

## **Finally, a Community Acquired Pneumonia Pathway!**

Care pathways have been a part of the BMC inpatient system for years now. Deborah Whalen, through the Medicine-Cardiology Collaborative, has created nationally recognized, standard-setting pathways in areas such as Acute Coronary Syndrome and Low Probability Chest Pain. Despite the widespread acceptance of pathways locally and across the country, recognizing their ability to standardize care to the highest level of evidence-based treatment, Boston Medical Center's list of pathways is relatively limited.

After many months of preparation, BMC's Department of Medicine is now ready to roll out its newest member of the pathway club, the Adult Community Acquired Pneumonia Pathway. Produced as a collaboration between members of the Hospital Medicine Unit, the Sections of Infectious Diseases, Pulmonary and Critical Care, and Hematology/ Oncology, the Pharmacy, the Emergency Department, and Information Technology, the new CAP Pathway offers up to date diagnosis, treatment, and management recommendations gleaned from the most current professional guidelines, such as the new Infectious Disease Society of America recommendations, and taps into local resources like the BMCB4.org website for PORT score calculations.

Like other BMC pathways, the CAP Pathway will be partly on paper (the recommendations, guidelines, PORT score calculator, and references) and partly on Sunrise Clinical Manager, or SCM (the ordersets for the ICU and the Inpatient Unit).

Areas within the Pathway that may result in change of some current practices include guidelines for rational empiric antibiotic use with less reliance on fluoroquinolones, tailoring antibiotics to identified pathogens, recognizing when to change to oral antibiotics, and remembering to vaccinate patients with the Pneumococcal vaccine. Also, it will focus on appropriate DVT prophylaxis therapy.

Like other pathways, the CAP Pathway may be implemented in the Emergency Department, the ICU, or on the Inpatient Unit. Please send any comments, questions, or concerns about the Pathway to Jeff Greenwald. *J Greenwald*

## **Physician Assitants Join Firm D & E**

Some welcome news for the busy teams on East Newton Campus – three physician assistants are joining the medical service on Firms D and E. Kerry O'Brien and Rebecca Holberg have already started on the D2 and E1 teams, respectively, and Elizabeth Gemba will be starting in mid-February. Initially these physician assistants will be oriented to our system by joining the housestaff teams in the role of an extra intern. Once they learn the ropes, they will form a separate PA service, taking care of patients independently from housestaff and directly with the attending of record. They will be working Monday through Friday and will cover three out of every four weekends, so housestaff cross-coverage will be limited to night float and an occasional weekend. The nitty-gritty details of how this PA service will run will follow, but for now please help welcome Kerry, Rebecca, and Elizabeth to BMC – we are very happy they are here! *J Hughes*

## **THE INPATIENT TIMES**

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# **The Inpatient Times**

*All the news that makes you more fit to treat*

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## **Diagnosis of Influenza**

Because the symptoms of influenza can include such nonspecific symptoms as fever, muscle aches, headache, dry cough, sore throat, and runny nose, it may be difficult to diagnose based on clinical symptoms alone.

**While there are a number of commercially available tests that can help in the diagnosis of influenza, testing does not need to be done on all patients.** For individual patients, tests are most useful when they are likely to give a doctor results that will help with diagnosis and treatment decisions.

Appropriate samples for influenza testing can include a nasopharyngeal or throat swab, though nasal wash, or nasal aspirates are superior. Samples should be collected within the first 4 days of illness. Rapid influenza tests (antigen detection) provide results within 24 hours; viral culture provides results in 3-10 days. Most of the rapid tests are, unfortunately, no more than 70% sensitive for detecting influenza A or B infection and may be greater than 90% specific. **Thus, as many as 30% of samples that would be positive for influenza by viral culture may give a negative rapid test result. Due to a lack of 100% specificity, rapid test results may indicate influenza when a person is not infected with influenza.**

Also, note that the use of the live attenuated influenza vaccine that is given intranasally may result in a positive test result as a consequence of the presence of the vaccine strain in the patient specimen.

## **Infection Control In the Hospital**

Patients with influenza A virus infection should be placed on droplet precautions. In order to interrupt person-to-person transmission in the health care setting, the Recommendations for the Prevention of Nosocomial Influenza in Guideline for Prevention of Nosocomial Pneumonia, available at [http://www.cdc.gov/ncidod/hip/pneumonia/2\\_flu.htm#top](http://www.cdc.gov/ncidod/hip/pneumonia/2_flu.htm#top) suggest:

- A. Keep a patient for whom influenza is suspected or diagnosed in a private room, or in a room with other patients with proven influenza, unless there are medical contraindications to doing so.
- B. As much as feasible, maintain negative air pressure in rooms of patients for whom influenza is suspected or diagnosed, or place together persons with influenza-like illness in a hospital area with an independent air-supply and exhaust system.
- C. Institute masking of individuals (except those immune to the infecting strain) who enter the room of a patient with influenza.
- D. As much as possible during periods of influenza activity in the community, have the hospital's employee health service evaluate patient-care staff who have symptoms of febrile upper respiratory tract infection suggestive of influenza for possible removal from duties that involve direct patient contact. Use more stringent guidelines for staff working in certain patient-care areas, eg, ICUs, nurseries, and units with severely immunosuppressed patients.

**Note to the reader:** a superb web site for up-to-date information on influenza infections is <http://www.cdc.gov/flu/>. Selected information from that site was included in this piece.

*D Shapiro*

## **Disasters and the Role of Medical Physicians**

BMC has four levels of disaster response. Response will be event dependent, priority driven and task oriented and may last for days or weeks. Collaboration and adaptability will ensure that the greatest good is provided to the greatest number.

Phase A is an administrative alert that requires no immediate response. It is normally declared in response to an event that has yet to occur but might generate casualties or to a planned high-risk event such as the esplanade concert on the 4<sup>th</sup> of July. Operations continue as normal.

Phase B is an influx of patients and requires all Emergency Department assets for management. Normally the event will be of limited duration, with most victims treated and released; however, some impact to inpatient units should be anticipated. All hospital staffs remain on duty until released by their immediate supervisor. Residents should report to their assigned inpatient or critical care units to receive immediate admissions from the ED and complete any incomplete work-ups. The Chief Resident should report to the Emergency Department Attending to assist with the mobilization of patients to the ICU's and inpatient units and reassignment of staff as needed to care for displaced patients or to support the emergency response.

Phase C and D events include those necessitating patient evacuation, city-wide events generating hundreds of victims, or events complicated by chemical, biological, or radiation hazards require the dedication of most if not all institutional assets. The command center is opened, and the hospital incident command system replaces normal operations. All staff remain on duty and all non-critical operations cease. Access to the hospital is restricted to personnel with ID badges. The Department of Medicine disaster leadership group will be alerted via a group page and will coordinate the activities of physician staff. While awaiting the arrival of the command and disaster leadership groups, ICU and ward team residents should report to their assigned units, conduct rounds to identify all patients who can easily and rapidly be discharged from the hospital, move

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patients from the ICU, and prioritize procedures, labs, and radiographic studies. The Chief Residents should continue the role described in phase B, coordinating and communicating the distribution of patients and staff until relieved by a Department of Medicine leader. All off duty staff or non-ward/ICU house officers arriving to assist should report to the staffing pool sign-in and await assignment.

Refer all questions to Jeff Greenwald, Medicine Unit Leader.

*M McMahon*

## **TRUE OR FALSE: Elderly people rarely have HIV.**

*FALSE:* Individuals over 50 years of age account for up to 10 percent of AIDS cases reported to the CDC, a number that is expected to rise as a result of improved survival of patients with treated disease. Older adults are less likely to use a condom during sexual intercourse or to participate in HIV testing. Older adults with HIV infection are more likely to be diagnosed later in the course of their disease due to delayed recognition and they experience progression more quickly. When compared to their younger counterparts, older patients with HIV survive for a shorter period of time. Co-morbidities often complicate management and controlled data on tolerability and responses to HAART are lacking. The possibility of HIV infection must be considered among elderly patients with clinical features of immunodeficiency in order to avoid delay in counseling and treatment. Don't forget to ask about current and past HIV risk behavior, especially in our population at BMC!

*C. Cullinane*

**Having trouble getting your patient a follow-up appointment with his/her BMC doc as soon as you'd like it? Never fret! Post Discharge Clinic can help – often seeing your patient within 1 week. Call: 87970 and tell them the specific medical issue you need followed up in Post Discharge Clinic.**

## **WHAT IS BABINSKI'S SIGN AND WHO WAS BABINSKI?**

The Babinski's sign is a pathological reflex where the great toe extends toward the top of the foot and the other toes fan out when the sole of the foot is firmly stroked. The presence of these findings indicate the presence of Babinski sign, therefore it is incorrect to use the terms positive and negative Babinski sign.



Babinski's sign. Top, The normal adult response to stimulation of the lateral plantar surface of the foot. Bottom, The normal infant and abnormal adult response. (From Gardner E: Fundamentals of Neurology. Philadelphia, WB Saunders, 1968.)

Joseph Jules François Félix Babinski was a French neurologist, born November 17, 1857, Paris; died October 29, 1932, Paris. Today, his name remain evocative of eponymic fame. Joseph Babinski was the son of a polish engineer and his wife who in 1848 fled Warsaw for Paris because of a Russian reign of terror stalling Polish attempts at independence.

As a young student of medicine Babinsky came early to Charcot at the Salpêtrière in Paris. Charcot soon recognised the greatness of this distinct observer, who was soon to become his favourite student. Babinski received his medical degree from the University of Paris in 1884 with a thesis on multiple sclerosis. His working manner was characterised by exceptional observational powers and thorough discussions of the neurological systemathology. He strived to map the theoretical background, but was above all a clinical descriptive observer.

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In 1900, a year before Alfred Fröhlich, Babinski described the adiposo-genital syndrome in a case of pituitary tumour, a condition still termed Babinski-Fröhlich syndrome. The following year, 1901, he reported with Augustin Charpentier (1852-1916) on the Argyll-Robertson's pupil in neuro-syphilis as an expression of a lesion of the central nervous system. In 1902, with Jean Nageotte (1866-1948) he described the clinical symptoms caused by lesions in the postero-lateral part of pons, a complex of symptoms that still bears the name Babinski-Nageotte syndrome. In 1905 he described with insight the neurophysiological background of tabes dorsalis. He concerned himself with the pathology of the cerebellum and introduced the terms ataxia and dysdiakonesia as cardinal symptoms of cerebral lesions.

Although Félix Alfred Vulpian, neuropathologist at the Salpêtrière, half a century earlier had observed the extension of the great toe in certain types of brain damage, it was through Babinski's observations and analysis that clinicians recognised the importance of this sign in lesions of the pyramidal tract. Babinski's sign received much international interest and soon achieved routine neurological status worldwide

Joseph Babinski died on December 13th 1932. The last years of his life he suffered from Parkinson's disease, but he lived to see his achievements in French neurology internationally acknowledged.

*S Ramani*

## **Avian Influenza Infections in Humans**

Confirmed instances of avian influenza viruses infecting humans occurred in 1997, 1998, and 2003 in Hong Kong due to strains of avian influenza A (H5N1) in 1999 in Hong Kong and China due to influenza A (H9N2), and in 2003 in the Netherlands due to influenza A (H7N7).

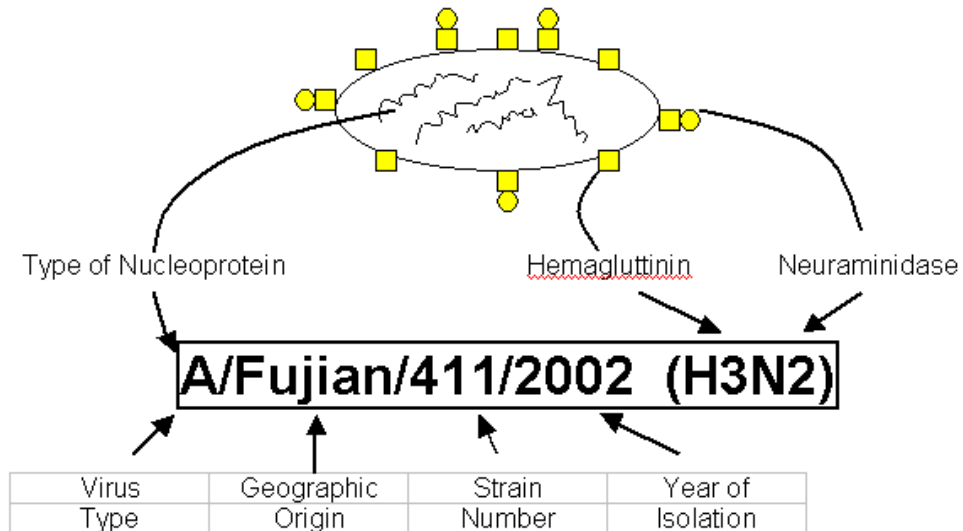
There is, as of the time of this writing, an ongoing outbreak in a number of countries of southeast Asia of avian influenza A (H5N1) involving both birds and humans with a number of fatal human cases reported. Whether or not this will result in human-to-human transmission and a subsequent pandemic remains to be seen.

*D Shapiro*

## Influenza 101: Its Structure and Its Wrath

The influenza viruses, influenza A, influenza B, and influenza C viruses, are classified as Orthomyxoviruses. The most important of these is influenza A virus, which may cause not only epidemics, but pandemics in which there is worldwide spread of the virus. Influenza B virus may cause epidemics and is of more clinical importance than is influenza C virus. Influenza A virus has a host range that includes avian and swine hosts, which may serve as sources for new human pandemic strains.

Influenza A viruses are subtyped on the basis of the two surface antigens hemagglutinin (H) and neuraminidase (N). Influenza B viruses are not subtyped. The naming of the viruses is on the basis of the virus type, the geographic origin of the virus, the strain number, the year of isolation, and the H and N antigens.



## 20th Century Influenza A Pandemics

**1918-19: "Spanish flu,"** [influenza A (H1N1)], caused more than 500,000 deaths in the United States, and 20-50 million people may have died worldwide. Nearly half of those who died were young, healthy adults.

**1957-58: "Asian flu,"** [influenza A (H2N2)], caused approximately 70,000 deaths in the United States.

**1968-69: "Hong Kong flu,"** [influenza A (H3N2)], caused approximately 34,000 deaths in the United States. Influenza A (H3N2) viruses continue to circulate today

It has been speculated for some time that the world is "overdue" for a new pandemic strain of influenza A virus. Those strains that are currently circulating globally include influenza A (H1N1) viruses, influenza A (H3N2) viruses, and influenza B viruses. In 2001, influenza A (H1N2) viruses that probably emerged after genetic reassortment between human A (H3N2) and A (H1N1) viruses began circulating widely. New influenza virus variants result from frequent antigenic change (i.e., antigenic drift) resulting from point mutations that occur during viral replication. Influenza B viruses undergo antigenic drift less rapidly than influenza A viruses. This is different from a major antigenic shift that can occur in influenza A virus, in which an entirely novel strain may occur, and may result in a pandemic.

*D Shapiro*

## New and Improved: [www.bmcb4.org](http://www.bmcb4.org)

Like the pen – which can write sonnets or poke you in the eye – technology implies a *tool*, something we need to be deliberate about using. For those on the B4 Firm, we're trying to figure out how to better use these tools to take care of patients better.

In our immediate work, we've been developing our web site at [www.bmcb4.org](http://www.bmcb4.org). The [bmcb4.org](http://bmcb4.org) site is more developed than when we last wrote for the *Inpatient Times*. It continues to focus on our Top 20 admitting diagnoses, and now includes great presentations from Oren Fix on paracentesis, by Elliot Sternthal on sliding scales, and motivational interviewing from the Project Assert team. Our inpatient director, Chris Manasseh, has provided elegant frameworks for our major diagnoses.

So when we describe chest pain, we know our definitions, pre-test probabilities, and Framingham risk. When we treat pneumonia, we can see a PORT score and the new IDSA guidelines. We've even made a special page for my co-resident Liz Frutiger and myself, one with our favorite core resources for the Top 20. When we depart from a standard approach, we try to do so deliberately, always recognizing the needs of the individual patient.

But how we're using technology for patient care and learning. Who better to consult than the Media Lab at the MIT? Our MIT colleagues, specifically those at the Future of Learning section, will be working with us as expert media anthropologists. We plan to spend time with them as they watch our technological interactions – and have them suggest ways to improve our use. They have experts from information design to sensory inputs, so if you see some MIT badger-types in the house, please give them your best!

Boston Medical Center has done extraordinary work on the technology front. Now is a great time to capitalize on this effort and make it work even better. Please let us know your thoughts: by pen, computer, or – best yet – in person!

*S Martin*

## Rapid HIV Testing Comes to BMC

In November, 2002, the Food and Drug Administration approved a new rapid HIV test called OraQuick®. This product utilizes a single drop of blood (either from a fingerstick or from a phlebotomy specimen) and takes 20 minutes to complete. Rapid tests for HIV have been available for years. What makes OraQuick® notable is three points: 1) it is licensed as a point of care test, meaning it does not require a lab to run it and was the first of this kind available on the market; 2) it is incredibly easy to do even for non-lab personnel; and 3) it is highly accurate with a sensitivity of 99.6% and specificity of 99.8%, rivaling standard HIV tests. A second rapid, point of care HIV test is also now available called Uni-Gold but less widespread experience exists for this test.

Since 1999, BMC's inpatient medicine service at Menino Pavilion, has offered routine HIV tests to its patients. Despite best efforts, somewhere between 20-60% of patients tested on the inpatient service never return for their results, which often become available after they leave the hospital. Now that rapid HIV tests are available, they have been added to the HIV Inpatient Testing Service's (HITS) armamentarium, as of December, 2003. HITS is a program run by Project TRUST.

As always, HIV testing performed by HITS is confidential and intended for screening purposes not diagnostic purposes as part of a work-up for a patient suspected of having HIV as the underlying cause of the current hospitalization. That is, HITS is not appropriate for the patient one suspects is in the hospital with PCP or Cryptococcal meningitis or has thrush. Those folks need an HIV test through our lab at BMC where the medical team is assured to get the results.

If you see one of the counselors at Menino rolling their large carts around, please do not open the carts. These carts are used for running the rapid tests in a stable controlled environment. If you have questions about HITS or rapid testing, feel free to page the counselors on beeper TEST (8378). Of note, Project TRUST now offers anyone interested a rapid HIV test in Urgent Care and BMC patients may obtain a rapid HIV test on ACC3, Team 3 (no appointment needed).

*J Greenwald*

## Live at BMC

### The Hospital Medicine Unit

The Department of Medicine and the Section of General Internal Medicine are pleased to introduce our new Hospital Medicine Unit. Now at the forefront of our changing hospital system, the hospitalist presence at BMC has grown significantly over the last five years. In 1999, our first hospitalists, Jeffrey Greenwald, Subha Ramani, and Nancy Torres Finnerty, were unified by their strong commitment to outstanding inpatient care and to the promotion of excellence in housestaff and medical student education. Over the years, it became apparent that the provision of high-quality, cost-effective hospital care requires expertise in navigating the BMC system and is inextricably linked to quality improvement initiatives. Today, together with Julien Dedier, Jennifer Hughes, and Joel Caslowitz, the hospitalists have expanded their professional scope beyond inpatient care and education to include patient-centered quality improvement as well as research. This work has evolved into a clear mission at BMC, now embodied in a dynamic unit, whose totality hopes to be greater than the sum of its parts.

The establishment of this unit at BMC comes at a time of tremendous growth in hospital medicine nationwide. In the mid-1990s, approximately 800 hospitalists were practicing in the U.S. Last year, there were 8,000. Moreover, virtually all of the country's leading hospitals- including Mayo Clinic, Cleveland Clinic, the Universities of California, Chicago, Pennsylvania, Michigan, our local colleagues at Brigham & Women's and Beth Israel Deaconess- have developed formal Hospital Medicine programs. As hospitalized patients today are more complex and acutely ill than ever before, these programs are dedicated to the unique challenges of inpatient care.

Beyond reduced lengths of stay and cost savings, hospitalists add value in many ways. They have developed a unique skill set which enables them to take leadership in patient safety initiatives, collaborate with key hospital committees, and

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develop clinical pathways to reduce regional variations in practice, shown to be a major contributor to medical errors in hospitalized patients. Another step forward in providing exceptional care to our inner city population, the formation of the Hospital Medicine Unit marks a turning point in the history of Boston Medical Center.

*N Torres Finnerty*

### **GERIATRIC MYTH: A Risk of Falling Precludes Anticoagulation**

Many of us have concluded on rounds that a patient with a risk of falling should not receive coumadin. Often we cite the increased risk for subdural hematomas. While there may be many other reasons to avoid anticoagulation in an elderly patient, is falling alone sufficient? One study that reviewed 49 published anticoagulation trials of patients with AF found that intracranial hemorrhages (subdural hematoma or intracerebral hemorrhages) were uncommon. A Markov decision analytic model demonstrated that, regardless of the patient's age or baseline risk of stroke, the risk of falling was not an important factor for determining the optimal antithrombotic therapy.

*In fact, the risk of a subdural hematoma from falling is so small that a person with an average risk of stroke from AF (5 percent/year) would have to fall approximately 300 times in a year for the risk of anticoagulation to outweigh its benefits.* Unfortunately, other factors such as poor compliance, cognitive impairment, history of gastrointestinal bleeding, and uncontrolled hypertension often will prevent us from anticoagulating.

**And Remember...** *Start Low and Go Slow:* Elderly subjects typically have increased sensitivity to the anticoagulant effect of warfarin. In one report, patients  $\geq 75$  years of age needed less than one-half the daily warfarin dose compared to subjects less than 35 years of age for an equivalent level of anticoagulation. Sensitivity is often enhanced by lower body weight, reduced drug clearance and reduced vitamin K intake.

*C. Cullinane*

### **What is a Nurse Practitioner?**

Nurse practitioners [NPs] are primary care providers who practice in a wide variety of settings. Nurse practitioners may be found in ambulatory, acute, and long-term care settings. NPs practice autonomously and in collaboration with health care professionals and other individuals to assess, diagnose, and manage health care problems. In order to practice as a nurse practitioner, a graduate nursing student nurse must complete a Master's degree. The curriculum involves didactic as well as clinical programs (internships) in their chosen field of specialty. Typical specialties include: primary care, gerontology, pediatrics, nurse midwives, family, acute-care and long-term care. Upon completion of specified hours within their residency (internship) and graduate studies, the candidate then must sit for accreditation board exams. There are currently two accreditation organizations: the American Academy of Nurse Practitioners [AANP] and the American Nurses Credentialing Center [ANCC]. Once successfully passing the exams, the candidate then must appeal to the Board of Nursing in each state in which they would like to practice. The Standards of Practice for advanced practice nurses [APNs] in each state may differ.

#### **Nurse Practitioners' Scope of Practice**

Nurse practitioners can practice autonomously and in collaboration. According to their practice specialty, nurse practitioners deliver care to individuals, families, and communities. Core to a nurse practitioner's values are: health promotion, education, and disease prevention. In addition, nurse practitioner services in Massachusetts can include, but are not limited to, the following: conducting physical assessments, ordering, conducting, supervising and interpreting diagnostics as well as prescribing pharmacologic and non-pharmacological therapies. In Massachusetts, NPs may autonomously prescribe controlled substances. *Continued →*

All of this accountability and autonomous practice requires review. In order for a nurse practitioner to practice within a hospital setting, he or she must apply for clinical privileges. Once credentialed, the NP must be accepted by the Board of Medicine (at the institution) to practice at that site. Furthermore, each NP in any setting within Massachusetts must have a supervising physician. The Board of Registration in Nursing mandates quarterly reviews of treatment regimens and prescribing patterns between the NP and his/her supervising physician. Accountability and credentialing also requires continuing education and maintenance of clinical skills. NPs must obtain at least 75 hours of accredited continuing education over five years plus provide evidence of current hours (generally 1000 or more over five years) spent directly in clinical practice. Lastly, the role also asks that advanced practice nurses serve as researchers, interdisciplinary consultants and patient advocates.

For the last thirty years, societal and economic forces have reshaped healthcare systems. Societal demand for advanced nursing practice blossomed with studies detailing how nurse practitioners deliver quality care. Economic demand has allowed advanced nursing practice to flourish since in many cases NPs offer the same care to patients at 23-40% less the cost than physicians. Hospitals using NPs in addition to registered nurses [RNs] and residents typically boast improved patient outcomes and reduced costs. Larkin (2003) found that NPs could be beneficial to institutions because they have more expertise and autonomy than RNs, and have more time to devote to specific patients than residents. In Tennessee's state managed MCO, TennCare, NPs delivered health care at 23% below the average cost of other primary care providers with a 21% reduction in hospital inpatient rates and 24% lower lab utilization rate below physicians. They also wrote 42% fewer prescriptions than other providers. This study, and others, suggests that nurse practitioners demonstrated above-average performance in cost-efficiency while delivering top quality health care.

*C Williams*



## **Do Pharmacy Follow-up Phone Calls After Discharge Improve Care?**

There is a time between hospital discharge and patient follow-up that has been deemed by many healthcare workers as a “black hole.” Continuity of care is of utmost importance during this period, yet there is no effective uniform system in place at BMC to ensure this vital component of patient care. During the post-discharge period, new medical problems can arise and old ones can be exacerbated. Additionally, patients can encounter innumerable barriers to healthcare, including difficulty obtaining medications and securing appointments with physicians or specialists. Also, patients may not have received formal counseling on new discharge medications, including proper use and potential side effects. Despite this important aspect of patient care, only a paucity of literature on the topic exists. The literature that does exist suggests that patient education concerning discharge planning and the post-discharge period is an aspect of care that is in great need of improvement and an excellent opportunity for intervention by a pharmacist.

The Pharmacy Department at BMC recently submitted an IRB proposal for a quality improvement project that addresses this issue and will begin data collection once approval is granted. The purpose of the project is to analyze whether a follow-up phone call by a pharmacist after patient discharge can improve patient outcomes. English speaking patients will be interviewed via telephone within 72 hours of being discharged home from a medical ward to identify and resolve barriers during the post-discharge period. The patient will be interviewed using a standardized form containing three main areas. The first portion of the interview pertains to the patient’s primary discharge diagnosis and whether or not the patient feels they are improving, worsening or the same since discharge. Next, it will be determined whether or not the patient has filled his/her prescriptions and if the patient is taking all discharge medications correctly. Lastly, it will be determined if the patient has scheduled the necessary follow-up appointments.

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Once problems are identified during the phone call, pharmacists will attempt to resolve those problems. Thirty-day readmission rates will be compared to determine if there is a difference between the intervention group (follow-up phone call) and the control group (no phone call). The primary outcome is a reduction in the number of readmissions within 30 days in the intervention group. Secondary outcomes include the number of patients in the intervention group for whom medication errors, complications or misuse could be identified.

Recently, a poster of pilot data for this project was presented at the American Society of Health-System Pharmacists (ASHP) Midyear Clinical Meeting in New Orleans. It was found that despite > 85% of patients stating their primary discharge diagnosis was improved or unchanged since discharge, pharmacist interventions were required on 17/29 (58.6%) patients. The three most common classes of medications involving interventions include antibiotics, anticoagulation and pain management. Practitioners at the presentation exhibited a great deal of interest in the project and we have since learned that there are four or five other hospitals around the country looking at the same type of initiative.

If this project yields positive results, those results will be used in attempts to secure additional resources for the pharmacy department at BMC in order to implement a full-time formal discharge/follow-up service which may be staffed either by students, pharmacy residents or staff pharmacists.

*G Burniske, A Burnett*

## **Antiviral Drugs for Influenza**

The two classes of drugs are the adamantines and neuraminidase inhibitors. The amantadines (amantadine and rimantadine), are approved for the treatment and prophylaxis of *influenza A only*. The neuraminidase inhibitors (zanamivir and oseltamivir) have activity against both influenza A and B, but are currently approved by the FDA only for treatment.

*D Shapiro*

## **Re-Engineering the Boston Medical Center Discharge Process**

About 20-30% of all medical patients discharged from the hospital are rehospitalized within 90 days, a problem particularly acute among urban, underserved patients<sup>1,2</sup>. Low-income urban patients are at high risk of re-hospitalization due to higher rates of low health literacy, lack of coordination of care at discharge, loss to follow-up, gaps in social supports, and other limitations. They therefore experience high morbidity and account for a disproportionate amount of health care costs. Improving the hospital discharge process is a key component of any strategy to reduce re-hospitalization. To date, there are few studies describing the essential components of the discharge process and no accepted procedures or tools designed to reduce medical errors at the time of discharge, especially for urban populations.

The Department of Family Medicine has been awarded a one year grant, entitled “Safe Practices Implementation Challenge Grant: Re-Engineering the Hospital Discharge for Patient Safety,” to address this issue in further detail. The goal of the grant, which builds upon current work, is to identify medical errors at discharge and develop a comprehensive discharge toolbox to reduce errors that lead to rehospitalization. The 5 components of the grant include (1) process mapping of the BMC discharge process; (2) failure mode and effect analysis through assessment of discharge events to identify latent sources of error; (3) root cause analysis of those patients repeatedly hospitalized to learn from those who have been affected by an error at discharge; (4) qualitative research with re-hospitalized patients and their families, and other key informants to further understand issues leading to rehospitalization; and (5) determining the contributions of various risks at discharge through probabilistic risk assessment. Some preliminary findings of Boston HealthNet Plan data indicate that patients discharged over the weekend (Friday,

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Saturday or Sunday) have a 30% increased risk of hospital utilization, including either emergency room visits and/or hospital readmissions. Another finding indicated that patients who do not have an outpatient visit within 30 days of hospital discharge have a significantly increased risk of being readmitted.

In order to re-engineer the discharge process we first need to understand, in detail, what a “standard BMC discharge” looks like. Our team has been established and is well underway with the process mapping component of this project. Members of the team include: David Anthony, MD, MS, Stephen Bowen, MS, APRN, BC, Gail Burniske, PharmD, Veerappa Chetty, PhD, Allyson Correia, RN, Jeff Greenwald, MD, Brian Jack, MD, Anand Kartha, MD, Chris Manasseh, MD, Kathleen McKenna, Maria Rizzo DePaoli, MSW, Amy Rosen, MD, Nancy Torres-Finnerty, MD, and Cornelia Walsh, RNC. Copies of the current map have been posted in various locations on H6 for further review and comment by providers. Through the analysis of potential system failures and resultant problems, we can begin to re-engineer the discharge process.

*M Rizzo DePaoli*

### **References:**

<sup>1</sup>Smith DM, Giobbie-Hurder, A, Weinberger M, Oddone EZ, Henderson WG, Asch DA, et al. Predicting non-elective hospital readmissions: a multi-site study. Department of Veterans Affairs Cooperative Study Group on Primary Care and Readmissions. J Clin Epidemiol 2000; 53:1113-8.

<sup>2</sup>Burns R, Nichols LO. Factors predicting readmission of older general medicine patients. J Gen Intern Med 1991; 6(5) :389-93.

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**Go to the Department of Medicine ‘webpage and you’ll find all prior editions!**

**That’s:**

**<http://www.internal.bmc.org/medicine/>  
Thank you Dan Newman!!!**

### **What is a PA-C?**

The Physician Assistant profession was initiated in the mid-1960s by Dr. Eugene Stead of Duke University Medical Center in North Carolina. Dr. Stead recognized there were a number of patient populations lacking primary care in certain urban and rural settings. In order to extend the role of the physician to these underserved patients, he began with a handful of Navy corpsmen who had served in Vietnam. These corpsmen received a fantastic hands-on medical education in the war and had no arena to use these skills upon their return.

Today physician assistants are licensed health care professionals who practice medicine with the supervision of a physician. PAs perform physical exams and histories, order and interpret laboratory tests, assist in surgery, give advice on preventative health care and diagnose and treat illnesses; including writing prescriptions (in 47 states). PAs always work as a team with physicians; however, with more experience they gain greater autonomy. Part of the PA education is recognizing limits, and there is always a physician either on-site or via telephone for consultation.

PAs are educated using the medical model, and PA programs are an average of 26 months long. Most schools require a Bachelors degree and approximately 2000 hours of direct patient care experience. The result is a diverse group of PA students in each class, including prior nurses, paramedics, respiratory therapists, etc. This previous experience ensures each PA student is dedicated to working in a clinical setting.

PA programs begin with a didactic year, including classes and laboratories in the basic medical and behavioral sciences (such as anatomy, cadaver labs, pharmacology, pathophysiology, medicine, physical diagnosis and ethics). The following year consists of clinical rotations in internal medicine, family medicine, pediatrics, surgery, obstetrics and gynecology and emergency medicine. As a result of this broad education, PAs find employment in all of the areas above. This includes all of the medical and surgical subspecialties, such as cardiothoracic surgery, urology and dermatology.

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The “C” after “PA” stands for certified. In order to maintain certification PAs need to log 100 hours of CMEs every two years and take a recertification exam every 6 years. In order to become licensed, a PA must pass an accredited PA program, of which there are currently more than 130, and pass the National Certification exam developed by the National Board of Medical Examiners.

PAs can help provide a cost-effective approach to the challenge of reduced residency hours mandated in July 2003 by the ACGME. One benefit is the continuity of care PAs can furnish as residents rotate through programs. PAs have been utilized as house staff since 1979. The University of Rochester was forced to downsize its general surgery residency. Six PAs were hired to assist with the gaps created, which allowed continued quality of care for the patients and education for the residents. Be sure to keep your eyes peeled for some new PAs pitching in on the medicine service on the East Newton Campus within the coming months!

*P Gagnon*

**Congratulations to the  
Medicine Residency Program  
for surviving another interview  
season with style!  
Interns, you are over half way  
there!!!**

### **REMEMBER!!!**

**The Guaiacs are less than half a year  
away!**

**Send all embarrassing Intern stories  
to your favorite Junior Resident.**

### **Taming the Beast: Improving Relations Between the ED and Medicine**

Alright, fess up. We’ve all had evil thoughts about the Emergency Department, right? They are just down their scheming up ways to make our lives on Medicine harder. And besides... that patient didn’t *really* need to be admitted after all!

Ok, so I have a question. Why? Why is this problem so ubiquitous? It’s been true at every hospital I’ve worked in.

It’s not new. Ask the old venerable docs like...like... well, like the one’s who’ve already celebrated their 40<sup>th</sup> birthdays. Medicine and Emergency Medicine have been at odds since the beginning of time.

Solutions? Over the last few years, a group from the ED and the medical service have met to discuss “issues.” This meeting, taking place the 4<sup>th</sup> Thursday afternoon of the month at 4:30pm, has discussed items including the role of the SAR, communications with PCPs, the new 5W Step Down, patient flow, “unnecessary admissions,” the hip fracture policy vis-à-vis the role of med consult, sign-out to the house officers, criteria for admission of chest pain, hyperglycemia, and DKA, etc.

Dialog with the Emergency Department at these meetings have fostered improved relations and furthered communications on hot-button topics. Yes, the discussions sometimes fail to resolve the problems and, yes, problems recur. But having the forum in which to address issues is better than only believing the ED is a place of scheming ghouls only waiting for their next attack.

Next time you have an “issue” with the ED, feel free to bring it to your chief residents. They often attend the ED-IM meeting and can voice your concerns. Believe me, even the ED wants to hear about issues.

Ok, so they are no Dr. Mark Green (RIP) or Dr. John Carter, but they aren’t half bad!

*J Greenwald*

**Want to write for  
*The Inpatient Times*?**

**Got an idea for an article or  
something you’d like to see in the  
next edition?**

**Contact Jeff Greenwald**

### **Step Down Status Comes to 5West Menino**

On December 10, 2003, after a long wait, 5 West Tele opened 4 Step Down Status beds. We spent most of October and November, reeducating the nursing staff and getting ready. There was a lot of anxiety about providing this level of care on an inpatient, non-ICU unit; the rumor mill was on overtime. The patient population was defined as much as we could and on that Wednesday we prepared for the floodgates to open. As with anything new, we have had a few glitches in the system, but have been able to work out most of the issues.

Since the opening we have had a total of 18 patients on SDU status, and the breakdown has been 50/50 medicine/surgery. However small, the impact has been positive for the ICU’s on Menino. We have been able to decompress the ICU’s and ultimately the ED on a few occasions. The nursing staff should be commended for helping with this smooth transition. They not only increased the acuity of their patient population, but also did it while we transitioned them from a paper MAR to the eMAR. The 5W Tele nurses are very in tune to which patients are appropriate and have worked with the physicians, the bed facilitator and the nursing supervisors to ensure appropriate admissions. We will continue to monitor the use of this status and will meet again in a few months to decide if any changes need to be made.

*C Dunnington*