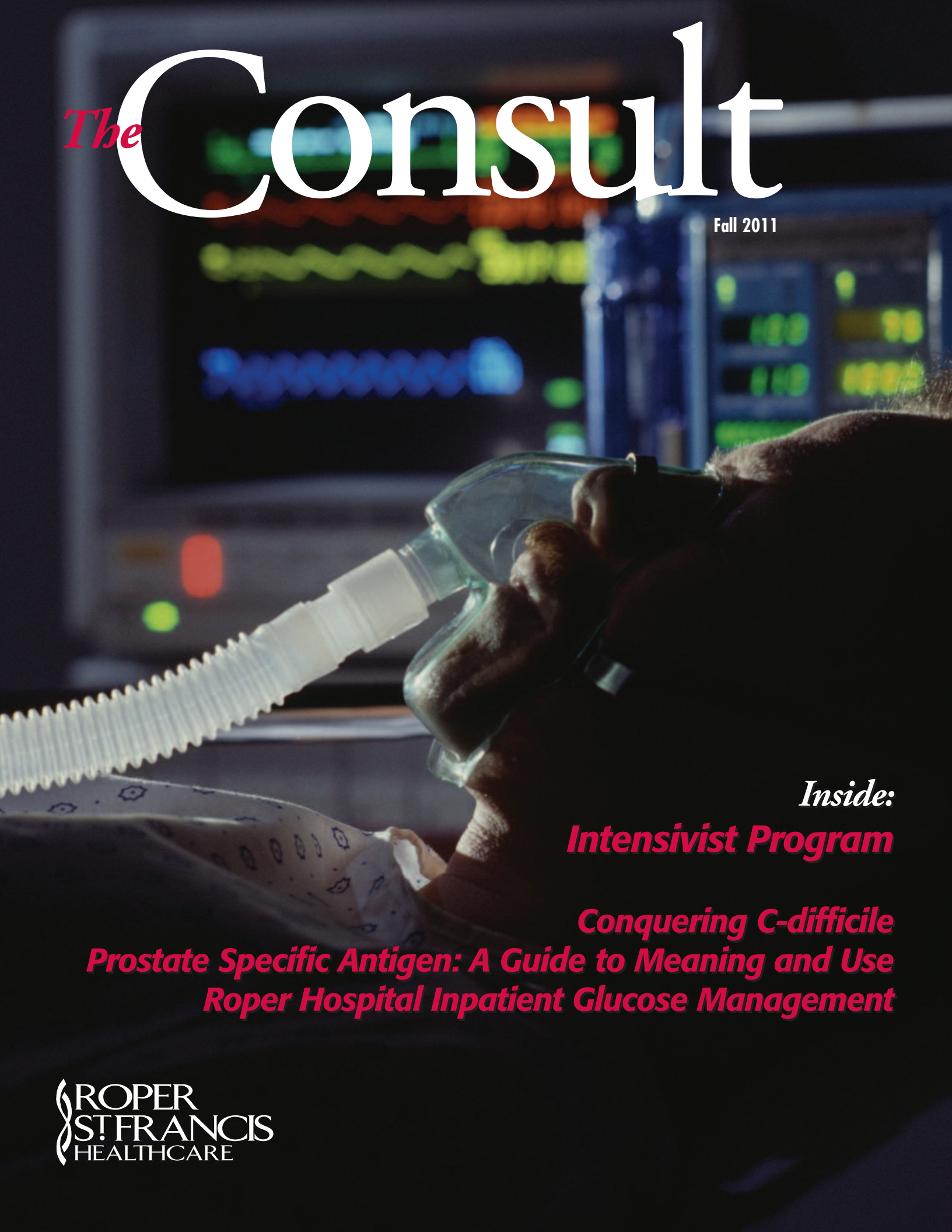


The Consult

Fall 2011



Inside:

Intensivist Program

Conquering C-difficile

Prostate Specific Antigen: A Guide to Meaning and Use

Roper Hospital Inpatient Glucose Management

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RSFH

LEADERSHIP

Dear Colleagues,

This issue of *The Consult* gives you information on many of the quality improvement initiatives we've undertaken system-wide and in our ICUs. Dr. Todd Shuman, who wrote our intensivist cover story, joined Roper St. Francis Healthcare a year and a half ago, and has taken the lead in many of these efforts. Dr. Shuman's contributions were recognized this summer when David Dunlap named him Chief Quality Officer for Roper St. Francis Healthcare.



Let me add my thanks to Dr. Shuman for his expertise and leadership in this important work. He and Marion Martin, who heads our Center for Quality, Innovation and Patient Safety, have taken our strong foundation in quality and are building on it, ensuring that Roper St. Francis maintains our status as an industry leader in excellent patient safety, clinical outcomes and clinical efficiency.

I appreciate the positive feedback I have received from you on the Consult. Please keep your suggestions coming!

A handwritten signature in black ink that reads "Steven D. Shapiro M.D."

Steven Shapiro, MD
Vice President and Chief Medical Officer
Roper St. Francis Healthcare
steven.shapiro@rsfh.com



The Roper St. Francis Intensivist Team (from left): John Mitchell, MD, Steve Herndon, MD, Jason Gunn, MD, William Dawson, MD, Jim Carswell, MD, Graham Scott, MD. Not pictured, Todd Shuman, MD

Intensivist Program Improves ICU Quality of Care



By Todd Shuman, MD and
Mary Jane Plance, RN, MSN

In the changing healthcare environment, hospitals will be evaluated based on quality as evidenced by patient outcomes, patient safety and patient experience. With approximately four million intensive care unit (ICU) admissions per year in the United States, with an average mortality rate of 10-20 percent, the ICU with its increased complexity of care has become a major focus of these quality initiatives.

Considerable variability in mortality, development of hospital-acquired conditions and medical errors have been observed among hospital ICUs. A growing body of evidence suggests that this variability and the quality of care in ICUs is strongly influenced by the use of evidence-based practices, presence of physicians with specialization in critical care and the staffing patterns of these critical care physicians.

Dr. Peter Pronovost, an intensivist at Johns Hopkins Hospital, found that ICUs with high intensity staffing (critical care physicians who manage or co-manage all ICU patients and are present on-site) was associated with a 30 percent reduction in hospital mortality and a 40 percent reduction in ICU mortality. (JAMA 2002; 288:2151-62) In addition, critical care is a costly component of the national healthcare budget, and numerous studies have also demonstrated reduced hospital and ICU length of stay for patients who are managed in ICUs with high intensity staffing. (Crit Care Med 2004; 32:1247-1253).

In an effort to improve patient care, reduce mortality and optimize hospital resources, Roper St. Francis Healthcare launched an intensivist program approximately a year and a half ago. Dr. Todd Shuman, as director of Intensivist Services, has worked with Charleston Pulmonary Associates to develop a program which achieves the high intensity staffing and improved outcomes mentioned above.

One of these evidence-based initiatives has been the effort to decrease mortality from sepsis. The Institute for Healthcare Improvement embarked upon a Surviving Sepsis Campaign in 2002, which uses early goal directed therapy as outlined by Rivers et.al. in the New England Journal of Medicine in 2001. These efforts have decreased the mortality from sepsis throughout the world but had not been undertaken in Charleston. Over the last 10 months, our compliance and adherence to this evidence-based practice has decreased sepsis mortality at Roper Hospital from 48 percent to 14 percent and is directly related to involvement of the intensivist physicians in the patient management (Figure 1).

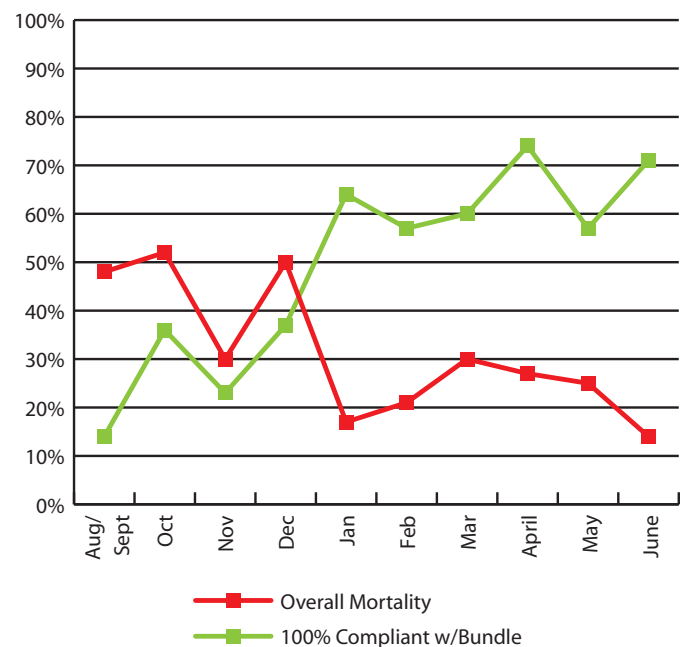
The RSFH Intensivist program has put into place other initiatives to further improve quality of care in our ICUs, including improved glucose management, improved communication and palliative care in the ICU, rapid extubation of the post-cardiac surgery patient and therapeutic hypothermia for the patient who suffers a cardiac arrest.

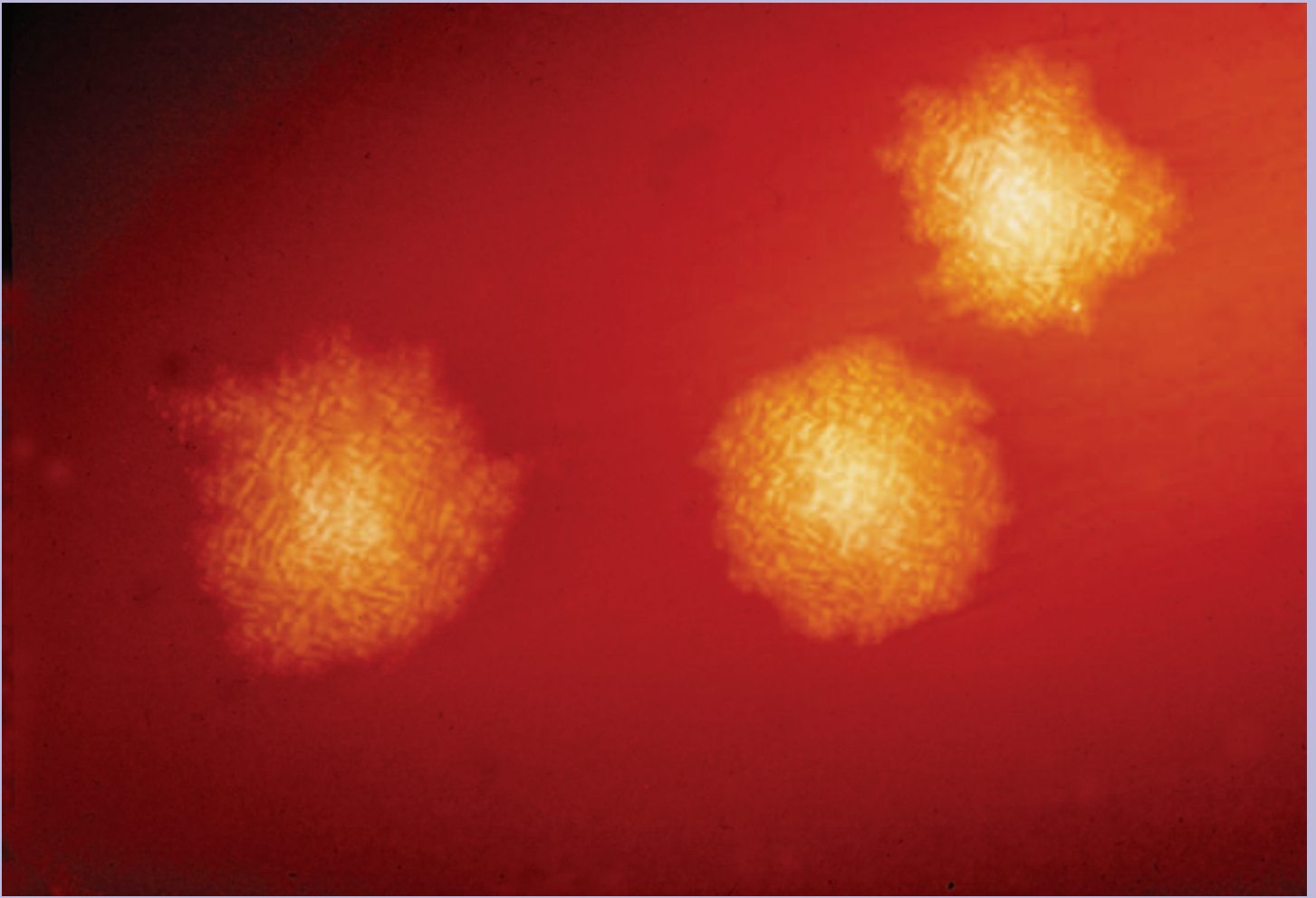
The Leapfrog Group, which was founded by the Business Roundtable in late 2000 and represents many

Fortune 500 companies including Boeing, was formed to improve quality, patient safety and affordability of healthcare. The Leapfrog Group has recently focused on ICU physician staffing as one of its safety standards because of its potential benefit to patients. Given the evidence of improved patient outcomes and the interest of patient safety advocates in intensivist staffing, the Roper Medical Executive Committee (MEC) approved the management or co-management by the intensivist service of all SICU patients at Roper Hospital effective September 1, 2011.

Bon Secours St. Francis Hospital MEC also approved the introduction of an intensivist service effective September 1. At St. Francis Hospital, this service will be initiated with all patients admitted to the ICU being managed or co-managed by a physician board certified in critical care medicine. In addition, these physicians will provide exclusive ICU care four hours/day Monday through Friday and will be on call 24/7 to provide ICU services. These efforts are being made to position RSFH as a leader in ICU patient safety and quality with improved outcomes for the patients in the Lowcountry.

Figure 1





This photograph depicts Clostridium difficile colonies after 48hrs growth on a blood agar plate.

Quality Improvement Initiatives

Conquering C-difficile



By Marion Martin, RN, MSN, MBA
Service Line Director, Center for Quality, Innovation and Patient Safety

The top hospital-acquired infection is now Clostridium difficile (C-diff), surpassing MRSA as the number one hospital-acquired infection that is impacting thousands of patients across the United States, Canada and Europe. C-diff spores can survive for extended periods, making it an especially difficult challenge, especially given new, more virulent strain that has evolved in recent years. Antibiotic use, which suppresses the normal flora, allows proliferation of C-difficile, a bacterium that infects the gastrointestinal tract and can cause serious health consequences, including death.

Roper St. Francis Healthcare continued to see a rise in C-diff infections even after implementation of Modified Contact Isolation. Our data demonstrates a 33 percent increase in C-diff infection at Roper Hospital, and a 22 percent increase at St. Francis Hospital over the last year. A conservative estimate for C-diff infections includes an increase LOS 2.6 to 4.5 days with an attributable cost per episode (excluding the cost for surgery) of \$2,500 to \$3,500. Attributable mortality is 6.9 percent at 30 days and 16.7 percent at one year.

C-difficile toxin EIA lab test is 40 percent sensitive leading to misdiagnoses and an unknown C-diff spore burden in the environment. There is evidence that patients are treated inappropriately and with wrong antibiotics.

The Roper St. Francis quality team developed a multi-disciplinary project led by our Physician Champion, Dr. Julia Haile. The project scope included a focus on accurate and cost effective laboratory testing, the prevention of transmission, the provision of appropriate treatment and the development of appropriate antibiotic stewardship.

Our team accomplishments to date include:

Transmission Team:

- New sign for hand gel dispensers
- Revised isolation practices
- Equipment and environmental team working on cleaning needs
- Focus on education for both staff and patients
- Implementation of a bleach-based disinfectant for environmental cleaning by Environmental Services, Nursing and other healthcare workers

Data Collection:

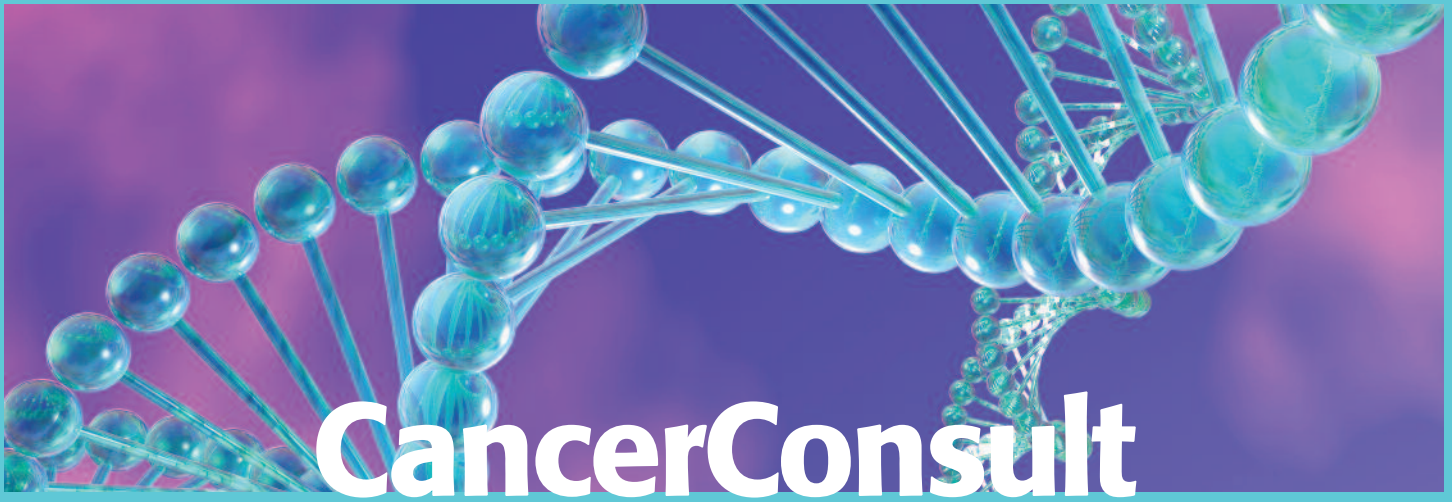
- Dr. Haile reviewed 60 charts that exhibited positive toxin tests
- Will continue chart reviews with new testing capability

Treatment team:

- Working with those patients who have resources to acquire oral Vancomycin post-discharge
- Working on protocols
- Hosted a breakfast with local Nursing Homes to address ongoing Vancomycin treatment once discharged
- C-diff Infection Orders
- Provides succinct review of IDSA/SHEA guidelines for treatment of C-diff in an order set format. Goal: Easy access to best practice recommendations
- C-diff Toxin Screening Tool and Order Form
- Initiated by Nursing at time of admission or at new onset of diarrhea
- Promptly identifies patients with signs and symptoms of possible intestinal infection, such as C-diff
- Initiates a protocol for *isolation* and an *order* for C-diff toxin PCR testing which requires physician signature
- Goals: Minimize environmental contamination and transmission and shorten time to diagnosis

Early Detection Team:

- Implemented new rapid testing methodology (PCR) which is 95 percent sensitive
- New triage questions have been put in place system-wide to assist in identifying priorities for room placement and isolation
- Incorporated county EMS into the process



Prostate Specific Antigen: A Guide to Meaning and Use



By William Carter III, MD
Lowcountry Urology Clinics, PA

Prostate Specific Antigen (PSA), a protein found almost exclusively in the prostate and is encoded by the human kallikrein gene family, was first discovered in 1972, and in recent years more continues to be learned about PSA and its relation to diseases of the prostate most commonly BPH (Benign Prostatic Hypertrophy), prostatitis and prostate cancer.

In 1989 Dr. Thomas Stamey studied a population of patients with prostate cancer and reviewed their PSA values. Utilizing the Hybritech assay Dr. Stamey established a level of 4.0ng as the level at which a prostate biopsy should be recommended. Utilizing this cutoff was predictive of the finding of prostate cancer and was verified by pathologic findings after radical prostatectomy. Due to this study and many others, the current recommendation by the American Urology Association and other organizations is that patients should be offered PSA screening for the early detection of prostate cancer.

“It is important to note that there is no one level of PSA that is predictive of either the presence or absence of prostate cancer.”

Men considering PSA screening can be told that PSA screening decreases prostate cancer mortality by 32.5 percent and decreases patients presenting with metastatic prostate cancer by 75 percent.¹ Patients should also be counseled regarding the potential of an elevated PSA not being due to prostate cancer which creates the possibility of an unnecessary prostate biopsy.

The first paper indicating a direct correlation between PSA Velocity (PSAV) or a change in PSA and the probability of prostate cancer detection was published by Carter, et al.² This study found that an increase in PSA of 0.75ng/year was shown to indicate the presence of prostate cancer with a specificity of 90 percent. Additional work to improve the predictive value of PSA to identify patients with prostate cancer has led to the concept of Risk Count which is defined as an increase in PSA of 0.4 ng/year.³ Each time there is a PSA Velocity (PSA increase) equal to or exceeding 0.4ng/year (1 Risk Count) the probability of the patient harboring a prostate cancer increases by 50 percent.⁴ Utilizing PSA in this manner allows detection of high grade prostate cancers with sufficiently low volume when cure is possible and at a time before the PSA reaches 4.0ng.

There are a number of facts regarding PSA that are important in evaluating and following patients, including:

- The standard assay on which *all* of the above work has been based is the Hybritech Assay by Beckman Coulter. An attempt to standardize the assay led to the development of the WHO assay. Unfortunately, this assay results in PSA values 17 percent lower than the Hybritech Assay.⁵ Realization of this discrepancy and conversion are necessary. Multiply the WHO assay by 1.25 to correct to a standard Hybritech assay.
- If a patient has a *first-degree relative* (father or brother) with prostate cancer and the patient's PSA is 2.5 or higher, a prostate biopsy will be *positive in 50 percent* of this group.⁶
- PSA is affected by Propecia (finasteride) and Proscar (finasteride) and Avodart. All three of these drugs decrease the PSA level by 50 percent. Thus, in a patient taking one of these drugs, the PSA should be doubled.
- In patients on these medications the PSA should *not change*. An increase of 0.5ng while a patient is taking Proscar, Avodart or Propecia should result a recommendation for a prostate biopsy.
- Avoid ejaculation for 48 hours prior to PSA determination in order to avoid a false increase in the PSA value (NIH Guidelines).
- PSA is not affected by bicycle riding.⁷

It is important to note that *there is no one level of PSA that is predictive of either the presence or absence of prostate cancer*. The factors that must be assessed in deciding whether or not the PSA is “elevated” include the size of the prostate (age is a surrogate indicator) and the presence or absence of prostatitis. As noted above, a PSA history (PSAV) is far more valuable than a single PSA value.

As a general guideline, a PSA of 4 should result in further testing. The NIH has issued guidelines regarding what is an acceptable PSA based on age:

- Men below age 45: PSA less than 0.6
- Men aged 45-50: PSA less than 2.5
- Men aged 50-60: PSA less than 3.5
- Men aged 60-69: PSA level less than 4.5
- Men older than 70 years: PSA less than 6.5

- African Americans are at higher risk of developing prostate cancer.

Despite the NIH's position on screening and guidelines, controversy regarding efficacy and decreased mortality due to PSA screening persist. In 2009 two large PSA screening studies were published. The first analysis was by Andriole.⁸ In this US study 38,343 men were

Active Surveillance: An Option for "Treatment" of Prostate Cancer

By William Carter III, MD
Lowcountry Urology Clinics, PA

Prostate cancer is the most common non-skin cancer in American men. It is estimated that in 2010, 217,730 men in the US will be diagnosed with prostate cancer, and 32,050 will die of prostate cancer. Surveillance Epidemiology and End Results (SEER) data have shown that the lifetime risk of diagnosis of prostate cancer is 16 percent in Caucasian men and 20 percent in African American men, with a lifetime risk of death of 2.8 percent and 4.7 percent, respectively.

At the present time data from CMS indicate that approximately 90 percent of men diagnosed with prostate cancer will be treated with either surgery or radiation therapy. At the same time, additional data estimate that approximately 30 percent of men over the age of 65 with a diagnosis of prostate cancer will not die of prostate cancer and do not need to be treated.

A number of recent articles and trials, including an article by Anna Bill-Axelson and the PIVOT (Prostate Intervention vs. Observation Trial, in press) indicate that in many cases patients with prostate cancer do not need to be treated. In the study by Bill-Axelson, 700 men with prostate cancer were randomized to be treated with surgery or followed with no treatment. After 15 year follow-up, there was no difference in cancer specific survival in patients aged 65 or older. The PIVOT essentially showed the same results.

The apparent trend toward over-treatment of older patients with low grade disease was noted 20 years ago

and led to evaluation of the potential for identifying older patients with low grade (no grade 4-5 disease), low volume prostate cancer who might not have life-threatening prostate cancer. Epstein, et al established criteria that were predictive of low volume prostate cancer. The initial criteria in a 12-core prostate biopsy were:

- No more than two of 12 cores positive
- 50 percent or less involvement of any core
- PSAD (PSA density) less than 0.15

This led to a clinical trial in which men who met the above criteria were offered close follow-up without curative-intent treatment at the time of diagnosis. The protocol guidelines specified a PSA and DRE every six months with repeat prostate biopsy every year. At this point over 900 men have been enrolled in Active Surveillance in the Johns Hopkins series and the outcome has been that 70 percent of men enrolled did not experience disease progression during follow-up with the prediction that these patients would not have disease progression during their life time. There have been no prostate cancer deaths and in the group (30 percent) who did progress, pathologic features at the time of progression and treatment indicated a cure rate equivalent to those patients who were treated at the time of initial diagnosis.

The largest series in North America is based in Toronto, Canada. Klotz, et al have enrolled over 4,000 patients and in follow-up, there have been four prostate cancer deaths. Roper St. Francis Healthcare currently has the largest number of patients under active surveillance in South Carolina.

randomly assigned to receive annual screening or no screening. The results showed that after 7-10 years of follow up the rate of prostate cancer detected was very low and did not differ between the two groups. The conclusion was that there was no benefit derived from PSA screening.

The second study, published in the same issue of NEJM by Schroeder⁹ was conducted in Europe. This analysis randomized 182,000 men to PSA screening every four years or to the control group that were not screened for prostate cancer. The results showed that after nine years the incidence of death from prostate cancer was reduced by 20 percent in the group who underwent PSA screening.

In the analysis of these two PSA-Screening articles in the same issue of the New England Journal of Medicine, a number of comments were insightful. A summary of these and other comments follows:

- The U.S. study by Andriole included men who had already been screened for prostate cancer by PSA determinations. Therefore, years of PSA screening had “removed” those men with prostate cancer from the available pool of potentially screen-detected (PSA elevated) patients with prostate cancers.
- The Schroeder European study began at a point in which most men in Europe had not been screened for prostate cancer.
- The US study was smaller and less mature than the European study.
- Both studies are immature and longer follow up is needed. Both studies are ongoing with a 15-year follow up planned.

In summary, PSA screening to decrease the mortality rate of prostate cancer remains somewhat controversial.

Despite the controversy, there are a number of conclusions from many studies that can add insight to the best approach to PSA screening:

- In a number of randomized controlled studies, PSA screening has resulted in a decrease in prostate cancer deaths and a decrease in patients presenting with metastatic disease (20% decrease in 1994; 40% decrease by 2010). These decreases have occurred at a time when the incidence of prostate cancer is steadily increasing.
- U.S. deaths from prostate cancer have plummeted 40 percent since 1992, five years after the introduction of

PSA screening, during a period in which incidence of prostate cancer is increasing while mortality is decreasing.

- The National Cancer Institute estimates that 40 - 70 percent of this mortality reduction is the direct result of prostate cancer screening.
- Utilization of PSA screening has resulted in 24,000 fewer deaths from prostate cancer during this period.
- Once prostate cancer has metastasized the cancer is not curable.
- PSA screening leads to earlier detection of prostate cancer.
- Offering PSA screening to patients at the appropriate age is an obligation.
- Counseling patients with regard to the advantages and disadvantages of PSA screening is necessary.

Acknowledgement: Members of Lowcountry Urology Clinics, PA graciously reviewed and contributed to this article (Drs. Steven Bielsky, John Britton, Mark Buchanan, George DelPorto, Fletcher Derrick, Howard Holl, Ben McInnes, Ian Marshall, Alex Ramsay, Brad Steele, Scott Wingo)

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Research Corner

RSF Cancer Care maintains an active oncology research program.

The following clinical trials are open and now enrolling new patients. For more information or to refer a patient, please contact Elizabeth Strojny, RN, at (843) 720-8386.

SWOG S1007

A phase III randomized clinical trial of Standard Endocrine Therapy with or without chemotherapy in patients with 1-3 positive nodes, hormone receptor positive and HER2 negative breast cancer with recurrence score of 25 or less. Recurrence score is to be determined by oncoproteotyping. This is an adjuvant study and patients can have either mastectomy or lumpectomy with plans for radiation per NCCN guidelines. The purpose of the study is to find out if the Oncotype Recurrence Score can help decide whether women should receive chemotherapy or not. Patients are randomized to receive chemotherapy and endocrine therapy or endocrine therapy alone. Chemotherapy as well as endocrine therapy is the physician's choice. Note that the oncoproteotyping can have been done prior to trial screening or be sent by the study nurses as a part of the registration screening.

NSABP B-43

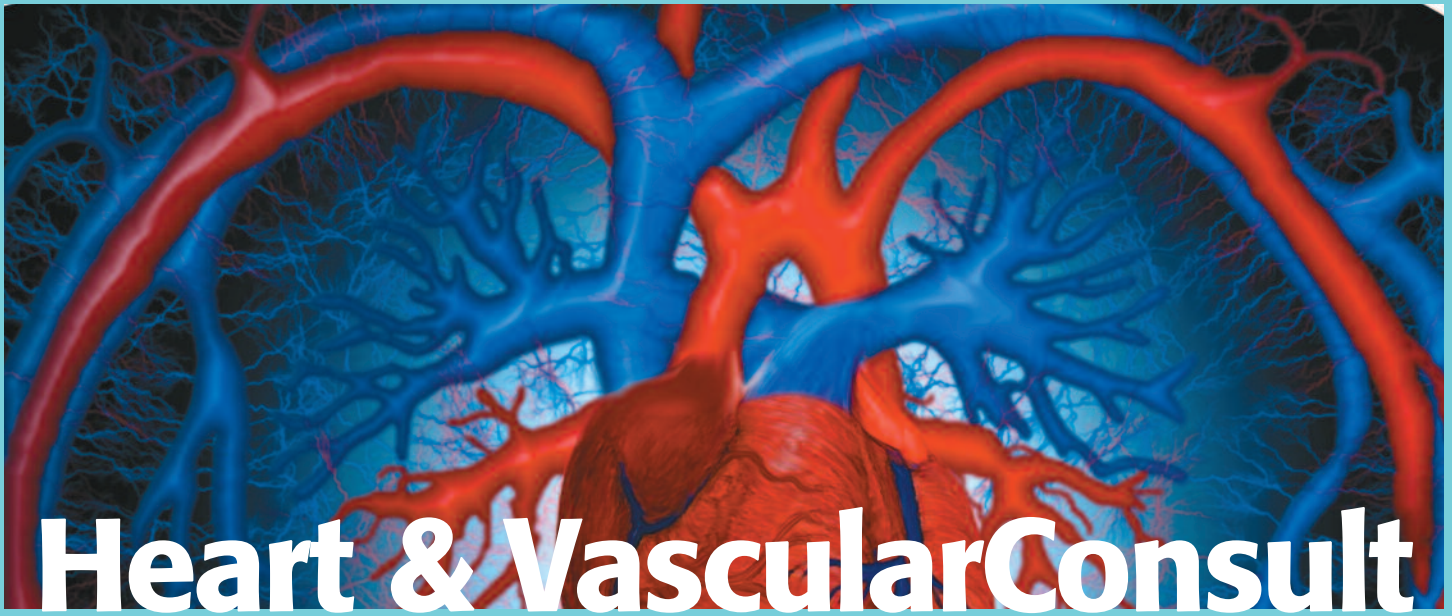
A phase III clinical trial comparing Trastuzumab given concurrently with radiation therapy and radiation therapy alone for women with HER2-positive ductal carcinoma in situ resected by lumpectomy. If axillary staging is done the nodal staging must be pN0. The DCIS must be determined to be HER2-positive as determined by the study's central testing lab. If determined to be positive then patients are randomized to either Group 1 which is radiation alone or to Group 2 which is radiation plus herceptin times 2 doses. This study is being done to find out if adding Trastuzumab to breast radiation therapy is more effective than radiation alone in preventing occurrence of breast cancer in the same breast, in the opposite breast, or in other parts of the body in patients with HER2-positive DCIS.

NSABP B-47

A randomized phase III trial of adjuvant therapy comparing chemotherapy alone (six cycles of docetaxel plus cyclophosphamide or four cycles of doxorubicin plus cyclophosphamide followed by weekly Paclitaxel) to chemotherapy plus Trastuzumab in women with node-positive or high risk node-negative HER2-low invasive breast cancer. The main purpose of this study is to learn if adding targeted therapy (Trastuzumab) to standard treatment with chemotherapy for early stage HER2-low breast cancer, will prevent breast cancer from returning. Low HER2 is defined as 1+ or if 2+ FISH or CISH must also be performed, and if FISH performed HER2 ratio must be less than 2 or if CISH is performed the result must indicate HER2 gene copy of less than 4 per nucleus. The treating oncologist determines which of the two chemotherapy regimen they will use and then patient is randomized to either Arm 1 which is chemotherapy alone or to Arm 2 which is chemotherapy and Trastuzumab. Note that Trastuzumab is given for 1 year.

NSABP P-5

A statin polyp prevention trial in patients with resected colon cancer. The main purpose of this study is to find out whether or not rosuvastatin (Crestor) is able to prevent colon polyps and colorectal cancer from occurring in patients who have already had a colon cancer removed by surgery. This is for STAGE I & STAGE II colon cancer resected by surgery. May have received adjuvant chemotherapy but must have been completed prior to registration to study. Patients are randomized to receive Group 1 which is a placebo taken once daily for 5 years or to Group 2 which is Resuvastatin 10mg tablet taken once daily for 5 years. This is a double blinded study. Note that participants cannot have hyperlipidemia with clinical indication for statin therapy.



Heart & Vascular Consult

Roper Hospital Inpatient Glucose Management



By Anita Ramsetty, MD
Roper Endocrinology

If the inpatient hospital setting was a movie and you needed a flashback, you would not have to go far into the distant past: only 10 and even five years ago, many hospitals including Roper Hospital, relied solely on the use of sliding scale glucose coverage, and perhaps a consultation with an inpatient hospitalist team if glucose levels were very far out of control in a patient. I recall being a resident many years ago, on an internal medicine team, and placing blood glucose management lower on the list of priorities when compared to the “serious” conditions like pneumonia and pancreatitis.

How times change! Beginning with a landmark study by Greet Van den Berghe showing that tighter glucose control in ICUs could drastically change outcomes, the whole approach to glucose management in hospitals took a 180-degree turn. Knowing that even temporary hyperglycemia in patients could impact not only patients’ recovery time and hospital stay, but ultimately their mortality and serious morbidities, made glucose control much more important than was previously recognized.



Glucose Management Team: (top left to right) Shanna Smith, CMA; Sharyn Nemeth, Receptionist; Victoria James, MS, RD, LD; Carla Pratt, RN, Diabetes Nurse Educator; Robert Hosler, Manager; (bottom left to right) Dr. Anita Ramsetty, MD, F.A.C.E., Endocrinology Medical Director; Ashley Long, MSN, ANP-C; Dr. Sarah Dolven, MD, F.A.C.E.

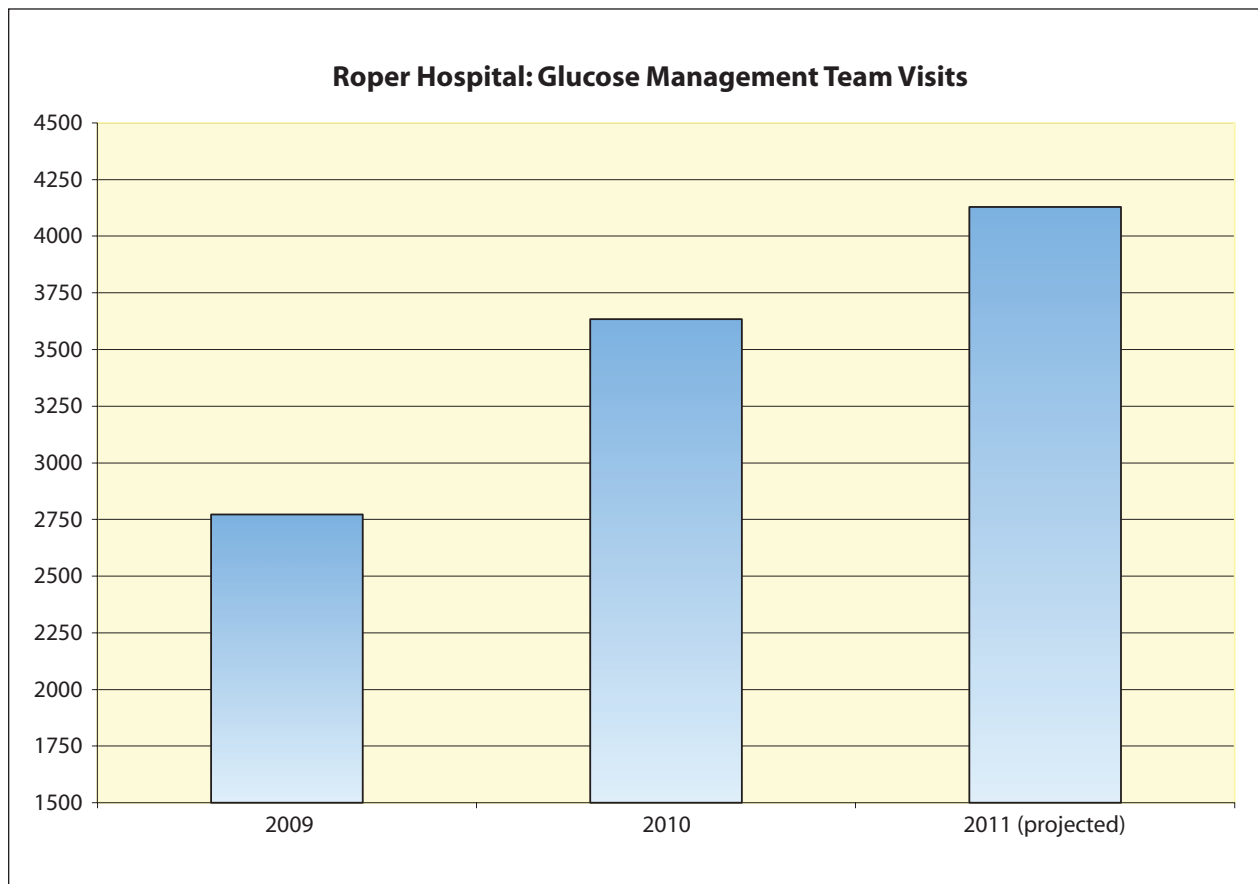
Fast forward to present day: in many hospitals around the country, indeed in most top ranked hospitals, inpatient glucose control has taken its place as one of the major issues to be addressed in hospitalized patients. As part of the efforts to not only actively address inpatient hyperglycemia, but appropriately treat a growing number of diagnosed diabetic patients in our population, Roper Hospital started an Inpatient Glucose Management Team (GMT) four years ago. Championed by Bob Hosler of the Heart & Vascular Center, and initially staffed by Dr. Sarah Dolven, the service rapidly grew over the past few years to incorporate a total of two board certified Endocrinologists including Dr. Dolven and myself, a nurse practitioner, a diabetes educator, nutritionist and LPN. In 2010 the glucose management team saw 4,665 inpatient visits in consultation, a number not including diabetes education consults which are performed separately.

A large portion of the inpatient glucose management service is dedicated to protocols involving post-operative care of cardiothoracic surgery patients, in whom data strongly suggests that tight glucose control minimizes morbidities post-op. Patients receive consultations from the GMT on post-op day one based on their A1C level >6 and/or blood glucose measurements greater than 150mg/dl, which per protocol requires them to be treated with an insulin drip to restore euglycemia. In addition to the CT surgery

patients, our GMT is consulted throughout the hospital for assistance in management of patients with Type 1 diabetes, those requiring insulin pumps, severe hyperglycemia resistant to prior forms of treatment/regimens and those with recurrent hypoglycemia. We see adult patients in every part of the hospital, including med-surg, ICUs, BMT and OB.

Bridging care from inpatient to outpatient is a critical step towards ensuring that patients with chronic medical conditions such as diabetes do not fall through the cracks. The last two years has seen a significant growth in the outpatient clinic branch of the GMT, Roper Endocrinology. Initially started for the sole purpose of providing post-hospital diabetes follow up, this is now a full service endocrinology and diabetes referral clinic addressing not only diabetes but also the full scope of endocrine diseases. Over this past year, faced with rising numbers of patients with Type 2 diabetes as well as recognizing that many patients can safely return to the care of their primary physician for appropriate diabetes management, our outpatient clinic shifted its focus. Post-hospital follow-up in our clinic is arranged for patients with particularly complicated forms of diabetes or those with very poor control. The majority of our clinic patients are referrals from the medical community at large. Our clinic is conveniently located on the second floor of Roper Hospital.

As our service continues to grow and evolve with the needs of Roper Hospital and South Carolina's community of patients, several new programs will likely be on the horizon. These will include a pre-diabetes program for those diagnosed as high risk while inpatients, and a gestational diabetes clinic. Inpatient protocols are actively being revised and new, exciting programs initiated. We will continue being an integral part of the excellent care that Roper Hospital provides to its patients, and enjoy partnering with our colleagues towards that goal.





Roper St. Francis and MUSC Collaborate in Groundbreaking Clinic



Every year the Tri-county area averages 43 new spinal cord injury cases, and there are more than 1000 people in the area already living with these debilitating injuries. Often primary care providers are not accustomed or equipped to treat the complex medical needs of people with spinal cord injury. Routine procedures, like getting a Pap smear, become more complicated, and the patients often have secondary health issues such as bowel or bladder dysfunction, gynecological problems and skin irregularities that result from the spinal cord injury. To provide specialized care for these patients, Roper St. Francis Healthcare and the Medical University of South Carolina have collaborated to establish a consolidated clinic for spinal cord injury patients.

“Too often, when a person with spinal cord injury needs medical care, they find themselves in a system that is

difficult to navigate. Very few healthcare providers have access to the specialized equipment and training needed to treat the unique needs of these patients,” says Nancy Tsai, MD, the medical director of the new Center for Spinal Cord Injury (CSCI) now open at Roper Hospital.

The CSCI provides a convenient, consolidated environment to address the very specific healthcare concerns of patients who have suffered trauma to their spinal cords. The clinic has a research as well as a rehabilitative and treatment component. It does not replace the need for patients to have their own primary care physician, but supplements this care with occupational and physical therapy, wheelchair seating, and specialists who can address urological, endoscopic and GYN issues, as well as orthotic needs and skin care.

This is a first-of-its-kind medical program for South Carolina, and also a groundbreaking clinical collaboration between Roper St. Francis Healthcare and MUSC, with support also from Carolinas Rehabilitation and the state-run Spinal Cord Injury Research Fund. Spinal cord injury patients will get care through Roper Rehabilitation Hospital, and participate in research with MUSC.

- The CSCI is located on the 6th floor of Roper Hospital, in the Rehabilitation Department.
- Clinic hours are the third Friday of every month.
- To refer a patient, please call (843) 724-2837.



Medical Society of South Carolina

Founded in 1789, the Medical Society of South Carolina is the fourth oldest medical society in existence and has been influential in promoting healthcare excellence for more than two centuries. Its history is long and proud: in 1824, the Medical Society founded the Medical College of South Carolina (known today as the Medical University of South Carolina) for teaching and research, and in 1852, with a bequest from the will of Col. Thomas Roper, the Society established Roper Hospital "to treat all sick and injured people without regard to complexion, religion, or nation," and to serve as a teaching hospital for the Medical College. Today, members of the Medical Society of South Carolina remain dedicated to improving the health of our community through clinical excellence, support and participation in Roper St. Francis Healthcare and other endeavors.

The Medical Society of South Carolina is the majority owner and a founding member of the Roper St. Francis Healthcare System. The Society provides funding for state-of-the-art equipment and other capital needs. These important initiatives positively impact the quality of medical care that Roper St. Francis provides in the community.

Membership in the Society is considered an honor and is open to any physician on the active medical staff of a Roper St. Francis Healthcare facility. An application and two recommendations from Society members are required.

If you would like more information about joining the Medical Society, please call (843) 789-1798.

New Physicians

Roper St. Francis Healthcare welcomes the following board certified physicians to its active medical staff:

James Bartlett, MD	Anesthesia
Amanda Bright, MD	Internal Medicine
David Cook, MD	Emergency Medicine
William Cramer, MD	Anesthesia
Philip Doherty, MD	Hospitalist
Jonathan Gardner, MD	Anesthesia
Adam Keefer, MD	Vascular Surgery
Jamie Kuo, MD	Emergency Medicine
Steven McLees, MD	OB/GYN
R. Wayne Phillips, MD	Hospitalist
Tamika Ravenell, MD	Podiatry
Chris Rife, MD	Internal Medicine
Robert Morgan Stuart, MD	Neurosurgery
Joseph Thomas, MD	Internal Medicine
Ronald Turner, MD	Emergency Medicine



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