



# FIRST

Do No Harm

In this Issue:

- ◆ NSAIDs and Heart Failure
- ◆ Partners Manages Heart Failure
- ◆ PCA Eases Reporting Burdens
- ◆ BWH's Psych Nursing Services
- ◆ Pressure Ulcer Prevention at Faulkner
- ◆ Protecting Tracheostomies
- ◆ Managing Psychogenic Polydipsia

Patient Care Assessment Division, Board of Registration in Medicine

August, 2009

## PCA's DR. STANCEL RILEY APPOINTED EXECUTIVE DIRECTOR OF THE BOARD OF MEDICINE

At its meeting on August 5, 2009 the Board of Registration in Medicine announced the appointment of the Director of the PCA Division, Stancel M. Riley, Jr., MD, MPH, MPA, as the agency's new Executive Director. Dr. Riley replaces Nancy Achin Audesse, who retired from the Board in 2008.

"The Commonwealth is quite fortunate to have secured the services of a leader of Stan Riley's skills and experience. He is a champion for healthcare and unquestionably the most talented and qualified selection this Board, or any Board, could have made," said Dr. John B. Herman, Chair of the Board. "His dedication to patient safety and health care quality is unrivalled. His years of medical, public health and administrative training and leadership has prepared him to pursue a clear, progressive vision. The Board fully supports Dr Riley and his goals for Massachusetts to lead the nation in assuring the state a safe and competent physician workforce."

Upon the announcement of his appointment Dr. Riley said, "The Board is a critical component of the public health system of Massachusetts, and my first priority is ensuring that, in this Commonwealth, the patient is always the first priority."

Dr. Riley received his medical degree from the University of Alabama School of Medicine in 1972 and is board certified in surgery and thoracic surgery. He practiced as a cardiothoracic surgeon at Huntsville Hospital in Alabama for 22 years, performing the first heart surgery procedure in Huntsville. In 2003 he received a Master of Public Health from the Harvard School of Public Health and in 2005 a Master of Public Administration from the John F Kennedy School of Government.

Dr. Lucian Leape, Adjunct Professor of Health Policy at the Harvard School of Public Health, and an internationally recognized pioneer for patient safety, praised Dr. Riley's appointment. "Stan Riley is a true believer in patient protection, and his appointment as Executive Director is a win for everyone." Dr. Riley's selection was also applauded by Dr. Martin Crane, past Chair of the Massachusetts Board, and current Chair of the Federation of State Medical Boards. "Stan is perfect for the job. I worked very closely with him while he headed the PCA Division, and his knowledge and wisdom helped make PCA one of the finest patient safety operations in the U.S.," said Dr. Crane.

A Fellow of the American College of Surgery, the American College of Cardiology and the American College of Chest Physicians, Dr. Riley is also a member of the American Medical Association, the American Heart Association, the Society for Critical Care Medicine and the International Heart Transplant Society. He sits on the Board of Directors of the Massachusetts Coalition for the Prevention of Medical Errors, the Patient Safety Steering Committee of the Massachusetts Health Care Quality and Cost Council, and the Hospital Mortality Rate Expert Panel of the Massachusetts Department of Health Care Finance and Policy. Dr. Riley is an adjunct faculty member of Emerson College where he teaches a course on Leadership, and he holds the position of tutor at the Harvard Medical School.

## PCA RECOGNITION OF QUALITY

*PCA recognizes the following hospitals for demonstrating through their reports that they have quality improvement and patient safety systems designed to ensure that patients receive the highest quality of care. Safety and Quality Reviews, and Semi-annual and Annual Reports submitted by these hospitals provide evidence of multidisciplinary review, multi-focused investigations, analysis of data, and implementation of appropriate corrective actions or performance improvement measures. This collaboration with PCA is a unique and effective instrument in our mutual efforts to attain excellence in the care provided to patients in the Commonwealth.*

*Athol Medical Center*

*Baystate Medical Center*

*Braintree Rehabilitation Hospital*

*Bridgewater State Hospital*

*Children's Hospital Boston*

*Fairview Hospital*

*Holyoke Medical Center*

*McLean Hospital*

*Mercy Medical Center*

*New England Sinai Hospital*

*Newton Wellesley Hospital*

*Noble Hospital*

*Northeast Hospital Corporation*

*North Shore Medical Center*

*Southcoast Hospitals Group*

*Tewksbury Hospital*

*Westborough State Hospital*



## HEART FAILURE READMISSIONS AND GROUCHO MARX: YOU BET YOUR LIFE

Leslie G. Selbovitz, MD, Chief Medical Officer and Senior Vice President for Medical Affairs,  
Chair, Patient Care Assessment Committee Newton-Wellesley Hospital

At the opening of each episode of the famed Groucho Marx quiz show *You Bet Your Life*, George Fenneman, the announcer, quietly informed the audience of a secret word. If the contestants happened to say it, they would win an extra \$100.00 (the program ran from 1950 to 1961). Well, when the contestants would first come out, Groucho would give them a hint: the secret word was a common word, something you see every day.

So, too, is the class of drugs called NSAIDs (nonsteroidal anti-inflammatory drugs) commonly seen around the house, available without prescription and often used for pain, migraine phenomena and elevated temperature without understanding its potentially debilitating, and even lethal, consequences in patients with heart failure. We need specifically to ask patients during medication reconciliation about NSAIDs as well as to include the use of these drugs as admonitions in our heart failure patient education materials.

Widespread attention is being given under health care reform to rehospitalizations (90% being unplanned), and heart failure leads the hit parade in the Medicare population (Jencks SF et al. *N Engl J Med* 2009; 360: 14:1418-28). A recent Cochrane Collaboration review of 16 clinical trials of different disease management interventions emphasized the efforts to organize and anticipate the needs of heart failure patients (Taylor SJC et al. *The Cochrane Library* 2009, Issue 2). In another article in the PCA Newsletter, Dr. Allison McDonough details some of the local Partners HealthCare efforts to prevent heart failure readmissions.

Yet, at each step of the medical management of heart failure patients, we need to assure *primum non nocere*, first do no harm.

Most, but not all, of the current knowledge of the cardiovascular risks of NSAIDs have been based on post-hoc analyses of subgroups from studies designed around assessing noncardiovascular diseases. Concern with NSAIDs and associated cardiac complications, including readmission for heart failure exacerbation, have been based on observational studies and meta analyses. Indeed, the literature is controversial about the role of NSAIDs in precipitating the first episode of heart failure in the absence of known prior cardiac injury (McGettigan P et al. *Br J Clin Pharmacol* 2008; 65:927-34).

However, heart failure exacerbations and readmissions associated with NSAIDs are another issue altogether. For instance, a Netherlands prospective study of 7277 patients over 55 years of age demonstrated a univariate and adjusted relative risk of heart failure exacerbation among NSAID users of 3.8 and 9.9, respectively (Feenstar J et al. *Arch Intern Med* 2002; 162:265-70). Similarly, there was 10-fold increased risk of heart failure exacerbation requiring hospitalization among patients who were recent users of NSAIDs versus those who did not use these drugs, and the risk was dose-

dependent within the week prior to the hospitalization (Page J and Henry D. *Arch Intern Med* 2000; 160:777-84).

In January of this year, a Danish registry study involving 107,092 patients who survived their first hospitalization for heart failure between 1995 and 2004, demonstrated that NSAIDs were associated with an increased risk of death and increased risk of hospitalization because of heart failure or MI. Both nonselective and COX-2 selective NSAIDs were problematic and had dose-dependent increase in risks, implying causation. COX-2 selective inhibitors had the highest dose-dependent increase in the risk of death with hazard ratios (95% confidence interval) ranging from 1.70 to 2.08 (Gislason GH et al. *Arch Intern Med* 2009; 169:141-9). It is not widely appreciated that diclofenac (Voltaren and others) also is a fairly potent selective COX-2 inhibitor and had the highest hazard ratio.

The 2009 American College of Cardiology Foundation/American Heart Association (ACCF/AHA) Focused Update on Guidelines for the Diagnosis and Management of Heart Failure in Adults state that NSAIDs can cause sodium retention and peripheral vasoconstriction and can attenuate the efficacy while enhancing the toxicity of diuretics and ACE inhibitors (low dose aspirin is excluded). In fact, the adverse impact of this class of drugs in patients with reduced left ventricular ejection fraction is categorized by the ACC/AHA as Class I treatment effect (the highest grade on a I, IIa, IIb and III classification) with Level of Evidence: B {the estimate of certainty (precision) of treatment effect in an A, B, C classification system} (Jessup M et al. *Circulation*. 2009;119:1-40; online publication <http://circ.ahajournals.org>). The AHA has also recommended avoiding use of selective COX-2 inhibitors in patients with established or increased risk for cardiovascular disease in its 2007 scientific statement on use of anti-inflammatory drugs (Antman EM et al. *Circulation*. 2007; 115: 1634-42).

While most of the studies around NSAIDs and heart failure exacerbation are observational, the totality of the evidence is quite convincing from both the mechanistic and epidemiological perspectives. NSAIDs inhibit cyclooxygenase which is involved in two different pathways to synthesize thromboxanes (COX-1) and prostaglandins (COX-2) from arachidonic acid. It is hypothesized that the imbalance in the inhibition of these pathways, tilted towards reduction in prostaglandins, may contribute to excessive cardiovascular risk. Although prostaglandins have both vasodilator and vasoconstrictive properties, the net effect of the inhibition of their synthesis is to increase peripheral vascular resistance and reduce renal perfusion in susceptible individuals. NSAID induced fluid retention may occur in patients with impaired ventricular performance (and compensatory increased reli-

(Continued on page 3)



### Heart Failure Readmissions (Continued from page 2)

ance on vasodilator prostaglandins) in association with reduced renal blood flow, glomerular filtration and sodium excretion.

The increased afterload due to the peripheral vasoconstriction from NSAIDs can lead to a further reduction in cardiac contractility and cardiac output in heart failure patients. Serum potassium may also rise due to renal effects, and in those with hyponatremia, there is increased secretion of antidiuretic hormone as well as angiotensin II and norepinephrine. The increase in water reabsorption leads to water retention and further exacerbation of hyponatremia. All of these actions lead to antagonism of the action of ACE inhibitors, loop diuretics, and probably ARB's as well.

In a note on the NSAID, aspirin, and its antiplatelet effect: COX-2 inhibitors generally do not interfere with the antiplatelet action of aspirin, but the commonly used ibuprofen does, presumably by blocking access to the acetylation site on platelet cyclooxygenase-1. One way around this is to administer aspirin at last two hours before ibuprofen

and to limit the ibuprofen to a single daily dose (The Medical Letter 2004; 46:61-2). That will help preserve the intended antiplatelet activity of aspirin.

Despite the caution needed with NSAIDs in patients with heart failure, in the final analysis this knowledge must be used within the context of clinical judgement: assessing benefits against risks. There may still be times when the clinician will make the reasoned determination to use NSAIDs in this at-risk population. Prudence would dictate, especially if the heart failure is associated with underlying ischemic heart disease, to use low doses intermittently of nonselective NSAIDs and to protect against the predictable gastrointestinal consequences while scrupulously monitoring renal function, electrolytes, liver function, hemoglobin levels and in the home or at the bedside: early warning symptoms and signs of exacerbation of heart failure.

So, the secret word is "NSAIDs", and it is commonly seen around the house. You Bet Your (Patient's) Life!

---

## PARTNERS HEALTHCARE INITIATIVES TO PREVENT HEART FAILURE READMISSIONS

**Allison McDonough, MD, Medical Director High Performance Medicine Team 4,  
Partners Chronic Care Management**

In order to maximize our quality, Partners HealthCare System supports five High Performance Medicine teams which develop innovative programs targeting various pieces of our care delivery system. Because 10% of our sickest patients account for approximately 70% of health care costs, our team has focused on improving the effectiveness and efficiency of providing care to these very complicated patients. The mission of High Performance Medicine, Team 4 (HPM4) is to optimize the management of high risk and medically complex patients. HPM4 uses predictive modeling software (Impact Pro) to identify Partners patients who are at high risk for admission to the hospital, and connects them with systems of care that have been shown to improve their outcomes.

Recently, the Center for Medicare and Medicaid Services (CMS) publically reported hospital specific data on 30 day readmissions for Heart Failure and several other conditions. Massachusetts General Hospital and North Shore Medical Center were the only Massachusetts hospitals to score better than average for any condition; 22 percent of Mass. General's heart failure patients, and 22.3% of North Shore's, are readmitted to the hospital within 30 days, compared with 24.5 percent of patients nationally. Many different people and services share the credit for these numbers, and among them are several programs sponsored by HPM4.

Since 1998, the management of patients with heart failure has been a major focus at Partners. In that year, Nurse Practitioners specializing in heart failure manage-

ment were hired at each of our main hospitals. The N.P clinics provided our patients enhanced access to specialty care and superior education, with the goal of keeping them in their best health, in their homes, and out of the hospital.

The 2008 analysis of 90-day readmission rates showed a slight decrease in HF readmissions among NP program patients—from 44% in year ending June 2003 to 37.0% in the year ending June 2007. The same study also revealed that patients in NP program have almost double readmit rate of general HF population, which reflects the severity of their cases.

In 2005, the Identify and Connect Program was added at each hospital. This program aims to identify all patients with heart failure at the time of hospital admission, and ensures that each of them is connected with longitudinal outpatient programs to help keep them well and at home. The programs are run by on site R.N.s who can assess the needs of each patient and choose an appropriate intervention for them. The development of a computer based Registry and Population Manager for heart failure has assisted with the accurate identification of many more of our heart failure admissions. Run daily, this program uses logistic regression to predict which of our admissions are most likely to have heart failure. Our nurses can now focus their attention on the connection piece of their work, and can more easily track our patients over time

(Continued on page 4)

**Partners Heart Failure Programs** (Continued from page 3)

In addition to the N.P. clinics described above, patients can be connected to primary care and practice-based programs, and to hospital-based programs including the Brigham and Women's Advanced Heart Disease Section, Massachusetts General Hospital's Heart Failure Service, North Shore Medical Center's Heart and Wellness program, and Newton-Wellesley's Cardiovascular Health Center. For home bound patients, Partners Home Care (PHC) provides expert visiting nurse services, which may include home telemonitoring. The Connected Cardiac Care Program (CCCP), which began in 2006, provides a 4 month telemonitoring and patient education program for non-home bound patients. Patients at home check a daily weight, O2 sat, blood pressure, and symptom index, and these data are transmitted to centralized nurses at PHC for monitoring, and action as necessary. Preliminary evaluation of this program shows a very promising ~30% decline in 30-day hospital readmissions for their patient pool.

Future HPM4 efforts will focus on identification and implementation strategies related to reducing Partners hospital readmissions. Public pressure to reduce health care costs has been rising,\* and preventable readmissions are a major focus of attention due to great variation in cost, potential for

change, and relationship to quality of care.

Currently, we are rolling out a new program, the Medicare Transitions Program: Heart Failure. Based upon the work of Eric Coleman, Brian Jack, and others, this pilot builds upon the discharge processes already in place. Focusing on high risk Medicare beneficiaries with Heart Failure, and in collaboration with the MGH Case Management team, the pilot aims to optimize a patient's transition from hospital to home, in order to prevent avoidable complications and readmission. The telephonic intervention begins at hospital discharge and continues for 30 days. Actions include robust medication reconciliation within 48 hours, assurance of post discharge clinician follow-up within two weeks, heart failure specific teaching and symptom monitoring, and provision of social services as needed to assist in these and other aims.

---

\*Allen, Scott, Marcella Bombardieri, Michael Rezendes, et al. "A healthcare system badly out of balance." The Boston Globe. 16 Nov. 2008. [http://www.boston.com/business/healthcare/articles/2008/11/16/a\\_healthcare\\_system\\_badly\\_out\\_of\\_balance/?page=full](http://www.boston.com/business/healthcare/articles/2008/11/16/a_healthcare_system_badly_out_of_balance/?page=full)>.

---

## BORM PCA EASES THE REPORTING BURDENS ON HOSPITALS

Recent publication by the Massachusetts Department of Public Health of the Serious Reportable Events that occurred in Massachusetts acute care hospitals in 2008 triggered a request by the Joint Commission to the hospitals to submit "Sentinel Event" reports for these occurrences. Concerned about the burden and duplication of effort that this request would impose on hospitals, the Massachusetts Hospital Association asked the PCA Division if it would be willing to support its efforts to explore other alternatives that might satisfy the Joint Commission's expectations that accredited organizations identify and respond to Sentinel Events. Joint Commission Sentinel Event policies require accredited organizations to conduct timely, thorough and credible root cause analyses of sentinel events; develop action plans; implement those improvements identified in the action plans; and monitor the effectiveness of those improvements. This is also the expectation of the PCA Division and the Department of Public Health for Serious Reportable Events.

Stancel Riley, MD, Director of the PCA Division, invited representatives from the Joint Commission to meet with members of the PCA Division and review the Division's reporting structure. Joint Commission representatives spent two days at the Board's offices, learning about the PCA Program and reviewing de-identified reports. Due to this collaborative effort on the part of the PCA Division, as well as the efforts of the Department of Public Health and Massachusetts Hospital Association, the Joint Commission is re-evaluating its longstanding policies as they apply to Massachusetts. The Joint Commission recognizes that Massachusetts has a process for public reporting of events, and oversight of the hospitals' review and analysis of those events by regulatory bodies (i.e., BoRM PCA and DPH). PCA anticipates that the Joint Commission will rely on this process and not require hospitals to report the published Serious Reportable Events under its Sentinel Event policies. We are awaiting final review by the Joint Commission and confirmation of any change to its current policies.

The PCA Division's work with Joint Commission, is a major step toward addressing hospital concerns about the burdens of multiple and often duplicative external reporting requirements. The PCA Division will continue to work with the Department of Public Health and Massachusetts hospitals to improve and streamline external reporting processes.

MA DPH Report of Serious Reportable Events: [http://www.mass.gov/Eeohhs2/docs/dph/quality/healthcare/sre\\_acute\\_care\\_hospitals.pdf](http://www.mass.gov/Eeohhs2/docs/dph/quality/healthcare/sre_acute_care_hospitals.pdf)

Joint Commission Sentinel Events Policies : [http://www.jointcommission.org/NR/rdonlyres/F84F9DC6-A5DA-490F-A91F-A9FCE26347C4/0/SE\\_chapter\\_july07.pdf](http://www.jointcommission.org/NR/rdonlyres/F84F9DC6-A5DA-490F-A91F-A9FCE26347C4/0/SE_chapter_july07.pdf)



## BRIGHAM AND WOMEN'S HOSPITAL PSYCHIATRIC NURSING RESOURCES SERVICES

---

The Psychiatric Nursing Resources Service (PNRS) at Brigham and Women's Hospital in Boston is a nurse led service established to improve the psychological care provided to hospitalized patients and their families, improve access to psychiatric services, improve the experience of clinical nurses caring for patients with behavioral health issues by developing their skills, comfort and confidence and influence a safe environment of care. The three components to the service are direct consultation to patients and families, coaching of direct care nurses and clinicians and formal and informal education. The PNRS works with direct care nurses and care teams to assess, develop and evaluate a plan of care based on the needs of the patient and the most current evidence based practices.

The goals of the PNRS are to: (1) improve the early recognition, intervention and treatment of patient conditions particularly delirium, alcohol withdrawal, and those at risk for self harm; and (2) improve quality and safety as measured by reducing the use of restraints, incidence of falls and security codes.

Partnering with leaders and staff on the inpatient care units, the PNRS program managers assess current psychological care practices, resource requirements and learning needs of staff. Nurses access the PNRS when they are challenged around the psychological care and management of patients and families. The PNRS assesses the patient, and coaches the nurse and members of the care team in developing and implementing an individualized treatment plan that addresses the psychological needs of that patient. The service offers numerous learning opportunities and approaches centered around the needs of the patient which include; simulation, evidence based care reviews, and patient care rounds.

In addition to working collaboratively with nurses and interdisciplinary teams at BWH around specific patient needs, the PNRS program managers co-lead hospital wide initiatives with physician colleagues to develop and refine programs of care for patients with delirium, alcohol withdrawal and self harm.

Program managers, Monique Mitchell PMHCNS-BC and Barbara Lakatos PMHCNS-BC are advanced practice nurses board certified in psychiatric mental health nursing and provide the leadership for the PNRS. They have lectured extensively on their research interests of delirium, alcohol withdrawal, depression and the psychological care of patients in the acute care setting.

---

## PCA PROPOSES FORMATION OF MASTECTOMY/BREAST RECONSTRUCTION EXPERT PANEL

Over the past eighteen months, the Massachusetts Board of Registration in Medicine Patient Care Assessment Division (PCA) has identified several major complications directly related to timing, procedure, patient characteristics and risk factors, use of prosthetic, homograft or xenograft materials, and administration of adjuvant therapy in women having post-mastectomy breast reconstruction. Some of these complications resulted in multiple additional surgical procedures and often disfiguring results.

Recently, PCA surveyed the acute care hospitals in Massachusetts to determine whether they performed post mastectomy reconstruction and whether any of their patients required additional surgery for infections associated with these procedures.

The results of the survey revealed the following findings. Between January, 2007 and December, 2008, there were fifty-three patients who developed infections after mastectomy with breast reconstruction. These infections required returns to the operating room for debridement and removal of foreign material, and occasionally resulted in breast loss. The majority of these patients had undergone immediate reconstruction and use of implants, tissue expanders, and allograft or xenograft material. Although PCA did not make any determination about the rate of infection for these procedures, it is believed that the number of cases was significant enough to warrant further review.

PCA is forming a task force of recognized experts in oncologic breast surgery, plastic surgery, oncology, epidemiology, infectious disease, patient safety, and consumers to identify and characterize contributing factors and to recommend quality improvement actions. The mission of the task force will be to develop and promote guidelines for breast reconstruction following mastectomy for cancer.

The specific aims of the task force will be to: identify and quantify the types of adverse events associated with breast reconstruction following surgery for cancer; to identify and quantify the contributing factors underlying these adverse events; and to develop guidelines for reconstructive breast surgery.

In the meantime, PCA recommends that hospitals continue to review any mastectomy/reconstruction cases involving postoperative infections or other complications. Those cases where patients have been required to undergo additional surgery, i.e., removal of prosthetic or incision and drainage, should be reported to PCA as Type 4 events under PCA regulations 243 CMR 3.08.



## PRESSURE ULCER PREVENTION AND CARE: AN SRE SUCCESS STORY

Joanne C. Locke, RN, JD Director Quality Improvement and Risk Management Faulkner Hospital

Faulkner Hospital has always had a strong commitment to the prevention of pressure ulcers among our vulnerable patient population. Many of our patients are elderly and frail, with a significant number coming from skilled nursing facilities and rehabilitation centers. The hospital's Board-Certified Wound Care Specialist, a Registered Nurse, works with our nursing staff to monitor patients for pressure ulcers, and the hospital utilizes its online safety reporting system as an additional quality and patient safety tool to capture and trend identification of pressure ulcers upon admission, as well as any that develop or worsen during admission. The Hospital participates in the MHA Patients First Project for Pressure Ulcer Prevalence. From June through December 2008, the Patients First data reflected an impressive zero rate of pressure ulcers at Faulkner Hospital.

In April 2009, however, there was a surprising change when one ICU patient acquired a serious pressure ulcer and another developed a deep tissue injury (DTI) while in the hospital's ICU. Both patients were very ill. For some period of their admission they were so hemodynamically unstable as to limit the ability of the nursing staff to move the patients. In response to these events, the hospital conducted a thorough and timely investigation and developed a comprehensive Corrective Action Plan (CAP). The plan was developed through a collaborative effort between the Risk Management and Nursing Departments.

The Hospital developed a two phase Corrective Action Plan. The first phase of the plan focused upon the ICU. The ICU recently had received two new critical care beds (XPRT Support Surface by Stryker) for trial purposes. The beds featured enhanced technology to provide skin benefits to the ICU patient. While the beds contained excellent features, there was an assessment that the orientation to the use of the beds had been incomplete. Staff members were re-educated in the use of the bed from the company's RN Clinical Specialist, the ICU Clinical Leader and the ICU Nurse Educator. The nursing staff completed a competency to demonstrate their knowledge of the bed's features. An educational packet was created for incorporation in the ICU orientation program. All new nurses will be trained and tested for competency, and their learning reinforced by preceptors. All newly hired nursing staff will complete a corresponding competency checklist during their orientation. Laminated fact sheets regarding the proper use of the beds were placed at each patient's bedside flow chart, in order to make the information readily accessible.

The Wound Care Specialist recommended two educational modules about the prevention and treatment of pressure ulcers. These modules are 50 minutes each in length and provide staff with 1 CEU for the successful completion of

each module. The modules are based upon guidelines for the prediction and prevention of pressure ulcers issued by the Agency of Health Care Policy and Research (AHCPR). There also was an effort to improve documentation of skin assessment and care in the ICU. The ICU Flow Sheet was redesigned to contain a section for documenting Q2 hour position changes for patients, as well as skin inspections on each shift.

Phase Two of the Corrective Action Plan focused upon hospital-wide education. An email broadcast was sent to all Nurse Managers and staff nurses to alert them to the newly identified need for more consistent and complete documentation of skin care.

Criteria and score-based nursing interventions are in the process of being incorporated into the patient's electronic Care Plan. The nursing interventions are evidence-based, driven by the Braden Assessment Tool, adapted from the Hartford Geriatric Nursing Initiative (HGNI). Ayello EA, Sibbald RG. Preventing Pressure Ulcers and Skin Tears, in: Capezuti E, Zwicker D, Mezey M, Fulmer T, Editors; Evidence-Based Geriatric Nursing Protocols for Best Practice. 3<sup>rd</sup> ed. New York (NY); Springer Publishing Co.; 2008 Jan. pp.403-29 [91 references]. The notable feature of this approach is that each type of tissue injury, such as "shear", is paired with a specific intervention that is most appropriate to the identified injury.

In order to facilitate documentation of pressure ulcer prevention and care efforts, criteria-based MediTech electronic Skin Assessment Screens are being implemented house-wide. A more formalized documentation tool has been created, and house-wide education is underway to teach nursing staff about standardized documentation of the following parameters for every pressure ulcer: location, stage and size of the lesion, including width, length, and depth in metric units; description of the wound bed, including color and other wound characteristics such as amount of granulation and necrotic tissue, the presence and description of exudate; description of surrounding skin/tunnel/sinus track formation, using National Pressure Ulcer Advisory Panel guidelines; turning and re-positioning schedule, use of pressure relief surfaces, and topical applications/dressing changes. The hospital also purchased disposable instruments to provide greater accuracy in measurements. The hospital previously had purchased PrimeAire pressure reducing mattresses on all Med-Surg beds in October 2007.

Another area for improvement identified during this review was the need for more comprehensive physician documentation of skin and nutritional assessments, and interven-

*(Continued on page 7)*



### Pressure Ulcer Prevention *(Continued from page 6)*

tions. The Nurse Manager of the ICU collaborated with the unit's Medical Director to raise physician awareness during the monthly ICU Committee meeting. The Director agreed to educate the house staff in the ICU about skin issues and agreed to clearly articulate expectations for improved documentation in this area. Additionally, the Assistant Chief of Medicine was informed of insufficient or missing documentation about skin assessment and care, which he will include as a teaching component during his interactions with residents and interns.

Communication, as always, plays an important role in team efforts to prevent pressure ulcers. One opportunity for improvement that Faulkner Hospital identified was the hand-off among nursing staff with regard to the patient's turning and positioning. To effect this change, the ICU piloted a new initiative, "RE-turn the clocks", and a Pressure Ulcer Champion was selected. She monitored ongoing compliance with the new tool and, in conjunction with the Clinical Leader, assessed the effectiveness of the tool. Following a pilot study with another tool on the medical floors, the hospital chose the tool known as, "Turning is Key". Both tools involve placing a bedside "clock" to serve as a reminder and a communication tool about the patient's last turning and positioning.

House-wide education about pressure ulcer assessment, staging, and standardized documentation among the nursing staff is another prime component of the plan. All RNs are required to complete two ANCC-approved courses that are available on-line at Coloplast Academy: "Wound Assessment and Documentation", and "Pressure Ulcer Prevention". All nurses are required to submit a certificate of completion and competency to their nurse managers. There also was recognition that the education of the Patient Care Assistants (PCA) is another key component of any successful skin care program. Faulkner Hospital's Nursing Education Department provided a Story Board poster and a didactic teaching module about pressure ulcer prevention and care, highlighting the "Turning is Key" tool, during the hospital's recent PCA Competency Day.

Policy development also was reviewed and revised. The revised policy includes specific references to the Braden scale assessment tool and new staging guidelines based upon national, evidence-based standards from the ANCC.

Perhaps the most important part of any new or revised initiative is the development of measures of success. The Assistant Vice President for Quality in Nursing will oversee the creation and development of audit tools to measure the success of our new program. Assessment of the effectiveness of the initiative will be ongoing, with program modifications based upon audit results.

In summary, while Faulkner Hospital previously had demonstrated an effective program for pressure ulcer prevention and care, an unexpected development of pressure ulcers in two ICU patients highlighted the opportunity to re-examine our practice. The Hospital recognizes that an ongoing national debate exists about whether all pressure ulcers can be avoided, especially in the ICU setting. There, the team often faces critically ill and hemodynamically unstable patients who may have suffered prolonged periods of poor perfusion, resulting in high vulnerability to pressure ulcers, despite the best of care. In addition, when a patient arrives at the hospital with an impaired nutritional status, this creates another impediment to the prevention of tissue injury. Faulkner Hospital concurs with the position of the National Pressure Ulcer Advisory Panel (NPUAP) that most, but not all pressure ulcers are avoidable. We hope that renewed efforts to improve our staff's knowledge base and communication skills around this important aspect of care will provide the best possible protection from pressure ulcers.

---

[Faulkner Hospital is a 153 bed community teaching hospital located in Boston. Faulkner Hospital is a member of the Partners Healthcare Network.](#)



#### *The ICU Dilemma*

*"Preventing pressure ulcers is a challenge, especially in the ICU. Some of these patients are so unstable that their blood pressures are insufficient to perfuse their tissues; add to that a low albumin and pre-albumin, as we see in many of the frail Nursing Home population who arrive via the ED, and it makes the situation untenable. A deep tissue injury (DTI), the precursor to serious ulcers, can occur within an hour or two in the most vulnerable populations. The best we can do is to develop a comprehensive practice, as we have tried to establish with our new plan, and hope that we can stabilize the patient before a pressure ulcer develops. We believe that good care can reduce the chances of an ulcer."*

*Joanne C. Locke, RN, JD Director of Quality Improvement and Risk Management, Faulkner Hospital*



### ADULT TRACHEOSTOMY TUBE DISLODGE: GUIDING PRINCIPLES\*

- Dislodgement of the tracheostomy artificial airway is not common, but can be devastating. The hospital system that embraces responsibility for implanting an artificial airway is then responsible for sustaining it.
- Fresh tracheostomies should be labeled as such, including date of insertion, cannula size and surgeon/service of record. Using a "Fresh Tracheostomy" information sign (below) is recommended. Note should be made of anatomical abnormalities and whether any difficulties in oro-tracheal intubation are anticipated. A spare tracheostomy tube and a pair of scissors should be kept at the bedside at all times.
- The single most disastrous response by bedside responders to a dislodged tracheostomy is an ill-fated and time-wasting effort to REINSERT the tracheostomy tube. Reinserting the tracheostomy tube in a freshly tracheotomized patient (tracheostomy site <7 days old) is a natural reflex, but typically leads to prolonged hypoxia and only delays securing the airway via oral endotracheal intubation. These efforts commonly terminate in death or severe anoxic encephalopathy.
- Fresh tracheostomy sites have peri-stomal tissues that easily collapse and make re-insertion of the cannula impossible for nonsurgeons or inexperienced surgeons.
- Management differs between tracheostoma and tracheotomy. If the larynx has been removed surgically, mask ventilation or oro-tracheal intubation is not an option and must not be attempted. Laryngectomy or any other significant upper airway problem should be noted at the bedside.
- The first step to successful management of a dislodged tracheostomy tube is to call for help, i.e. Code Blue for unstable airway, then, REMOVE the tracheostomy tube. Code Blue activation is the fastest way to get Anesthesia to respond to an airway emergency. A second call should go to the surgeon of record.
- Removal of the tracheostomy tube entails cutting the sutures, deflating the cuff and removing the tube. This removes a potential airway obstruction, and also facilitates face mask ventilation. A gauze bandage or hand may need to be placed over the stoma to reduce the air leak during mask ventilation. Fresh tracheostomy patients should have a spare tracheostomy tube and a pair of scissors at the bedside at all times.
- Established tracheostomy sites (7 days or greater) develop a well defined track and reinsertion of a tracheostomy or endotracheal tube into this site has a much higher likelihood of success.
- Re-insertion of the tracheostomy tube during the first 30 days following insertion is preferably performed by a surgeon familiar with tracheal anatomy. The tracheostomy tube should be inserted with an obturator. In the setting of an older tracheostomy site, ie > 30 days, and a stable patient who is well oxygenated and ventilating, other experienced clinicians are eligible to recannulate the tracheostomy stoma. Insertion of the tracheostomy tube should be confirmed by fiberoptic flexible laryngoscopy (FFL) to insure appropriate re-positioning.
- To reiterate, in the setting of a dislodged fresh tracheostomy tube...
  - Call Code Blue
  - DO NOT TRY TO REINSERT the tracheostomy tube**
  - "When in doubt, take the tube out!"
  - Facemask ventilation after decannulation (removal of the tracheostomy tube) requires manual occlusion of the stoma to prevent loss of tidal volume. Mask ventilate the patient and proceed accordingly as with any other spontaneously ventilating patient in respiratory distress. Reintubate from above.

\* The PCA Division appreciates the submission of these guidelines by a Massachusetts tertiary care facility that has requested anonymity.

**FRESH TRACHEOSTOMY**

Date of insertion: \_\_\_\_\_

Cannula size: \_\_\_\_\_

Surgeon of Record/Service: \_\_\_\_\_

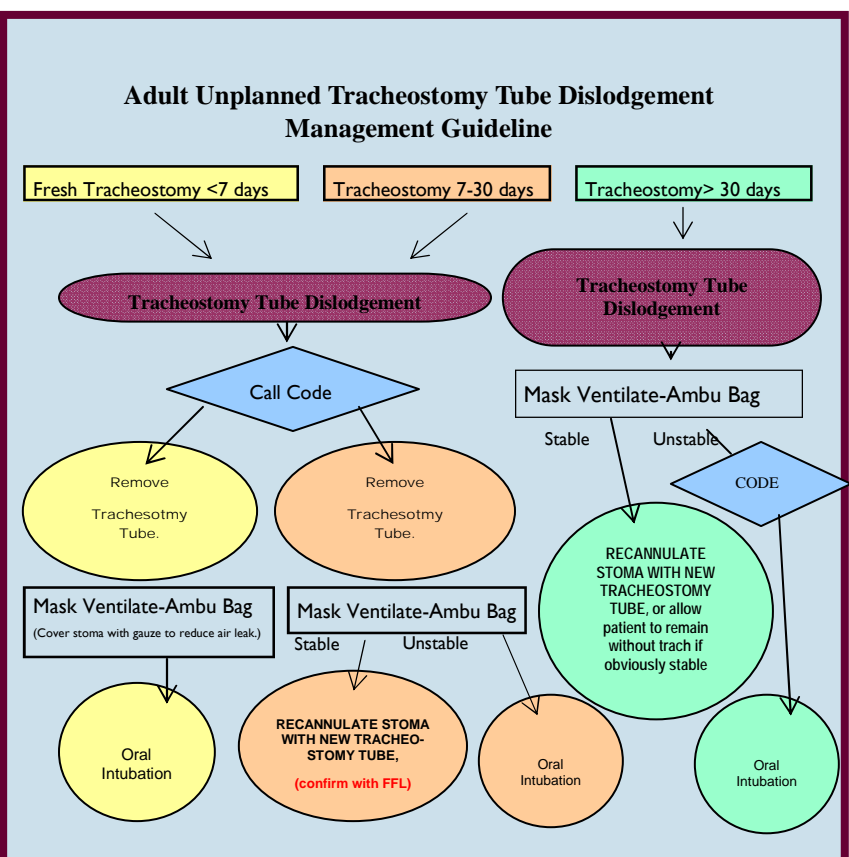
Stay sutures in place:  yes  no

Larynx removed:  yes  no

Oro-tracheal intubation:  easy  difficult

Oro-pharyngeal anatomy:  normal  abnormal

Need for fiberoptics:  likely  unlikely





## MANAGING PSYCHOGENIC POLYDIPSIA—BRIDGEWATER STATE HOSPITAL

Marilyn Fisher, RN Quality Management Specialist Bridgewater State Hospital

Bridgewater State Hospital uses the Failure Mode Effect & Analysis (FMEA) method for proactively addressing safety risks and improving patient care at the facility. The Hospital Executive Committee identified patients with recurrent hyponatremia as a high risk group and one for which improved care could have major impact on outcome.

Early on the Work Group determined that the focus of the FMEA should be on hyponatremia caused by Psychogenic Polydipsia. This condition occurs in patients whose mental illness predisposes them to continuously access fluids. This excessive intake dilutes the sodium levels in the blood resulting in potentially dangerous effects such as rapid brain swelling leading to coma and death.

Early intervention in the cycle of increased fluid intake is a key to prevention of negative outcomes. The FMEA work group developed an algorithm for management of all patients at risk for Psychogenic Polydipsia, the goal being reduction in morbidity defined as seizures and/or transfer to an acute care facility.

The three major components of our hyponatremia management protocol are (1) identifying High Risk patients, (2) placing them in a monitoring program, and (3) raising staff awareness to consider low sodium levels in the differential when a patient presents with a change in mental status. Additionally the staff is educated to be mindful that a change in mental status not related to a current low sodium level may predispose the patient to excessive fluid intake behaviors.

More specifically, if a patient's sodium is  $\leq 130$ , he will be admitted to the infirmary. Fluids are restricted, Intake and Output monitored, and medications assessed to rule out a drug induced hyponatremia. Blood levels are obtained at least weekly. Improvement is measured by assessing absolute values and trending for the particular patient. Based on this assessment patients who do not show improvement or deteriorate are sent out to the ER for evaluation and treatment and hospitalized for acute care if indicated.

All patients returning from an ER visit or hospital admission are admitted to the infirmary until at least the next day. Patients treated for Hyponatremia would need to have at least one normal level following their return before being discharged to a housing unit. All patients who have had an Infirmary admission for a sodium level  $\leq 130$  will be placed on a High Risk list, will have a Psychogenic Polydipsia Treatment Plan in their medical record, and be seen at least every 3 months in the Chronic Disease Clinic. The frequency of lab studies will be specific to the individ-

ual patient, but minimally will be monthly until stable and thereafter quarterly at minimum.

The hyponatremia protocol also included the following action steps along with outcome measures and identification of staff responsible for implementation.

- ◆ Educate identified high risk patients and assess their willingness to comply with prevention and treatment.
- ◆ Reevaluate and optimize treatment of the underlying psychosis.
- ◆ Assess patients' capacity to competently refuse treatment; consider substituted judgment or guardianship.
- ◆ Reassess monitoring schedule of high-risk patients during times of high temperature; educate these patients about special precautions to be taken at these times.
- ◆ Revise Hyponatremia Master Treatment Plan.

To engage all staff in the process of identification and intervention with at risk patients, a "Read and Test" on Hyponatremia was developed and distributed to all staff. Additionally, the results of the FMEA were reviewed at the monthly staff meeting and featured in the BSH Newsletter.

Data is being collected on admissions to the Infirmary, Sodium level at time of admission, associated symptoms, and Infirmary Course of Treatment. This will be analyzed to evaluate the impact on morbidity as described above. A very preliminary review of the data suggests that the admission rate has increased accompanied by a higher sodium level upon admission. This suggests that the algorithm established may be having the intended impact of early identification and intervention to lower morbidity.

Bridgewater State Hospital is a 330 bed, combined, male-only, correctional institution and psychiatric hospital. Bridgewater is accredited by the Joint Commission.





## OPERATING ROOM FIRES CONTINUE TO BE A “BURNING ISSUE”

According to the American Society of Anesthesiologists (ASA) Task Force on Operating Room Fires, the lack of a national reporting system for operating room fires makes it difficult to determine how many operating room fires take place, but the ASA estimates there are between 50 and 100 operating room fires every year.\* The PCA Division has received four reports of fires associated with alcohol-based preps over the past three years, including one that appeared to be due to the patient's use of an alcohol-based skin lotion prior to surgery. One fire took place during a minor surgical procedure in the ICU.

In each case, surgical staff responded quickly to extinguish the fire and protect the patient, but, although there were no deaths or serious injuries, three of the fires resulted in patient harm. Two of the four fires caused first and second degree burns to the face or neck, one fire caused a burn to a lower extremity, and one was extinguished by the surgeon without patient injury. As always, the fire triad was present: an ignition source, fuel, and an oxidizer. In all four of the cases, cautery equipment served as the ignition source, with chlorhexidine prep, an alcohol-based prep, an alcohol-soaked sponge, and an alcohol-based skin lotion serving as fuel. Oxygen was in use in all but one fire, and two of the burns starting on or near the patient's face mask. Of interest, one fire started 30 minutes into the procedure, and after due diligence had been performed to allow adequate

time for the alcohol-based prep to dry.

These fires were investigated by the facilities involved, and all of the facilities made changes to their policies and procedures. Most eliminated alcohol-based preps in their Operating Rooms, and, in higher fire-risk surgeries, encouraged the use of nasal cannula for oxygen delivery rather than masks, when appropriate. All recognized and responded to the need for improved fire-safety awareness with education and training.

These fires illustrate the importance of fire prevention and response. The potential costs to the patient are obvious and potentially catastrophic. What can you do to prevent these fires? We recommend that you know and practice the fire prevention procedures in place at your facility. Educate yourself regarding any practice guidelines particular to your specialty, such as the ASA's Practice Guidelines, cited below. Use water-soluble rather than alcohol-based preps whenever possible. If an alcohol-based prep is used, follow your facility's safety guidelines for its use. Finally, participate in any fire safety programs and drills available at your facility.

---

\*Practice Advisory for the Prevention and Management of Operating Room Fires. *Anesthesiology*, V 108, No, 5, May 2008. <http://www.asahq.org/publicationsAndServices/orFiresPA.pdf>

### SAFETY AND QUALITY REVIEW CORNER:

#### Event Description

A 76 year old female on Coumadin for Paroxysmal Atrial Fibrillation (PAF) was seen in the Emergency Department (ED) after striking her head in a fall. The CT raised the question of the presence of intraparenchymal contusion versus artifact, and recommended a repeat CT. The patient's INR in the ED was 1.8. The ED attending, in consultation with the on-call neurosurgeon, ordered a repeat CT in 6 hours. The trauma surgeon was aware of the plan. Neither surgeon saw the patient in the ED. Admitting orders were written by the medical resident at 6:00 am. At that time the Glasgow Coma Scale (GCS) was 15 and the patient was complaining of nausea. At 6:40 am, she went into Atrial Fibrillation at 110-130 and was medicated with Zofran and Morphine IV. At 7:00 am, the patient's bed was changed to telemetry and she was treated with IV Lopressor and Diltiazem. The GCS remained at 15. A repeat CT, performed at 8:00 am (5 hours after the initial CT), showed an increase in size of the intraparenchymal hemorrhage with slight herniation. The patient was treated with Vitamin K. Her GCS deteriorated to 11 at 8:45 am. The Intensivist evaluated the patient and ordered transfer to a tertiary care facility. Prior to transfer, the patient required intubation and received 2uFFP. She underwent a hemicraniectomy with evacuation of hematoma at the tertiary care facility.

#### Internal Review Results/Performance Improvement Measures

The case was reviewed by the peer review committee for the hospital's trauma program. There were differing opinions as to whether there was a "mis-read" of the first CT scan. The consensus of the multidisciplinary trauma committee was that if there is an equivocal reading on a head CT in an anticoagulated patient who has sustained a head injury, fresh frozen plasma should be given immediately and the patient transferred to a higher level of care. The committee recommended referral of the case to ED and Radiology peer review, and revisions to the admission and transfer policies for head injuries. The hospital's PCA committee concurred with the findings and recommendations of the multidisciplinary trauma committee.

At the time of the report, admission guidelines for patients with head bleed were being revised, and admission and transfer guidelines for all neuro trauma patients were being developed. Revisions to the current managing guidelines for a patient with head trauma now include guidelines for when to repeat the head CT. The hospital also submitted performance data for the radiologist and ED physician, indicating that there were no quality concerns about their rates of radiology mis-reads or returns to the ED, and reassuring PCA that these two physicians were competent providers.



### 39 is Fine, but Chubby Cheeks Take 40 Weeks

“There is significant evidence to support no elective delivery prior to 39 weeks. There is current new literature supporting adherence to this guideline—as well as the additional maternal and neonatal morbidity when it is not followed. The current state of the United States is we have normalized deviance and supported a swing to elective delivery less than 39 weeks. As healthcare providers, we all have a responsibility to do no harm. Let’s join together to support this effort one baby at a time.”

Sue Leavitt Gullo, RN, MS Managing Director, Institute for Healthcare Improvement  
Ms. Gullo is currently involved with the IHI Impact Communities for Perinatal Care

See: <http://preventingelectivedeliveries.blogspot.com/2009/06/babies-with-chubby-cheeks-are-cutest.html>

### PCA NOTES

Here are some of the issues identified in Safety and Quality Reviews submitted to PCA. During the first quarter of CY 2009

- ◆ Adequacy of supervision of mid-level providers, (Physician Assistants, Nurse Practitioners, Certified Nurse Midwives and Certified Nurse Anesthetists).
- ◆ Continuity of assessment of patients that “board” in the Emergency Department while waiting for a bed.
- ◆ The most common location for development of Stage III pressure ulcers was the Intensive Care Unit.

**DID YOU KNOW?** In some situations, a central line inserted in a patient’s artery rather than a vein may be a Serious Reportable Event (SRE), specifically “surgery performed on the wrong body part.” PCA interprets the definition of “Surgery,” used by the NQF in its Implementation Guidance for this category of events to include central line insertion. Events involving “surgery performed on the wrong body part” are SREs, regardless of whether or not the patient suffered harm. However, understanding that correct central line insertion may require multiple attempts, when misplacement of the catheter is recognized either during the procedure or when the x-ray to confirm correct placement is performed, and there is correction of the line placement, this event need not be reported as an SRE. For further clarification, please contact the DPH Division of Health Care Quality or the PCA Division.

### CONTACT PCA

To be added to the PCA Newsletter and advisory mailing list, update hospital contact information, submit an article, request an SQR form, or obtain additional information, contact:

[jennifer.sadowski@state.ma.us](mailto:jennifer.sadowski@state.ma.us) or (781) 876-8296. Send mail to MA Board of Registration in Medicine, PCA Division, 200 Harvard Mill Square, Suite 330, Wakefield, MA 01880.

Look for PCA at the Poster Session of the **Eighth National Quality Colloquium** at Harvard University on August 18, 2009. We will be presenting: Mandatory Confidential Reporting Systems-Making a Difference in Patient Safety. For information about the Colloquium, see: <http://www.qualitycolloquium.com/overview.html>