenbeck J. Fast Facts and Concepts #10: Tube Feed or Not Tube Feed: June, 2000; www.eperc.org. *For additional references, please see Dr. Hughes.*

Firm Changes: Sickle Cell Service Moves to A

For the last several months, the Sickle Cell Service has acted as the Attending of Record for their patients when hospitalized, irrespective of on which medical teams the patients were placed. Starting in early January, 2003, that has changed.

All patients known to the Sickle Cell Service who are admitted to Medicine's inpatient service will go to Firm A as an assigned patient. Firm A teams are reminded to call Dr. Lillian McMahon (bp: 0400) to discuss the care of these patients upon admission.

Jeff Greenwald

Residents do D/C Summaries Too!

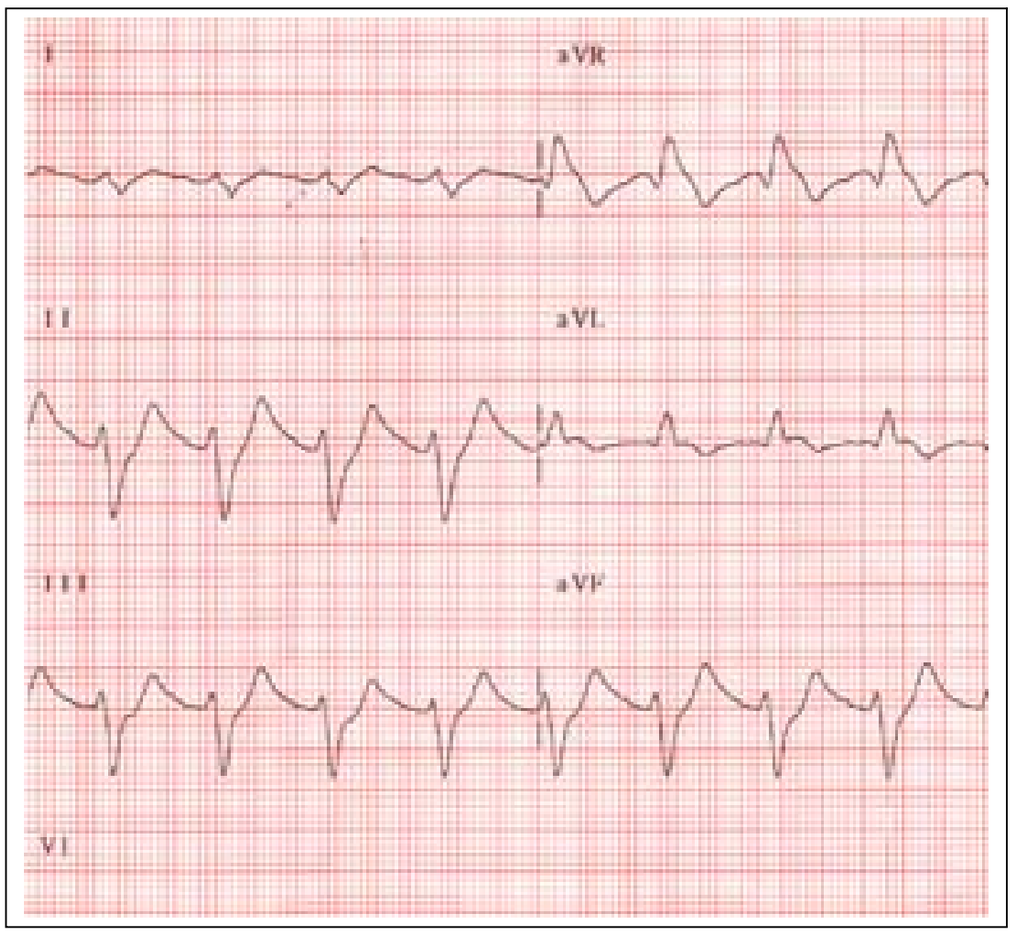
Discharge summaries for the following types of patients should be done by the residents:

- Patients in the hospital >4 days
- Patients transferring to another hospital
- Patients who were transferred to Medicine from an ICU or another service

Remember, residents may choose to do stat discharge summaries on any patient transferring to another hospital in lieu of a typed discharge.

Clinical Pearls: A Case

30 year old male presents with new onset seizures and EKG abnormalities followed by ventricular tachycardia. Below you will find his presenting ECG. What happened to this patient?



See explanation in two pages.
Case provided by Dr. Anto O'Regan

Thromboembolism Study
Now Recruiting at BMC

Venous thromboembolism (VTE) is a major concern in both surgical and medically ill patients. The incidence of VTE in general medical patients is substantial. The risk of VTE is greatest inpatients with known risk factors. These include myocardial infarction, ischemic stroke and admission to the intensive care unit. Other risk factors include age, obesity, history of DVT or PE, immobilization, cancer, heart failure, infectious diseases, lung disease and inflammatory bowel disease. In many patients multiple risk factors may be present, and the risks are cumulative.

Randomized controlled trials involving a comparison of prophylactic LMWH to placebo have shown a substantial reduction in the incidence of VTE in patients who received LMWH. The incidence of adverse events did not differ significantly between the two groups.

The ideal duration of thromboprophylaxis remains unclear. It is likely that the treatment duration of 10±4 days may be too brief in some patients. Extending prophylaxis for 4-5 weeks beyond this duration may result in further risk reduction of VTE in medically ill patients with predisposing factors.

We are conducting a randomized, double-blind, placebo-controlled study to demonstrated the superiority of extended prophylaxis of patients who are given enoxaparin 40 mg sc qd to those who are given a placebo injection (normal saline) both following 10±4 days of initial treatment with enoxaparin 40mg sc in the hospital. All patients will be followed for a period of six months to assess the reduction in their mortality rate at the end of the double-blind treatment period and to assess the incidence of VTE from the time of randomization.

We would appreciate your assistance with patient recruitment. If you have any patients who have limited mobility (even briefly) or who fit any of the risk factors above, please contact Jack Ansell, M.D. (#7257) or Mary Ellen McDonough, R.N. (#5606). *Mary Ellen McDonough*

Buprenorphine (Suboxone® and Subutex®): A New Treatment for Patients With Opioid Dependence

The FDA recently approved the sublingual tablet forms of buprenorphine (Subutex®) and buprenorphine combined with naloxone (Suboxone®) for the treatment of opioid dependence. Pharmacologically burprenophine is related to morphine but it is a partial opioid agonist and offers a number of benefits in the treatment of opioid addiction:

1) Buprenorphine (like most partial agonist) has a low risk of serious side effects or overdose because of it's "ceiling effect"
2) Buprenorphine has very tight receptor binding resulting in only mild withdrawal symptoms when the medication is discontinued because of a "self-tapering" effect
3) The addition of naloxone (Narcan®) decreases the physiologic response (i.e. euphoria) if the tablet is dissolved and injected thus decreasing the risk of parenteral abuse and diversion.

New federal legislation, the Drug Addiction Treatment Act of 2000, gives qualified physicians authority to prescribe buprenorphine in primary care settings for the maintenance and detoxification treatment of opioid addiction. To become qualified physicians must complete the minimum eight-hours of training mandated by Congress. Inpatient use of burprenorphine for patients already on the medication or for patients experiencing opioid withdrawal will not be limited to qualified physicians. However, only qualified physicians should write prescriptions for buprenorphine at the time of discharge.

For more information is available on line at http://buprenorphine.samhsa.gov Both the process of gaining BMC formulary approval for both Suboxone® and Subutex® is underway as well as the development of guidelines for it's use at BMC. Stay tuned....

Dan Alford

Protect your Patients from Adverse Events: Reporting is an Instrument for Change

The quality and safety of medical care in the U.S. has been a major focus of public awareness, especially since the Institute of Medicine's report on medical errors in 1999. It claimed that between 44,000 and 98,000 Americans die each year in hospitals as a result of medical errors. Although the accuracy of this report has been widely debated, our health care system has been challenged to improve the reporting of medical errors, and ultimately, to reduce preventable adverse events.

On a busy inpatient service, antibiotic doses can be delayed, medications are ordered in duplicate, drugs are given despite a known allergy, the creatinine clearance was not calculated… the list goes on. Each of these situations involves many steps at which the adverse event could have been prevented, but the analysis can only begin once it is reported. If we accept that most medical errors do not occur out of malice, carelessness, or ignorance, and that even the most astute clinicians have made significant mistakes, then reporting becomes a critical way to start the process of careful analysis with the goal of protecting our patients.

Each nursing station on the wards has a supply of yellow Adverse Drug Event (ADE) reporting forms, which can be filled out by any health care provider in 2-3 minutes. The forms are collected by pharmacy staff and a root cause analysis is undertaken for each event. These are reviewed monthly by the Medication Safety Team, and over the last 2 years, the ADE rate at BMC has decreased significantly.

The forms are now available on-line. On the BMC Home Page, click on "Departments," then "Pharmacy." On the left side of the Pharmacy Home Page, go to "Adverse Drug Event reporting." There, you may choose from "Medication Safety" or "Adverse Drug Reaction." For further information on the forms or the website, please contact Nancy Dibelka at 414-1724.

Nancy Torres-Finnerty

Fast Facts: Crocodile Tears (Bogorad's syndrome)

Patients with a history of facial palsy (see "Fast Facts: The Funny Face" at left) may develop unilateral lacrimation during meals. After paralysis, regenerating axons from the superior salivatory nucleus intended for the chorda tympani enter the greater superficial petrosal nerve and end up in the pterygopalatine ganglion.

Therefore, during meals, the stimulus for increased salivation results in stimulation of the lacrimal gland, with a resultant increase in tearing.

Subha Ramani

Preparing for Armageddon: The Phase D Disaster Plan

You may have noticed small plastic cards mounted on the walls in nursing stations and conference rooms that include information about fire, security, code calls, chemical spills and other hospital issues of importance. Within these cards is also a section on disasters. As 9/11 has pointed out, knowledge of the standard operating procedures for such events is the responsibility of everyone at Boston Medical Center.

If a massive event were to occur that required not only the combined efforts of the Emergency Departments in the area but also required additional help from non-emergency services from the rest of the hospital, a Phase D disaster would be declared. All employees of would be expected to participate in offering service as instructed by your area directors. The house officers are included in this plan.

In the event that a Phase D disaster is declared, house officers not currently working on an inpatient unit should immediately report to Dowling Amphitheater, if possible, for assignment. All those rotating on an inpatient service should report to their inpatient areas and find the firm chief or a hospitalist from whom to receive additional instructions.

If you have any questions about the Medicine Department's Phase D Plan, please contact Jeff Greenwald.

Jeff Greenwald

Caring for BMC Hip Fractures

November, 2002, marked the one-year anniversary of the Hip Fracture Service. This joint effort between the Emergency Department (ED), Orthopedics, and the Medical Consult Service (MCS) has streamlined the way patients who present with hip fractures get care. The patients are evaluated jointly by Orthopedics and MCS in the ED, with a cohesive management plan subsequently prescribed.

The majority of these patients are cared for on the Orthopedic Service with close management of the medical issues by the MCS. On occasion, the acutely ill patient may be admitted to Medicine with guidance and coordination from MCS on optimizing the perioperative issues. After surgical repair, the patients are cared for on Orthopedic with management by MCS.

The Hip Fracture Service has achieved the goals of improving communication between the services and increasing the number of fractures that are surgically repaired within the first 48 hours. For more information on the Hip Fracture Service and its guidelines please go to www.mednav.net.

David Halle

The Renal Roller Coaster: Medication Dosing in Times of Changing Function

Antibiotics are frequently underdosed in critically ill patients during the recovery phase of acute renal failure. The estimation of creatinine clearance (CrCl) based on serum creatinine (Cr) values assumes that the patient is in steady state (i.e has a stable Cr). This, however, is not the case in acute renal failure. The estimation of CrCl based on a single Cr measurement in this circumstance can lead to overdosing of medications when the Cr is rising and underdosing when the Cr is falling.

The loading dose of any medication is unchanged in the setting of renal failure. Maintenance dosing needs to be reduced for many medications, particularly antibiotics, in settings of low CrCl.

Continued →

When the Cr is rising at a rate of about 1mg/dl per day (e.g 1 to 2 or 4 to 5), one can assume that in an average elderly patient the CrCl is <10cc/minute. Similarly when Cr is consistently falling at this rate (irrespective of the absolute value), one can assume that the CrCl is greater than 10cc/minute and the estimated CrCl certainly falls into the 10-50cc/minute range or possibly even >50cc/minute. Thus, in the circumstance of a Cr falling from 7 to 6 to 5mg/dl over 48 hours one should dose antibiotics (and other medications) for an estimated CrCl of >50cc/min.

Liam Casserly

Clinical Cardiology Pathways: Their Successes and Challenges

BMC has had significant success in insuring that established Best Practice guidelines are applied in the care of our patients with acute MI. The table below compares BMC's 3rd Quarter 2002 performance for 200 AMI patients to hospitals throughout the country who also use the AHA's Get with the Guidelines Database for reporting to JCAHO. Our data is taken from chart reviews for MI patients on both campuses.

Best Practice Guideline	BMC	All Hospitals
ASA at discharge	98.9%	96.5%
β-Blocker at discharge	99.4%	90.5%
ACE-I at discharge	84.4%	67.4%
Smoking counseling	87.7%	72.0%
Rehab recommendation	99.4%	74.2%
BP at discharge ≤ 140/90	81.0%	80.2%
LDL assessment	87.0%	61.0%
Lipid Rx initiated	78.0%	73.0%

BMC's practice guidelines are available in card version from the Chief Residents Office and palm version from Dan Neumann.

REMEMBER: The pathways help promote the highest standard of care. Please remember to initiate their use during appropriate admissions. To discharge a patient from a Pathway, type "discharge" in SCM. Choose "Discharge with Vaccines." Fill out appropriate information and click on the appropriate pathway tab. This way you can discharge the patient with vaccines and from the pathway simultaneously as well as allow us to BMC's compliance with Best Practices in Cardiology measures.

Deborah Whalen

Clinical Case
Diagnosis: Tricyclic Antidepressant overdose.

TCA level 1800ng/ml.

The presence of CNS and EKG changes in the setting of TCA overdose are more predictive of outcome than the actual serum level. Mortality reflects cardiac effects. Typical EKG changes are sinus tachycardia with widening of the QRS complex, various degrees of heart block and a rightward axis (S in LI and R in AVF). The combination of sinus tachycardia and widened QRS can mimic VT. This change reflects both anti-cholinergic effects (ST) and inhibition of the fast sodium channels. Intravenous bicarbonate is cardioprotective acting directly (probably by sodium loading) on sodium channels as well as through elevation of serum pH (aim 7.45-7.5). TCA are not dialyzable. VT is treated with lidocaine and seizures with benzodiazepines. Charcoal is given every 4 hours (if bowel sounds) as TCAs undergo enterohepatic circulation.

ECG interpretation: Sinus Tachycardia 111, RBBB/ LAFB , QRS 163ms

Case provided by Anto O'Regan

Blood Cultures:
Doing them Right!

The results of blood cultures are crucial for the diagnosis of bacteremia and endocarditis. They may also represent the sole proof of the micro-biologic agent of other infections such as pneumonia, meningitis, and cellulitis. Obviously, then, it is imperative that the specimen is obtained properly.

Once a venipuncture site has been identified, it should be disinfected with iodine, chlorhexidine, or 70% alcohol. Traditionally, an iodine solution is used. The disinfectant should be allowed to dry for at least 30 seconds and should **not** be removed (*e.g.*, with isopropyl alcohol) prior to venipuncture. The site may only be palpated after disinfection with a **sterile** gloved finger. The rubber diaphragms of the blood culture bottles should be similarly disinfected.

A blood culture set consists of separate aerobic and anaerobic culture bottles. For adult patients, at least **10 ml of blood** should be inoculated into each culture bottle. It is not necessary (and is unsafe) to change needles during the inoculation process.

At least 2 sets of blood cultures should be obtained for usual diagnostic purposes. As the

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bacteremia of nonvascular infections is intermittent, it is preferable to obtain the second and subsequent blood culture specimens at least 15 minutes after the first, and an interval of one to several hours will probably increase yield.

Blood cultures are clearly indicated for the patient with signs of endocarditis or with significant fever of unclear etiology. Two sets of cultures will provide a diagnosis in 98% and 100% of previously untreated streptococcal and staphylococcal endocarditis, respectively. Additionally, 80-90% of patients with encapsulated bacterial meningitis will have diagnostic blood cultures. Blood cultures may yield *Streptococcus pneumoniae* in up to 25% of case of pneumococcal pneumonia. Remember, blood culturing is currently recommended by multiple clinical and regulatory authorities for patients admitted with pneumonia.

Thus, blood cultures should be obtained at least for patients with signs of endocarditis, significant fever without identified source, nosocomial fever, meningitis, pneumonia requiring hospitalization, pyelonephritis, and septic arthritis. One should also consider them for patients with cellulitis, change in mental status (especially in the elderly), and CVA.

Maura Fagan

Here Ye, Here Ye! The New Chief Medical Residents Are Announced!

One of the most difficult, yet most rewarding tasks, is selecting our Chief Medical Residents. Although there are a large number of qualified candidates, we unfortunately cannot select everyone. For the academic year 2004-2005, we will continue to have five inpatient chiefs and one ambulatory chief. We are pleased to announce the Chief Medical Residents for 2004:

Elisabeth Battinelli	Boston University
Danya Denysyk	Univ. of Virginia
Nameeta Dookeran	Brown University
Thomas Gearan (Amb)	Tufts University
Peter Smith	UMass
Jeremy Sokolove	Boston University

As a reminder, the Chief Residents for our upcoming academic year 2003-2004 are:

Bryan Batch	Univ of N. Carolina
Ari Berman (Amb)	Boston University
Lida Nabati	Temple University
Terese Hammond	Univ of Missouri
Craig McMackin	Temple University
Anthony Shum	Univ of Chicago

The job of selecting the Chief Residents continues to remind us of the strength and quality of all of our house officers. We look forward to our continued success in choosing a strong group of Chief Medical Residents from a very talented housestaff.

David Battinelli

Want to write for The Inpatient Times?

Do you have an idea for an article for The Inpatient Times? Fancy yourself a reporter? Is news happening in front of your eyes that you would like to cover? GREAT!

Is there a clinical pearl you would like to discuss or a clinical question you would like to raise. Just do it! Submit all story ideas to Jeff Greenwald at Jeffrey.Greenwald@bmc.org.

Stay Tuned: Outpatient DVT Therapy is Coming!

In the advent of injectable low molecular weight heparins, BMC is working to develop an outpatient pathway for patients presenting with DVTs. At present, the vast majority of these patients are admitted. Around the country and in many European countries, that standard of care has shifted to outpatient therapy for uncomplicated cases of DVT.

A group of physicians, nurses, pharmacists, case workers, and members of the pharmaceutical industry have been working together to develop a system for initiating outpatient care of these patients with acute DVTs directly from the E.D. or Urgent Care Center.

This group anticipates rolling out the pathway in the next few months. Inpatient therapy of uncomplicated DVTs will soon be a thing of the past.

Jeffrey Greenwald

Vaccines: A New Inpatient Priority

In an effort to combat nosocomial infections, the CDC has developed a 12-step program for hospitals which elucidates priority areas for quality improvement efforts. One step of the program is well underway at BMC: inpatient vaccinations.

While vaccines are often relegated to the world of outpatient medicine, three obser-vations should be kept in mind: 1. Some patients do not see a clinic-based physician regularly; 2. Evidence exists that influenza has passed from one person in the hospital to another; and 3. Many of the inpatients meet the criteria for high-risk groups for influenza and pneumococcal vaccinations.

To vaccinate your inpatient against flu (yearly) and pneumococcus (every 5 years if less than 65 or once thereafter) while hospitalized, begin by discussing the issue with your patient. If willing, order the vaccines through SCM either individually or through the "discharge with vaccines" order. The nurses will give the vaccines for you; no consent form is required. Note, because Geriatrics has a successful outpatient campaign for vaccines already, if working Firm C, discuss this issue with the Firm C attending.

Remember to document all vaccines given on the Green Sheets for the PCPs. *Jeff Greenwald*

Bratzler DW, Houck PM, Jiang H, et al. Failure to vaccinate medicare inpatients. *Arch Int Med* 2002; 162:2349-2356.