

# SURGERY UPDATE LEADING THE WAY

FALL 2012 • VOLUME 4, NUMBER 3



## Department of Surgery

*Dedicated to Clinical Care, Research and Education*

- Cardiothoracic Surgery
- Colorectal Surgery
- Community Surgery
- Surgical Education
- General Surgery
- Pediatric Surgery
- Surgical Oncology
- Transplant Surgery
- Trauma and Critical Care
- Vascular Surgery

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appropriateness or risks of a procedure for a given patient.

## From the Chairman

### DOUGLAS B. EVANS, MD

Donald C. Ausman Family Foundation Professor Of Surgery  
Chairman, Department Of Surgery, Medical College Of Wisconsin

The featured photographs on the cover of this issue of *Leading the Way* highlight the importance of medical student education to all of us in the Department of Surgery. Our Residency Program Director, Dr. Paula Termuhlen, is shown (photo to the left) with just a few of the current fourth-year medical student class planning to enter the surgery match. This year will boast the largest number of graduating students (18) planning a career in general surgery. Those available for a photograph are pictured left to right: Margarita Cantir, Luis Lopez, Annie Huang, Jessica Shaheen, Katelyn Levene, Josh Nelson, and Justin Dux. This renewed interest in surgery as a career is especially important at this time, when many across the country are concerned over the projected future surgeon shortage. Showcasing our specialty, being effective role models, and setting an example of how to manage work-life balance *all* are critically important in the mentoring process. This year's success in promoting surgery as a career is due to the efforts of many dedicated faculty on this campus as well as our uniquely dedicated off campus faculty spanning all of the hospital systems in Milwaukee. I would like to especially highlight the efforts of Dr. Brian Lewis (M3 Clerkship Director) and Dr. Peter Rossi (Director of the M4 Sub-Internship Program) who *lead the way* in our medical student education program and are pictured to your right. •



Dr. Brian Lewis



Dr. Peter Rossi

Please attend two special Grand Rounds presentations by speakers recently added by the Grand Rounds Committee Co-Directors, Drs. Turaga and Goldblatt:

Monica Bertagnolli, M.D., *Brigham and Women's Hospital* December 12, 2012

Nat Soper, M.D., *Northwestern University* January 23, 2013

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# Fetal Surgery: Science Fiction



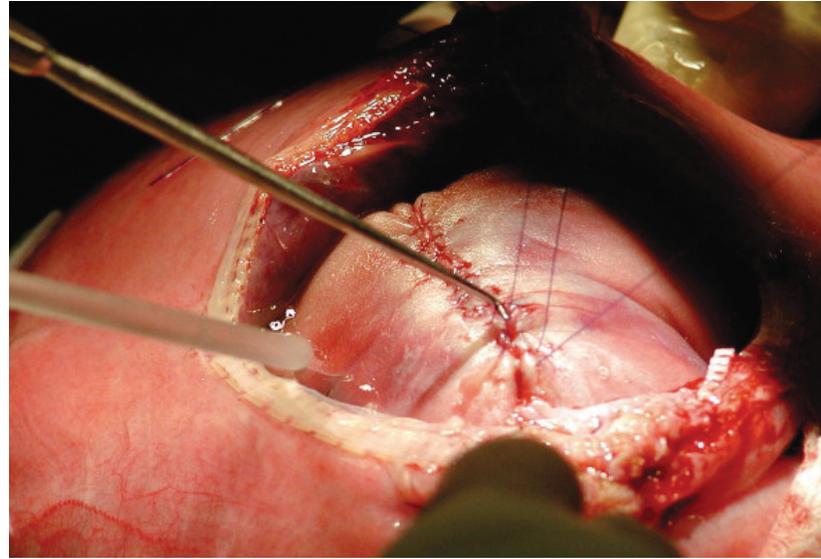
**AMY WAGNER, MD**  
Division of Pediatric Surgery

Advances in ultrasound technology have increased the ability to diagnose fetal anomalies. The presence of an anomaly that poses a life-threatening, imminent risk to the fetus was the original indication for fetal intervention. Conditions that clearly benefited from fetal intervention included congenital pulmonary airway malformation (CPAM), fetal sacrococcygeal teratoma, fetal airway obstruction due to a large neck mass or laryngeal atresia, and twin-to-twin transfusion syndrome.

Recently, fetal intervention for a non-life threatening condition has come into favor—open fetal surgery for myelomeningocele (MMC). Publication of the NIH Management of Myelomeningocele Trial (MOMS) revealed prenatal surgery for MMC reduced the need for ventriculoperitoneal shunting in patients and also improved the motor outcomes compared to patients with MMC who underwent standard postnatal repair.<sup>1</sup> Three centers participated in the MOMS trial: Vanderbilt, Children’s Hospital of Philadelphia, and University of California, San Francisco. Since the publication of the trial, numerous other centers across the country and in Europe are now offering open fetal surgery for MMC. The current approach is a maternal laparotomy, hysterotomy, delivery of the fetal back, and repair of the MMC lesion in the standard fashion by reapproximating the dura and the skin to cover the lesion.

The potential for improved outcomes in patients with MMC who undergo fetal surgery comes with significant cost: the risk of open fetal surgery to the mother and the risk of preterm birth in the fetus. Mothers who undergo open fetal surgery have a substantial risk of spontaneous membrane rupture, uterine dehiscence, pulmonary edema, chorioamnionitis, and preterm labor. Additionally, after a woman has open fetal surgery, she is unable to go through labor and will require an elective cesarean section for each subsequent pregnancy due to the risk of uterine rupture. There were also more complications associated with prematurity in the prenatal surgery group, including respiratory distress syndrome, feeding difficulties, and long-term morbidities associated with prematurity itself.

Research in more minimally invasive approaches to MMC and tissue engineering are ongoing to attempt closure without a need for a maternal laparotomy and hysterotomy. Ongoing studies utilizing microsphere and nanofibrous scaffolds with growth factors and stem cells are being completed in animal models.<sup>2-3</sup> This research provides promising options for coverage early in gestation without the need for



Open fetal surgery (Harrison: *Atlas of Fetal Surgery*, 1996)

hysterotomy and could also ideally improve the myelodysplasia associated with the defect.

Advances in minimally invasive approaches in fetal surgery for congenital diaphragmatic hernia (CDH) also continue to be investigated. At present, the role of fetal intervention for CDH is unclear. Fetal surgery is currently indicated in the most severe cases of CDH in which the liver is herniated into the chest and the amount of contralateral lung present is minimal. The current recommended fetal approach is balloon occlusion of the fetal trachea. This prevents the normal egress of pulmonary fluid which enhances the growth of fetal lungs. A randomized, prospective trial comparing fetal surgery with tracheal balloon occlusion to standard postnatal care was previously published. The study was halted early, as no differences in survival were noted between the fetal intervention and standard therapy groups. There was an unexpectedly high survival rate of neonates with CDH in the standard therapy group. Additionally, the fetal surgery group had a substantial rate of preterm rupture of membranes and preterm labor, which may have diminished the benefit in the prenatal surgery group.<sup>4</sup>

In an attempt to diminish the rate of preterm labor, advances have been made in the approach to fetal tracheal occlusion. Recent studies have utilized a smaller diameter (1.0 mm) fetoscope for fetal tracheal occlusion with detachable balloon placement percutaneously under ultrasound guidance. Studies in Europe and Brazil have shown promising results in using this minimally invasive percutaneous method in the most severely affected patients with CDH.<sup>5,6</sup> The balloon is not currently FDA

# Becomes Reality

approved, therefore this approach is only being utilized in select centers in the United States with Investigational Device Exemption.

We are fortunate to have a very talented team of perinatologists, pediatric surgeons, radiologists, neonatologists, pediatric cardiologists, and nurses working closely together at MCW as we expand the Fetal Concerns Center of Wisconsin. We are striving to become a national leader in maternal and fetal care recognized for innovative treatment with exceptional outcomes and exemplary research. •

**FOR ADDITIONAL INFORMATION** on this topic, see references, visit [mcw.edu/surgery](http://mcw.edu/surgery), or contact Dr. Wagner at 414-266-6550; [awagner@chw.org](mailto:awagner@chw.org).

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## Dr. Keith Oldham elected President of the American Pediatric Surgical Association

Keith Oldham, MD, Professor and Chief of Pediatric Surgery, is currently serving as president of the American Pediatric Surgical Association (APSA). Elected by his peers in 2011, Dr. Oldham took office at the APSA annual meeting in May 2012. He will hold the office until May 2013, then will serve one year as immediate past-president.

There is no higher honor in pediatric surgery than the privilege of this office—a testimony to the many accomplishments of Dr. Oldham to the surgical care of children throughout the world.

## Drs. Groeschl and Jeziorczak recognized for outstanding research

On Wednesday September 12, 2012, the Medical College of Wisconsin sponsored the 22nd Annual Research Day sponsored by the Office of Research. There were 29 abstract poster presentations by fellows/residents. Prizes were awarded for best faculty basic research, non-basic research, and best fellow/resident basic research and non-basic research. The awards were announced at Convocation. Dr. Ryan Groeschl was awarded the best resident/fellow non-basic research for his abstract. Dr. Paul Jeziorczak was awarded the best resident/fellow basic research. Dr. Groeschl's abstract was "Surgical Resection in Hepatocellular Carcinoma Patients with Minimal Background Fibrosis; A Strategy in the Era of Organ Shortage", and Dr. Jeziorczak's work was entitled "Receptor of Advanced Glycation End Products (RAGE) Expression and Activation in Endothelium-Derived Microparticle (EMP)-Induced Acute Lung Injury". Dr. Groeschl works with Dr. T. Clark Gambelin in Surgical Oncology, and Dr. Jeziorczak works in the lab of Dr. John Densmore in Pediatric Surgery. •



Dr. Ryan Groeschl



Dr. Paul Jeziorczak

# Ventricular Assist Devices for Advanced



**ALFRED C. NICOLOSI, MD**  
Division of Cardiothoracic Surgery

A ventricular assist device (VAD) is a blood pump that assumes the function of a failing cardiac ventricle, either right, left, or both. Today, numerous VADs are available to fulfill various needs in a complex patient population. With most VADs, a cannula connects to a heart chamber to drain blood to the pump, which pushes the blood back into a major blood vessel through another cannula. Most left ventricular assist devices (LVADs) drain blood directly from the left ventricle and pump into the ascending aorta. While most VADs require surgical procedures to implant, several devices currently available for short-term support can be inserted percutaneously without direct connection to the heart.

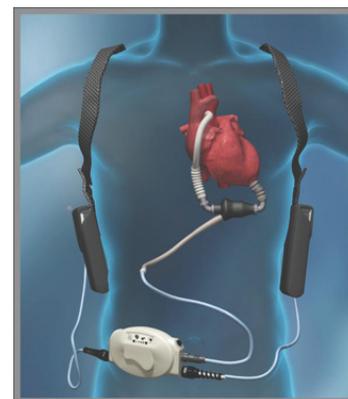
The role of VADs in the treatment of advanced heart failure continues to evolve nearly 50 years after the first device was implanted. Initially envisioned in the 1960s as a permanent replacement for the failing heart, the role of VADs evolved into a temporary support modality once heart transplantation proved feasible in the 1980s. Ventricular assist devices became commonly used in patients with acute heart failure, often after cardiac surgical procedures, until the heart recovered or until a heart transplant could be performed if the heart did not recover (as a “bridge to transplant,” or BTT). All VADs used during that time had external (“extra-corporeal”) pumps, with inflow and outflow cannulae connected to the heart through the chest wall. While effective in the short-term, they were not suitable for extended support, which had become necessary as waiting times for transplantation had increased. However, by the mid-1990s, implantable VADs with intra-corporeal pumps were in use for BTT, and these devices allowed patients to be discharged from the hospital and resume almost all normal activities. Patients participated in exercise programs and became better transplant candidates as other body systems, nutritional status, and muscle function all were restored.

As results of implantable VADs used as BTT continued to improve, the notion of using them as permanent support devices instead of heart transplantation (“destination therapy” or DT) again arose. This idea led to a landmark study, the REMATCH trial, the results of which were published in 2001.<sup>1</sup> In this randomized, prospective trial, patients with end-stage heart disease who were not candidates for transplantation due to other factors were randomized to continued optimal medical therapy or an implantable LVAD (the HeartMateVE<sup>®</sup>, a pulsatile device that was commonly used for BTT). Patient survival at both one and two years and quality of life indicators all increased significantly in the LVAD group. This trial ushered in the era of

DT, but there were still challenges using LVADs as DT, particularly related to device infection and device malfunction.

Over the last decade, continuous-flow devices, initially thought to be incompatible with long-term survival due to concerns about non-pulsatile flow, have replaced pulsatile VADs for both BTT and DT as clinical experience has demonstrated improved patient survival, fewer complications, and superior device durability.<sup>2</sup> These devices are also much smaller and quieter than pulsatile devices and thus, are better tolerated by patients. At present, an axial flow pump, the HeartMate II<sup>®</sup>, is the most commonly used LVAD in the United States, but other continuous-flow pumps currently in clinical trials will be available soon. Despite this trend toward continuous-flow LVADs, the newest generation total artificial heart offers advantages in certain patient populations, including those with poor right ventricular function that precludes support with an LVAD alone, those with non-dilated heart failure from diseases such as amyloidosis, and those in a very decompensated clinical state, in which continuous-flow LVADs are less effective.<sup>3</sup>

Strategies for the use of VADs continue to evolve.<sup>4,5</sup> As mentioned previously, LVAD therapy alone is less effective in patients with severely decompensated heart failure. Therefore, LVADs are now implanted earlier than in previous eras. In addition, they are commonly implanted in patients who have no permanent contra-indications for heart transplantation (such as active cancer) but have potentially reversible medical or social problems that preclude transplantation. In those patients, VADs are used as a “bridge to candidacy” and if the reversible problem resolves, the VAD can be used for BTT. One final point that must be made is that heart transplantation remains the gold standard for long-term cardiac replacement. Median survival after heart transplantation is approximately 12 years, and there are many 20-year survivors.<sup>6</sup> No such data exists for VAD therapy, as the current generation of devices has only been in use for about seven years. However, two-year survival with LVADs is now approaching 75%, and work is continuing to meet the challenges that remain in the field to someday realize the initial hope of having a permanent mechanical solution to the failing heart. •



HeartMate II<sup>®</sup>

**FOR ADDITIONAL INFORMATION** on this topic, see references, visit [mcw.edu/surgery](http://mcw.edu/surgery), or contact Dr. Nicolosi at 414-955-6906; [anicolos@mcw.edu](mailto:anicolos@mcw.edu).

# Heart Failure

## Department of Surgery Welcomes New Faculty



Dr. Hong

**Johnny C. Hong, MD** was recently appointed Director of Solid Organ Transplantation and assumed his duties on October 1. Dr. Hong was previously Director of the Liver Transplantation Service and the Living Donor Liver Transplant Program at the David Geffen School of Medicine of the University of California, Los Angeles. He was Associate Professor in the Division of Liver and Pancreas Transplantation within the Department of Surgery at UCLA. Dr. Hong had been at UCLA since completing his surgical and research training at the University of Texas Health Science Center at Houston.

Dr. Hong's professional career has been devoted to advancing the care of patients with end-stage liver disease through innovations in liver transplantation. His work in the study of hepatic reperfusion injury was awarded the American Association for the Study of Liver Diseases Career Development Award, and he has developed a reperfusion protectant solution that was under patent review. He served as Chair of his region's Organ Procurement and Transplantation Network/UNOS review board, and is very active in the American Association for the Study of Liver Diseases and the American Society of Transplant Surgeons. He has trained countless clinical and research fellows and oversees one of the nation's largest and most well-known liver transplant programs. He is widely published in the peer-reviewed literature and maintains a large animal research laboratory studying ways to improve graft function and treat reperfusion injury. Dr. Hong is internationally known for his expertise in all aspects of abdominal transplantation, especially adult and pediatric liver transplantation including split liver and live donor liver transplantation.

Dr. Hong joins the Medical College of Wisconsin as the Inaugural Holder of the Mark B. Adams Chair in Surgery and will have academic appointments in the Divisions of Transplantation and Surgical Oncology.

The Division of Surgical Oncology and the Department of Surgery are pleased to announce the recruitment of **Miraj Shah-Khan, MD**. Dr. Shah-Khan is a graduate of Rush Medical College, and she completed her residency in general surgery at the University of Illinois. Her residency training included two dedicated years of research at the National Institutes of Health in Bethesda, Maryland. Following residency, she obtained fellowship training in breast surgery/oncology at the Mayo Clinic in Rochester.



Dr. Shah-Khan

Dr. Shah-Khan will allow the Division of Surgical Oncology to expand the scope of the interdisciplinary breast program to include the Kraemer Cancer Center at St. Joseph's Hospital West Bend and Community Memorial Hospital. She will see patients with benign and malignant diseases of the breast at these two locations beginning September 1. •

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## 2012 Eberbach Award Winners

The Eberbach Banquet is held every year to honor our graduating residents and recognize outstanding faculty and resident educators. This year, **John Aiken, MD** (Division of Pediatric Surgery) received the Golden Cane Award in recognition as an outstanding educator. The recipient of this award is chosen by junior and senior medical students. Mark B. Adams, MD established the Golden Cane Award in 1987.

**Philip Redlich, MD, PhD** (Division of General Surgery) was awarded the Professionalism Award. This award is presented to the faculty member who best exemplifies outstanding professionalism. Dr. Redlich was chosen to receive this award by all current surgery residents. Dr. Adams established the Professionalism Award in 2005.

Established in 1986, the Arahamian Faculty Teaching Awards recognize two outstanding faculty teachers (one from the full-time academic faculty, and one from an affiliated institution). This year, the graduating chief residents selected **James Wallace, MD, PhD** and **Thomas Schneider, MD** (Columbia St. Mary's Hospital).

Congratulations to these talented and devoted educators for their many extra efforts in education and the training of our medical students and residents. •

# Appropriate Antibiotic Prescribing for Methicillin-Resistant Staphylococcus



**ANAHITA DUA, MD**  
General Surgery Resident



**JOHN A. WEIGELT, MD, DVM**  
Chief, Division of Trauma/Critical Care

The prevalence of methicillin-resistant *Staphylococcus aureus* (MRSA) has increased since the first clinical isolate was described in 1961. In 2005, an estimated 94,360 cases of invasive MRSA were documented in the US.<sup>1</sup> Initially, nearly all MRSA cases were hospital-associated (HA-MRSA), but by the 1990s, another strain of MRSA was recognized as the cause of many infections arising in the community. Unlike HA-MRSA, this community-acquired MRSA (CA-MRSA) was susceptible to non beta-lactam antibiotics and had genetically distinct isolates.<sup>1</sup> In fact, research suggests that CA-MRSA did not evolve from the HA-MRSA. This is supported by molecular typing of CA-MRSA strains and genome comparison between CA-MRSA and HA-MRSA, which indicated that novel MRSA strains integrated Staphylococcal cassette chromosome *mec* (SCC*mec*), the genomic island of unknown origin containing the antibiotic resistance gene *mecA*, into methicillin-sensitive *Staphylococcus aureus* (MSSA) independently. Resistance gene, *mecA*, is responsible for stopping  $\beta$ -lactam antibiotics from inactivating the enzymes (transpeptidases) that are critical for cell wall synthesis, thereby resulting in resistance to all penicillin-like antibiotics.<sup>2</sup> Most CA-MRSA strains share the SCC*mec* type IV and produce Panton-Valentine leukocidin (PVL), a cytotoxin that causes leukocyte destruction and tissue necrosis.<sup>3,4</sup> The predominant clone is the USA300 clone, which is widely disseminated in the U.S., Europe, and Australia, while the HA-MRSA clones include most frequently USA100 and USA200.<sup>3,5</sup> CA-MRSA rapidly became the most common cause of skin and soft tissue infection (SSTI) across the U.S. and the world.<sup>1,2,6</sup>

Complicated SSTIs range in clinical presentation from a simple abscess or cellulitis to deeper soft-tissue infections, such as pyomyositis, necrotizing fasciitis, and mediastinitis as a complication of retropharyngeal abscess.

In a double-blind, placebo-controlled study, there was a 90.5% cure rate observed in the placebo plus surgical drainage arm vs. a 84.1% cure rate observed in the antibiotic arm. The authors concluded that antibiotics may be unnecessary following surgical drainage of uncomplicated skin and soft-tissue abscesses.<sup>7</sup> The latest British Society of Antimicrobial Chemotherapy (BSAC) guidelines advise against administering systemic antibiotics to patients with minor SSTIs or small abscesses <5 cm in size that can be surgically drained.<sup>8</sup> However, antibiotic therapy is recommended for abscesses associated with severe or extensive disease, rapid progression in the presence of associated cellulitis, signs and symptoms of systemic illness, associated comorbidities or immunosuppression, extremes of age, difficult to drain areas, such as the face or genitalia, associated septic phlebitis, or lack of response to incision and drainage alone.<sup>7,8</sup>

Detailed knowledge of the susceptibility to antimicrobial agents is necessary to facilitate the development of effective strategies to combat the growing problem of antibiotic resistance. Antimicrobial resistance is genetically based and resistance is mediated by the acquisition of extra-chromosomal genetic elements containing resistance genes.<sup>7</sup> MRSA is defined by its ability to thrive in the presence of *penicillin*-like antibiotics. Both CA-MRSA and HA-MRSA are resistant to traditional anti-Staphylococcal *beta-lactam antibiotics* such as *cephalexin*, but CA-MRSA has a greater spectrum of antimicrobial susceptibility including *sulfa drugs* (*co-trimoxazole*/trimethoprim-sulfamethoxazole [Bactrim]), *tetracycline* (*doxycycline* and *minocycline*), and *clindamycin*. HA-MRSA is resistant even to these antibiotics and often is only susceptible to vancomycin. Newer drugs, such as *linezolid* (*oxazolidinones* class) and *daptomycin*, are effective against both CA-MRSA and HA-MRSA.<sup>7</sup> The decision of when to begin systemic antibiotic treatment can be difficult, but when coverage of CA-MRSA in outpatients or inpatients is necessary for SSTI, oral antibiotic options include the following: clindamycin (A-II), TMP-SMX (A-II), a tetracycline (doxycycline or minocycline) (A-II), and linezolid (A-II). Although intravenous vancomycin remains one of the most commonly prescribed antibiotics for MRSA, it is not recommended in either the US or European guidelines. The current literature appears to support tetracycline as the most efficacious and cost-effective oral treatment option.<sup>7,8</sup> However, prescribing patterns often do not reflect the published data regarding antibiotic treatment of CA-MRSA infections. Intravenous vancomycin is commonly used for documented CA-MRSA infections, and patients are even admitted to the hospital to complete courses of IV vancomycin, which increases patient care costs and exposes patients to the morbidity associated with a hospital stay. Studies regarding the recurrence rates of CA-MRSA vary by patient population, but are reported around 15%

# Patients with Community-Acquired Aureus

	CLINDAMYCIN	TETRACYCLINE	VANCOMYCIN
CA-MRSA	Sensitive	Sensitive	Sensitive
HA-MRSA	Resistant	Resistant	Sensitive

**Table 1:** Definition of CA-MRSA and HA-MRSA based on antibiotic sensitivities

with rates as high as 30% in those at high risk.<sup>1</sup> Currently, a randomized controlled clinical trial to prevent recurrent CA-MRSA infection (PRIMO) is ongoing in California.<sup>9</sup> There are scant data describing the relationship between antibiotic prescribing and recurrence rates.

The aim of a study we recently completed was to examine drug choices and subsequent recurrence rates for CA-MRSA SSTI infections. Specifically, we sought to determine if recurrence rates differed significantly when administering IV vancomycin versus alternative oral antibiotic regimens (Table 1).

Inpatient and outpatient data of patients diagnosed with MRSA at the Medical College of Wisconsin (MCW) from January 1, 2008 to December 31, 2009 were extracted from the EPIC electronic records. Patients who were diagnosed with MRSA based on nares colonization, urine specimen, or pneumonia were excluded. Patients with soft tissue infection were included. Data points included demographics, presentation location, MRSA classification, antibiotic choice, and recurrence. *Recurrence* was defined as a positive MRSA culture after a documented negative culture following initial antibiotic treatment. Patients were followed up for a three-year period.

Statistical comparison of recurrences was done with chi-square testing. This study was approved by the MCW Institutional Review Board.

	EMERGENCY DEPT	OUTPATIENTS	INPATIENTS
2008	57%	24%	19%
2009	24%	47%	29%

**Table 2:** Breakdown of patient presentation in 2008 and 2009

## Results

With a total of 746 patients (433 in 2009 and 313 in 2008), CA-MRSA comprised 70% (220) in 2008 and 73% (313) in 2009. The location for patient presentation changed from 2008 to 2009, with the majority of patients presenting to the emergency department in 2008, and the majority presenting as outpatients in 2009 (Table 2). Antibiotic choices are listed in Table 3. In total, 176 patients recurred (2008: 82, 2009: 94) over the three-year follow up period. Vancomycin had a recurrence rate of 16% in 2008 and 21% in 2009; recurrence rates for the other drugs ranged from 9–47% in 2008 and 9–61% in 2009. There was no significant difference between recurrence rates of vancomycin when compared to other antibiotics.

## Comment

The prevalence of CA-MRSA has led to a dramatic increase in emergency department visits and hospital admissions for cSSTIs. Most patients with simple SSTIs should not be hospitalized. Per the Infectious Disease Society of America (IDSA), hospitalization should be considered in patients with complicated SSTI, defined as those with deeper soft-tissue infections, surgical/traumatic wound infection, major abscesses, cellulitis, and infected burns or ulcers.<sup>7</sup>

CA-MRSA was the most dominant organism isolated from 59% of patients presenting to emergency departments in the US.<sup>1</sup> Cutaneous abscesses smaller than 0.5 cm mainly are treated with incision and drainage alone. Numerous studies display high cure rates (85–90%) with simple incision and drainage, but two retrospective studies suggest improved cure rates if an effective antibiotic is used and patient selection is employed.<sup>7,8</sup> According to the IDSA guidelines, oral antibiotics can be used as empirical therapy for CA-MRSA.<sup>7</sup> Acceptable antibiotics include: trimethoprim/sulfamethoxazole (TMP-SMX), doxycycline (or minocycline), clindamycin, and linezolid. Clindamycin is effective in children with CA-MRSA SSTI. Linezolid is FDA-approved for SSTI, but is not superior to less expensive alternatives. A patient with a suspected CA-MRSA infection should receive oral antibiotics active against CA-MRSA. Cultures are recommended to guide further therapy. Vancomycin has a limited role for treatment of CA-MRSA infections.<sup>7</sup>

At present, guidelines do not exist in the form of care pathways for these patients at MCW and surrounding hospitals. Therefore, treatment decisions regarding antibiotics are left solely to the judgement of the practitioner. This leads to substantial variation in the care of these patients, ranging from no antibiotic treatment to hospital admission for IV vancomycin. Based on our data, the most commonly prescribed antibiotic for inpatients at MCW was IV vancomycin. Patients presenting to the emergency department received TMX most frequently, followed by doxycycline. Outpatients received TMX most commonly, followed by clindamycin.

Intravenous vancomycin was prescribed to almost a quarter of patients in both 2008 and 2009 in our sample population, even though more than 70% of our patients had CA-MRSA and were sensitive to other antibiotic choices. These patients may have been admitted unnecessarily to receive IV vancomycin, when an oral antibiotic could have been just as effective. Some may have been discharged home with unnecessary devices such as PICC lines or home nursing care to administer IV vancomycin. Our data concluded that there was no statistically significant difference between recurrence rates in patients treated with IV vancomycin when compared to those treated with other antibiotic regimens.

	CLINDAMYCIN	TMX	DOXYCYCLINE	VANCOMYCIN	CIPROFLOXACIN	NO TREATMENT	OTHER
2008	15%	11%	20%	24%	8%	8%	14%
2009	13%	20%	25%	20%	7%	3%	12%

**Table 3:** Antibiotic usage in 2008 and 2009

Our recommendation is that in Wisconsin, specifically the Milwaukee area, oral doxycycline be considered as the first-choice antibiotic, given that it had the lowest recurrence rate in our patient population. These recommendations stand regardless of whether the patient is hospitalized or treated as an outpatient. If the patient can tolerate oral intake, oral antibiotics should be utilized. If a patient requires IV antibiotics, clindamycin or bactrim would both be viable options for CA-MRSA. Creation of a specific MRSA protocol considering regional sensitivities and overall treatment recommendation by the IDSA would be prudent given the high volume of CA-MRSA treated in Wisconsin.

**Conclusions**

Based on our research, we recommend the following steps in antibiotic treatment of CA-MRSA SSTIs in southeastern Wisconsin:

- Simple abscesses require drainage and no antibiotics. cSSTI requiring antibiotics will have signs and symptoms of systemic illness or have clinically important co-morbidities, placing them at risk for progressive infection.
- Most CA-MRSA infections can be treated with oral antibiotics, including trimethoprim/sulfasoxazole, doxycycline, or clindamycin. Doxycycline is effective and can be given once or twice daily. Vancomycin is not an appropriate antibiotic choice for CA-MRSA.
- Hospitalization with intravenous antibiotics is appropriate for patients with cSSTI that involve fascia or have necrosis of tissue requiring debridement.
- A treatment pathway for CA-MRSA may improve our management of these patients and conserve healthcare resources. We are currently working on such a pathway for our institution. •

**FOR ADDITIONAL INFORMATION** on this topic, see references, visit [mcw.edu/surgery](http://mcw.edu/surgery), or contact Dr. Weigelt at 414-805-8636, [jweigelt@mcw.edu](mailto:jweigelt@mcw.edu).

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# A Review of Syndromes and Genetics Associated with Hirschsprung Disease



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Hirschsprung disease (HD), characterized by the absence of enteric ganglia along a variable length of intestine, is the main genetic cause of functional intestinal obstruction. The prevalence of HD is approximately 1 in 5,000 live births with a male to female ratio of 4:1. It occurs within the rectum, often including various lengths of proximal colon, which correlates with illness severity. The length of affected colon is variable; it can impact the rectosigmoid colon (75% of patients), a longer segment above the sigmoid (17%), or the entire colon and variable lengths of the small intestine (8%). The first clinical indication of HD is often failure to pass meconium within 24 hours of birth.<sup>1</sup>

Suction rectal biopsy remains the gold standard for confirming the diagnosis, demonstrating increased acetyl cholinesterase activity on sampled tissue and/or the absence of enteric glia in the myenteric plexi and the resultant nerve terminal hypertrophy.<sup>2</sup> Acute complications of this disease include inability to feed, vomiting, and enterocolitis. Today, the majority of patients are diagnosed within the neonatal period. However, children and adults have been diagnosed with HD after years of chronic constipation. Treatment of HD remains surgical. Although there are a variety of surgical approaches, the goal of operative correction is to remove or effectively bypass the distal segment of abnormal bowel. Despite the type of surgical repair, long-term complications, including pouchitis, chronic constipation, and enterocolitis can persist.

Hirschsprung disease results from the failure of craniocaudal migration of the vagal neural crest cells to form the enteric nervous system.<sup>3</sup> Patients with long segment disease are more likely to have “familial” HD. In these patients, HD may be inherited through an autosomal dominant trait with incomplete penetrance. The neural crest

cell is a transient and multipotent embryonic structure that gives rise to neuronal, endocrine and paraendocrine, craniofacial, conotruncal heart, and pigmentary tissues.<sup>4</sup> Syndromes and tumors involving the neural crest cells are referred to as neurocristopathies, and HD is one of the more common of these phenomena.<sup>2</sup>

## Chromosomal Abnormalities and Syndromes associated with Hirschsprung Disease

Hirschsprung disease occurs as an isolated trait in 70% of patients. Familial cases of HD account for approximately 10–20% of total cases.<sup>1</sup> Genetic testing presents a challenge, as HD can be due to incomplete penetrance and variable expressivity resulting from the acquisition of many different modes of genetic mutation (*de novo*, inherited, or a combination of multiple inherited mutations). Known systemic (global) chromosomal abnormalities are present in 12% of children with HD. Trisomy 21 occurs in conjunction with 2–10% of HD total cases.<sup>5</sup> Anomalies that are found in association with HD are identified in 39% of familial cases vs. 21% of sporadic cases of HD, suggesting a component of mendelian inheritance. Isolated congenital anomalies commonly associated with HD within this population vary from 3 to 8%, the most frequent being in the gastrointestinal tract (8%), central nervous system (7%), and the genito-urinary tract (6%). Other associated systems include the musculoskeletal system (5%), cardiovascular systems (5%), craniofacial and eye abnormalities (3%), and less frequently, the skin and integumentary system (ectodermal dysplasia) and syndromes related to cholesterol and fat metabolism (<1%).<sup>6</sup> Many gene mutations have been linked to HD (Table 1). Syndromes caused by gene mutations associated with HD also have been described (Table 2).

**HIRSCHSPRUNG DISEASE** CONTINUED ON PAGE 10 >>

GENE	LOCUS	FUNCTION	FREQUENCY IN HUMANS	INHERITANCE
RET	10q11.2	Tyrosin kinase receptor, co-receptor for GDNF	50% of familial cases, 7–35% sporadic cases	Dominant, incomplete penetrance
GDNF	5p13.1	Glial cell derived neurotrophic factor, ligand for RE GFR 1	Rare, sporadic	Non-mendelian
EDNRB	13q22	Endothelin-B-receptor	3–7%	In non-syndromic HD dominant, <i>de novo</i> 80%
Pax-3	2q35	Paired box gene 3		
ZHX1B/SIP1	2q22	Zinc finger homeo box 1B transcriptional repressor of Smad	~100 cases, <1%	Dominant, <i>de novo</i>
SOX-10	22q13	Sry/high mobility group (HMG) box transcription factor	~17 cases, <1%	Dominant, <i>de novo</i> 75%
PHOX2B	4p12	Paired box gene 3, transcription factor	~15 cases, <1%	Dominant, <i>de novo</i> 90%

**TABLE 1: Genes associated with Hirschsprung Disease**

**Genetic Counseling and Recurrence Risks**

Identification of the genetic cause of HD may aid in establishing a mode of inheritance for the purposes of genetic counseling.<sup>7</sup> A physical examination by a trained *dysmorphologist* (a specialist trained to recognize congenital malformations, especially those affecting the anatomy of the individual) may be performed to establish if a *monogenic* (single inherited gene) syndrome exists in a patient with HD. A detailed family history should be performed in every patient presenting with HD, focusing on infants with a history of intestinal obstruction and adults with chronic constipation. Complete clinical evaluation and family history should be obtained to provide clues to the nature of the genetic defect. If genetic testing is considered, a detailed, four-generation pedigree, including endocrine and nonendocrine findings is recommended.<sup>8</sup> If a patient has multiple existing anomalies and a monogenic cause appears unlikely, a chromosome analysis of blood that examines at least 20 metaphases at the 550-band level or greater should be performed. If monogenic nonsyndromic HD is confirmed or likely, molecular genetic testing of the RET gene may be considered.<sup>5,7</sup>

Overall, genetic data has limited practical value for patients with HD, as the long-term prognosis of patients with syndromes is highly dependent on the severity of the associated anomalies (Table 2).<sup>5</sup> Given the poor correlation between genotype and phenotype, the benefit of routine mutation analysis for HD patients appears low. However, many HD cases are associated with other congenital anomalies, and it is incumbent on the surgeon to coordinate efforts to diagnose a possible syndrome and obtain a genetic consultation. When appropriate, treatment/management of associated anomalies also should be coordinated. The cost for genetic testing ranges between \$310 for a familial mutation to \$7,700 for other sequencing.<sup>8</sup> Mutational analysis for many of the genes listed is not easily obtained and does not affect the clinical management of HD, except in rare contexts. Exceptions are testing for familial medullary thyroid cancer/multiple endocrine neoplasia type 2A mutations of the RET gene in patients with sporadic HD and PHOX2B mutational analysis in patients with Congenital

Syndrome	Genes Associated	Gene Product	Characteristics
MEN2A	RET	Tyrosine kinase receptor	Medullary thyroid cancer, pheochromocytoma, hyperparathyroidism
Bardet-Biedl syndrome	MKKS/BBS6 12 loci, 14 genes	Unknown	Ciliary function abnormalities—pigmentary retinopathy, obesity, hypogenitalism, renal, mental retardation, polydactyly
Cartilage Hair Hypoplasia Syndrome	RMRP	Endoribonuclease RNase MRP complex	Short limb dwarfism, sparse hair, macrocytic anemia
Congenital Central Hypoventilation Syndrome (Haddad)	PHOX2B	Paired-like homeobox 2b, transcription factor	Congenital central hypoventilation and risk of neuroblastoma
Familial Dysautonomia (Riley-Day)	IKBKAP	Scaffold protein and a regulator for 3 different kinases involved in proinflammatory signaling	Autonomic nervous system anomalies
Fryns	unknown		Diaphragmatic defects, pulmonary hypoplasia, coarse facies, limb anomalies
Goldenberg-Shprintzen	KIAA1279	Kinesin family member 1 binding protein	Mental retardation, microcephaly, polymicrogyria, facial features, cleft palate, coloboma of iris
Intestinal Neuronal Dysplasia	unknown		Late onset bowel obstruction with neuronal hyperplasia
Mowat-Wilson	SIP1/ZFXH1B	Smad-interacting protein	Epilepsy, severe mental retardation, microcephaly
Smith Lemli Opitz	DHCR7	Enzyme 7-dehydrocholesterol reductase	Growth retardation, microcephaly, dysmorphic facies, severe mental retardation, syndactyly between 2 <sup>nd</sup> and 3 <sup>rd</sup> toes, hypospadias
Wardenburg Shah	EDNRB	Endothelin –B-receptor	Pigmentary anomalies and sensorineural defect

**TABLE 2: Syndromes associated with Hirschsprung Disease**

Central Hypoventilation Syndrome (CCHS). Parents of a patient with molecularly proven CCHS must be tested for accurate genetic counseling, as approximately 10% carry a somatic mosaic, and some parents may develop late onset CCHS.<sup>9</sup>

Genetic counseling for parents, siblings, and offspring of individuals with HD is difficult due to incomplete penetrance and variable expressivity of RET mutations. Prenatal testing is possible at 15–18 weeks gestation via amniocentesis or chorionic villus sampling (CVS) at 10 weeks. The utility of prenatal testing remains low due to incomplete penetrance, and variable expressivity of RET mutations in the fetus are unpredictable.<sup>7</sup>

In probands with nonsyndromic HD without a clear etiology, HD is considered to be a polygenic disorder with incomplete penetrance, and variable expressivity.<sup>7</sup> The risk of the malformation is determined by mutations of one of many HD-susceptibility genes, or more often, coincident alterations of multiple genetic loci. Thus, the products of many of these genes influence critical cellular events during embryogenesis of the enteric nervous system.<sup>10</sup> This complexity makes it difficult to counsel individual patients or families.

Different mutations within the same gene can be associated with different risks, ages of onset, and associated findings. Within the RET gene, genotype/phenotype correlations vary widely. For example, a mutation in exon 16, codon 918 has been correlated with onset of MTC as early as

nine weeks, with a phenotype consistent with MEN2B.<sup>8,11</sup> The penetrance of HD in MEN-2A/FMTC is estimated to be 1–6%.<sup>12</sup> Given the early age and aggressive nature of MTC and the beneficial role of prophylactic thyroidectomy, one could argue that screening for MEN2 is warranted in all children with a diagnosis of HD. RET gene molecular testing should be offered to probands of any MEN2 subtype and to all at-risk kindreds in whom a germline RET mutation has been identified in an affected family member. In combination with MEN2A/HD, familial RET gene testing, tumor screening, and prophylactic thyroidectomy are indicated as in MEN2A.<sup>13</sup> Routine RET gene testing in familial or sporadic HD is not recommended outside of a genetic counseling consultation.

Surgeons have recognized that patients with HD behave differently after pull-through operations despite the removal of aganglionic bowel. This may be due to different phenotypic expressions of a genetically based disorder. In the future, improved and cost-effective molecular testing will help elucidate genotype/phenotype correlates as well as improved understanding of HD genetics. A *biobank* is a repository of human, biological material that contains traces of RNA/DNA that would allow for genetic analysis. Biobanking becomes an important issue in genetic syndromes and associations, as it is likely that testing and understanding of genes, mutations, and disease will improve in the future. Current limiting issues include cost, safety, storage space (commercial vs. private), maintenance, availability for future use, and lengthy consent forms. •

**FOR ADDITIONAL INFORMATION** on Hirschsprung disease, see references, visit [mcw.edu/surgery](http://mcw.edu/surgery), or contact Dr. Calkins at 414-266-6558; [ccalkins@mcw.edu](mailto:ccalkins@mcw.edu).

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# Role of Psychology in Surgery



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It is well established that psychosocial variables impact patient health outcomes (Kiecolt-Glaser, 2002). For example, higher levels of pre-surgical anxiety and depression are associated with higher post-surgical pain (Trief, 2006; Block, 1996), while increased levels of social support are associated with shorter hospital stays and greater compliance (Kulik & Mahler, 1993).

Given the significance of psychosocial variables to health outcomes, health psychologists play an increasingly important role within surgical departments nationwide. As part of the patient care team, health psychologists assess and evaluate mental health status prior to surgery, and provide psychological treatment and behavioral interventions before and after major medical procedures. Health psychologists consult with the medical team regarding treatment recommendations and implementation, and work with patients to aid favorable adjustment and outcomes to chronic disease. The service areas of transplant, bariatric surgery, plastic surgery, breast cancer and trauma are especially reliant on the expertise of health psychologists both before and after surgical procedures.

## **Pre-Operative Psychological Services**

Today, more insurance companies are requesting, if not requiring, pre-operative psychological/psychiatric evaluations prior to approving many elective surgeries. Bariatric, transplant, and ventricular assist device surgeries, as well as prophylactic mastectomies are such examples. The psychological evaluation often includes a clinical interview that addresses patient history, including psychiatric, medical, and substance abuse history. Areas including ability to fully understand the procedure and the pre- and post-operative treatment protocol and history of compliance/adherence concerns are identified. Some pre-operative evaluations

include the use of psychometric testing, which aims to screen for substance use, subtle cognitive difficulties, depression, and anxiety. The use of these assessments focuses patient education, facilitates appropriate referrals, and guides both medical and psychological treatment. Once identified during the evaluation, patients can be treated for these issues, leading to increased patient satisfaction and improved outcomes.

Psychologists facilitate coping with disease or injury and other co-occurring life-stressors and support resiliency for patients and families. Surgical patients see psychologists for a variety of reasons that may include: learning stress coping strategies, problem-solving life barriers, expanding social support, quitting smoking, assessing and managing drinking or the use of other substances, losing weight, overcoming health-related anxiety, improving sleep, coping with physical pain, and learning how to interact more effectively with family or medical providers. Psychologists work with the patient and medical team to provide collaborative and problem-focused treatment, with interventions that are contemporary and scientifically evidence-based.

## **Post-Operative Psychological Services**

Poor post-operative psychological health is an adverse outcome that affects quality of life and also has implications for increased healthcare utilization and poorer physical health outcomes. Alterations in mood leading to anxiety and depression are the most common psychological disorders following surgery. Psychological factors vary depending upon the acute or chronic nature of the medical condition that necessitates surgical intervention. Post-operative psychological services can assist in decreasing psychological distress with the aim of improving quality of life. Inpatient consultation and brief psychotherapy, along with longer term outpatient psychotherapy are health psychology options as patients adjust to their medical conditions and recovery after surgery.

## **Trauma and Acute Care**

The unexpected nature of trauma and acute illness can result in a tremendous loss of resources, and ultimately, a loss of control for patients, leading some to experience psychological distress. Individuals become at risk for psychological distress after trauma when one perceives their life to be threatened during the potentially traumatic event, and when they have a strong emotional reaction that produces a fear-conditioned response (when sympathetic nervous system arousal becomes paired with stimuli during the trauma), leading to anxiety disorders. After trauma and acute illness, one is also at risk for depression, particularly when one is unable to return to life as before or has to make changes that are perceived to be incomprehensible (e.g., learning to adjust to life with an ostomy appliance). Inpatient psychological consultation can be utilized when patients present with high levels of distress (e.g., excessive worries, nightmares, failure to thrive) following surgery that interfere with engagement in recovery.



Consultation services aim to: (1) evaluate the psychological needs of the patient to formulate a treatment plan if warranted; and (2) develop a conceptualization of the patient's psychological distress that can be used to provide recommendations to the surgical team to improve outcomes. In hospital consultation involves evaluating a patient's current psychological symptoms, psychiatric history (including history of psychotropic medications and psychological intervention), social history, substance use history, and cognitive status. As mentioned above, the initial outcome of consultation provides a better understanding of the patient's biopsychosocial profile that can guide recommendations. For some patients exhibiting distress but not at severe levels, psychoeducation is conducted regarding trajectories of functioning, warning signs of increased distress, and contact information for outpatient services should distress increase or continue. For patients whose symptom presentations are more severe, brief psychotherapy can begin in the hospital. For example, return to bowel function is a post-operative milestone used to transition towards the discharge process. In the following case, patient X is exhibiting a marked increase in anxiety when informed that food intake can begin, even resulting in nausea and vomiting at the sight of food, creating an obvious barrier to recovery and discharge. Psychological consultation revealed that the patient had a specific food phobia. Behavioral changes were made to decrease the patient's exposure to food. Recommendations were made to the team regarding how to enlist the patient in feeling a sense of control over his hospital environment, decreasing anxiety, and intensive exposure therapy was conducted with the patient while consuming food so that the patient was able to achieve return to bowel function, and ultimately, discharge.

Outpatient psychological services may be warranted following surgical intervention depending upon premorbid psychological distress, impairment due to functional limitations, and the intensity of post-operative psychological distress. An advantage of health psychologists being involved on a surgical team is the coordination of care that can occur when both surgical and psychological follow-up are needed. Cognitive behavioral intervention is the primary modality used in outpatient services to treat

individuals who continue to have adjustment reactions to trauma and acute illness.

### **Chronic Medical Conditions and Postoperative Care**

Stress and coping theory was developed as a way to understand the processes that facilitate or interfere with one's ability to cope with a stressor. Broadly speaking, when an individual is living with a chronic illness (e.g., cystic fibrosis, chronic liver disease, breast cancer) one develops illness appraisals regarding their own perception of the disease, which elicits coping mechanisms. While some individuals do not report psychological distress when the initial diagnosis is made, it may not be until years later that they may start to show signs of psychological distress. Based on stress and coping theory, this occurs when an individual perceives that the chronic illness and its consequences exceed one's ability to cope. For example, while someone may have lived with and adjusted well to chronic liver disease, the development of cirrhosis and need to be listed for a liver transplant may be the "tipping point" that exceeds coping ability. After surgical intervention such as a liver transplant, the individual may begin to exhibit psychological distress, which may surprise providers when the previous perception was that the patient was coping well. While psychological distress following medical procedures is not pathological, when that distress interferes with one's ability to follow a medical regimen, engage in physical/occupational therapy, and ability to participate in interpersonal relationships, consultation and intervention may be needed.

It is important to note that while psychological distress following emergent surgical interventions is by no means rare, the majority of patients do relatively well following acute injury/illness and do not require psychological care. •

**FOR ADDITIONAL INFORMATION** on the Psychology Services offered in the Department of Surgery at MCW, or to refer a patient, please contact Dr. deRoon-Cassini at 414-805-8624, [tcassini@mcw.edu](mailto:tcassini@mcw.edu); Dr. Trost at 414-955-6932, [strost@mcw.edu](mailto:strost@mcw.edu); or Dr. Anderson at 414-955-6932, [rsanders@mcw.edu](mailto:rsanders@mcw.edu).

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**A Disease-specific Pilot Program for Outpatient EPIC Referrals**

The Medical College of Wisconsin Department of Surgery has initiated a pilot program for disease-specific, outpatient EPIC referrals for those programs previously placed via either the 'General Surgery' and/or the 'Clinical Cancer Center' referrals:

**Bariatric/Minimally Invasive Surgery (RFSUC.002)**

Bariatric Surgery, foregut surgery (achalasia, hiatal hernia, reflux surgery)

**Breast Cancer Surgery (RFCCC.003)**

For benign breast conditions, use the Breast Care Referral, Undiagnosed

**Colorectal Surgery (RFSUC.003)**

Anorectal disease, colorectal cancers, benign colorectal disease, inflammatory bowel disease

**Condon Hernia Institute (RFSUC.005)**

All abdominal wall defects/hernias including ventral, recurrent, incisional, inguinal, femoral

**Endocrine Surgery (RFSUC.001)**

Thyroid cancer, benign thyroid disease, parathyroid disease, adrenal tumors, carcinoid tumors, carcinoid disease, inherited endocrine tumors

**General Surgery (RFSUC.000)**

Abdominal pain, abdominal mass, gallbladder disease, soft tissue masses/nodules, feeding tubes

**Hepatobiliary Surgery (RFSUC.004)**

Liver tumors (benign and malignant), gallbladder disease, biliary tree disorders, bile duct cancers

**Pancreatic Surgery (RFSUC.006)**

Pancreatic cancer, benign pancreatic diseases (cysts, pancreatitis), pancreatic neuroendocrine tumors

**Surgical Oncology (RFCCC.002)**

Melanoma, retroperitoneal sarcoma, neuroendocrine tumors, carcinoid tumors, carcinoid disease, carcinomatosis, hyperthermic chemoperfusion therapy (HIPEC)

**For urgent/emergent issues requiring same-day attention, please call the Acute Care Surgery service via the Froedtert Hospital operator (414-805-3000).**

# In Memoriam

## **William J. (Bill) Schulte, M.D.**

November 6, 1928–June 19, 2012



**B**ill received his medical degree in 1956 from The Ohio State University School of Medicine and remained at Ohio State for his internship (serving on Dr. Zollinger's and Dr. Ellison's services). After serving two years as a captain in the U.S. Army Medical Corps, he followed Dr. Ellison to Milwaukee to be one of the first Ellison residents at Milwaukee County General Hospital (MCGH). Bill served an additional year as Chief Administrative Resident from 1963 to 1964 during

our surgical program's evolution into the "Marquette Integrated Surgical Residency Program", incorporating the Wood VA Hospital and Children's Hospital residency programs. Bill rose in academic rank to Professor in 1977. His motility laboratory at the VA and collaborative efforts with Dr. Robert Condon were responsible for numerous studies of national prominence. He was a leader of the early bariatric surgery program at MCGH and Froedert Hospitals. He served as Chief of Surgery at the VA Medical Center for two decades. An active member of numerous scientific and professional societies, he was elected President of the Association of VA Surgeons and served as President of the Wisconsin Surgical Society. Bill's passing marks the end of an era as one of Dr. Ellison's first residents, and his dedicated tenure of more than 40 years of active service to our department's research, educational, and clinical programs is a legacy matched by few in our institution.

## **Paul S. Fox, M.D.**

May 12, 1942–June 29, 2012



**P**aul received his medical degree in 1968 from Marquette University School of Medicine. Following a rotating internship at the University of Chicago, he returned to Milwaukee to complete his general surgery residency. In 1973, Paul was recruited to our full-time faculty by Dr. Myron Kauffman as an early member of the transplant team and participated in the earliest kidney transplants in Wisconsin. He served as a Major in the U.S. Air Force from 1974 to 1976. He then returned to private practice in Waukesha, and with Dr.

William Davies (GS '71), founded the Waukesha Surgical Specialists. Paul remained on our clinical faculty as an important contributor and built Waukesha Hospital as a most important teaching affiliate for medical students and surgical residents. He was our only surgical resident to have presented a paper at the most prestigious American Surgical Association. He was Chief of Staff at Waukesha Memorial Hospital and served six years as ACS Governor-at-Large for the State of Wisconsin. Paul was selected Teacher of the Year several times by our medical students, and was also awarded the prestigious Marvin Wagner Clinical Preceptor Award from MCW in recognition of excellence in medical education. Two of his sons are MCW alumni – Chris is a general surgeon and Paul F., an interventional radiologist – both practicing in Waukesha. Paul made a difference in so many lives and will be missed by his many patients, former students, and colleagues. •

# Building a Partnership

by Meg M. Bilicki, Director of Development for the Department of Surgery

**T**he Medical College of Wisconsin's Department of Surgery is grateful to individuals, businesses, and community organizations sponsoring fundraising events that benefit innovative medical research. With their help, we are moving research from the laboratory bench to the patient's bedside, translating scientific advances into longer, healthier lives for patients.

In partnership with the Colon Cancer Coalition, the Division of Colorectal Surgery, utilizing a multitude of volunteers, hosted the first annual Get Your Rear in Gear Run/Walk event in 2011. More than 700 people participated, raising nearly \$13,000 to support colon cancer research and awareness. "The Get Your Rear in Gear Run/Walk provides valuable seed funding for promising investigations aimed at saving lives and educating the community on the importance of screening, prevention and early detection," said Kirk A. Ludwig, MD, the Vernon O. Underwood Professor and Chief of Colorectal Surgery. This year's event is planned for Saturday, October 13 at Hart Park in Wauwatosa, Wisconsin.

Grateful patient Sebastian Raclaw and his family created the Sebastian Raclaw Fund for Abdominal Cancer which supports abdominal cancer research in the Division of Surgical Oncology. Receiving the funding is Kiran K. Turaga, MD, MPH, Assistant Professor of Surgical Oncology. Dr. Turaga assesses abdominal cancer outcomes to develop more effective treatment strategies. "Clinical research leads to improved survival rates and improved quality of life for patients with peritoneal surface malignancies," Dr. Turaga said. "I am extremely appreciative of the support of the

Raclaw Fund, which is advancing our research and enhancing the work of the Regional Cancer Therapy Program." To benefit this fund, the Milwaukee Police Supervisors' Organization hosted a golf event with more than 140 participants on September 26 at Scenic View Country Club in Slinger, Wisconsin. Additionally, the Milwaukee Police Endurance Club hosted a 5K run and 1-mile Skcarecrow Shuffle on Sept. 29 at State Fair Park, in West Allis, Wisconsin, with more than 500 runners and walkers. For more information on the Sebastian Raclaw Fund for Abdominal Cancer, please visit [cancer-stopresisting.com](http://cancer-stopresisting.com).

The We Care Fund committee plays a critical role in raising private funds for research and increasing awareness of cardiovascular disease, organ transplantation, trauma, and cancer for the Department of Surgery. The goal is to accelerate the development of advanced, life-saving solutions by engaging the local community to help provide the best health care to Wisconsin residents.

Besides helping to raise much needed funds for research, local events create awareness and visibility within the community and provide information on treatment options and prevention. Events have the power to inspire patients and families with the knowledge that so many people support them.

To find out how your organization can partner with the Medical College of Wisconsin, or if you would like more information on how to participate in an upcoming event to benefit patients of tomorrow, please contact Meg Bilicki, Director of Development, at (414) 805-5731 or [mbilicki@mcw.edu](mailto:mbilicki@mcw.edu). •



Department of Surgery  
9200 West Wisconsin Avenue  
Milwaukee, WI 53226

## MARK YOUR CALENDARS

### Upcoming Events

#### **October 16, 2012: 26<sup>th</sup> Annual C. Morrison Schroeder Lecturer—Timothy C. Flynn, MD**

The Department of Surgery is honored to welcome Timothy C. Flynn, MD, as the 26<sup>th</sup> Annual C. Morrison Schroeder lecturer on Tuesday, October 16, 2012. Dr. Flynn is the Chief Medical Officer at the University of Florida College of Medicine.

#### **October 27, 2012: Primary Hyperparathyroidism: A Multidisciplinary Symposium on the Diagnosis and Management of Parathyroid Disease**

This event, held at the Milwaukee Art Museum, will provide an overview of state-of-the-art management of parathyroid disease. Topics will include the diagnosis of hyperparathyroidism and possible differential diagnoses, complexities in diagnosis, methods of preoperative imaging, and surgical approaches to parathyroidectomy. For more information, please contact Dana Schmidman at dschmidm@mcw.edu.

#### **Tuesday, March 26, 2013: Ellison Memorial Lecture:**

The Department of Surgery is honored to welcome Yuman Fong, MD, as the 40<sup>th</sup> Annual Edwin H. Ellison Memorial Lecturer. Dr. Fong is the Murray E. Brennan Chair in Surgery at Memorial Sloan-Kettering Cancer Center in New York City.

#### **April 3, 2013: Vascular Access Symposium**

The Vascular Access Symposium will be held on Wednesday, April 3, 2013 in Conference Room M, located in the Clinical Cancer Center. This symposium will provide state-of-the-art updates targeted to vascular access surgeons, interventional radiologists, nephrologists, and healthcare professionals involved in the care of dialysis patients.

#### **May 10–11, 2013: Medical College of Wisconsin and University of Texas M.D. Anderson Cancer Center Endocrine Surgery Symposium**

The 2013 Endocrine Symposium will highlight current issues in the management of disorders of the thyroid, parathyroid, and adrenal glands through didactic lectures, panel discussions, and case presentations. Invited speakers include well-known academic surgeons who are extensively published in their respective fields and who can provide up-to-date summaries of the topics.