MEDICAL COLLEGE OF WISCONSIN DEPARTMENT OF SURGERY

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Department of Surgery Dedicated to Clinical Care, Research and Education

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Message from the Chair

DOUGLAS B. EVANS, MD Chair, Department of Surgery

This issue of *Leading The Way* highlights some of the recent accomplishments and future directions of the Regional Cancer Therapy Program (RCTP) under the direction of Dr. Kiran Turaga. Perhaps I can add a few words on the importance of the "P" (Program) in RCTP, as a successful *program* is much more powerful than its component parts and provides (to patients) much more than can be delivered by any single individual/physician. Regardless of the disease for which the *program* is developed (and we have *programs* in all Divisions within the Department of Surgery), there are common themes found in all high-performing multidisciplinary programs, for example:

- A commitment to the both patient of today by ensuring the best available therapies and cutting edge technology for the new patient seen this week, as well as a commitment to the patient of tomorrow through an integration of basic research, translational studies, and clinical trials. The integration of a robust research infrastructure provides hope for the patient of tomorrow through the development of more effective therapies. Hope for effective treatment, combined with a therapeutic plan developed with consensus from experts in the field (of different specialties) is a winning combination. We all know that our patients want two things: hope and a plan!
- A deep understanding that the program is about (and exists for) our patients, but will only succeed if there is a commitment to the team members who comprise the *program*. The RCTP, like all successful programs, has many members and all are critically important to ensure the optimal outcome of the patient of today and the development of better and more effective therapies for the patient of tomorrow. Team members who are appreciated for what they bring to the program (and the program's patients) often perform at a level not attainable in the absence of such positive reinforcement.
- A great quarterback will take the team only so far in the absence of a talented offensive line and a high performing defense—an analogy all in Wisconsin will appreciate! It takes a village to impact many of the complex diseases we are trying to tackle; the *program* (and its associated research, clinical care and education) will be only as good as its weakest part. Everyone's contribution is needed to make meaningful progress—this will be evident in the articles of this issue of *Leading the Way.* •

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Updates from the Regional Cancer The



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Regional cancer therapies use anatomical targeting with conventional surgery, chemotherapy, and radiation strategies to deliver high concentrations of anti-neoplastic therapy to the site of disease. The Froedtert-MCW Regional Cancer Therapy program has pioneered these techniques in southeastern Wisconsin in the management of patients with peritoneal disease from appendiceal, colon, gastric, and mesothelial tumors; for limb malignancies including melanomas and sarcomas; and hepatic malignancies including metastatic colon cancer and ocular melanomas. This is not surprising, given our rich history with Drs. Robert Ausman and Edward Quebbeman leading the way with isolated hepatic perfusions, our culture for safety and collaboration, and our mission to provide patients with cutting-edge, personalized care through a multidisciplinary approach. We have expanded from a silo approach of talented individuals to a team of >50 healthcare providers interfacing in different ways to provide care for the patients of today and advance the quality of care for the patients of tomorrow.

Our program is now recognized as a national and international leader. The strides that we have made in the care of patients with peritoneal disease have occurred due to the institutional passion and commitment to a patient-centered approach, where the patient is actively involved in the decision making and therapeutic planning. Process improvement around the patient experience and advancement of the science behind management of patients are signature characteristics of our program. Every patient that enters the program interacts with a variety of providers, including the new patient coordinator, dietician, physical therapists with the "Prehab to Rehab" Program, surgical oncologists, medical oncologists, interventional oncologists, and palliative care physicians, as appropriate. Close interaction among the advanced practice providers, oncology nurses, and dieticians facilitates early recovery and transition to home. Furthermore, these programs help patients return to work and to a full quality of life. Some of the strides we have made in the management of patients with advanced malignancies include:

- Patient-centered approach in the management of malignancies
- Pioneering techniques of laparoscopic chemoperfusion and diagnostic laparoscopy for treatment stratification
- Early detection of peritoneal disease with advanced magnetic resonance imaging (MRI) protocols utilizing diffusion weighted imaging
- Second look program for patients with advanced primary tumors with no peritoneal disease to detect and treat disease early
- Development of treatment pathways for patients with peritoneal surface disease and malignant bowel obstructions
- Inclusion of *Honoring Choices* Program, where candid conversations are offered to patients with advanced malignancies regarding advanced care planning
- Collaboration with MCW Tissue Bank to bank pathological specimens for patients with peritoneal disease
- Establishment of Peritoneal Carcinomatosis Data Bank for outcomes research. Ongoing research is the cornerstone of an academic medical center. The Regional

Cancer Therapies Program has contributed to the ever-advancing field of science by conducting and publishing research in peer-reviewed journals and organizing regional therapies symposia.

rapy Program (RCTP)

Things to Watch from the RCTP in the Upcoming Year

- Phase I/II trial of intraperitoneal docetaxel for patients with gastric cancer (PI: Ben George, MD)
- Image Segmentation with MR technology to detect peritoneal disease
- Implementation of LEAN process measures to improve clinic flow, wait times, coordination of care and patient satisfaction
- National Peritoneal Carcinomatosis Collaborative Registry
- · Decision modeling for optimizing treatment choices for patients

Challenging conventional paradigms of care for patients with metastatic disease has led to improved survival outcomes. Recent analysis by Hwang *et al* found that undergoing hepatic metastasectomy even in the presence of extrahepatic disease led to significant improvement in survival compared to historic data.¹ The concept of *hoping for a cure* for patients with peritoneal carcinomatosis has been suggested by Elias and colleagues, who found that 15% of patients with peritoneal disease from colorectal primaries reached disease-free survival at 10 years. Early second-look laparoscopy to detect and treat disease following colon cancers associated with perforations has been shown to yield five-year survival of 90%.^{2,3} Treatment sequencing using systemic chemotherapy with neoadjuvant intent has also led to significant advances in the management of patients with high grade-disease.



The mission of the Regional Cancer Therapy Program is to provide cutting edge, personalized, multidisciplinary cancer care for patients with advanced malignancies. Our actions embody our core values of compassion, integrity, respect, and excellence.

Optimizing the management of patients with complex regional disease requires a multidisciplinary approach. The team-based approach and synergy is essential to the program's mission. Embedded in all efforts of the program are our core values of compassion, integrity, respect, and excellence.

Candidates for Referral to the RCTP

- Patients with peritoneal carcinomatosis from appendiceal, colon, gastric, mesothelial, desmoplastic small round cell, and other histologies
- Patients with malignant bowel obstructions
- Patients with high risk primary tumors including perforated T4 colon and gastric cancers, patients with limited metastatic disease or peri-serosal tumors
- Patients with limb-threatening sarcoma not amenable to conventional surgical resection/radiation
- In-transit melanoma with no distant metastases
- Patients with hepatic metastases from colorectal and ocular melanoma primaries. •

FOR ADDITIONAL INFORMATION on this topic, see references below, visit mcw.edu/surgery, or contact Dr. Turaga at 414-805-5078; kturaga@mcw.edu.

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COL Lewis Somberg

Dr. Somberg graduates from U.S. Army War College

COL Lewis Somberg, Professor, Division of Trauma/Critical Care, graduated from the U.S. Army War College at Carlisle Barracks, earning a Master of Strategic Studies degree on July 25. The Army War College Distance Education course is taught over two years consisting of rigorous distance-learning combined with two resident sessions. The Master's program focuses on strategies that affect every aspect of national security such as international relations, regional concerns, and contemporary military challenges. The goal is to provide future senior leaders with the tools to become creative and strategic critical thinkers. Completion of the program also confers Joint Professional Military

Education I credit, which is an important step towards further career advancement. COL Somberg will resume his tenure as the Commander of the 801st Combat Support Hospital based at Ft Sheridan, Illinois having just returned from another deployment in Afghanistan. •

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Incorporating Palliative Care into a Thera Challenges and Opportunities



FABIAN JOHNSTON, MD, MHS Division of Surgical Oncology



JENNIFER BLISSIT, BSN Supportive Care

For decades, surgeons have been at the forefront of the palliative care movement. The focus of palliative care involves attention to symptom distress; communication regarding goals of care in relation to prognosis; and patient preferences, transition planning, and family support. Surgical palliative care is defined as "the treatment of suffering and the promotion of quality of life for patients who are seriously terminally ill under surgical care."¹Despite a clear and established role, many surgeons are not prepared to effectively provide palliative care, and they are often resistant to utilization of specialty palliative care services.

Roadblocks include the term "palliative" having a negative connotation as being errantly equated with "failure." Increased utilization of quality metrics may draw further scrutiny to potential palliative interventions. Additionally, there is poor training and support for surgeons to provide primary palliative care services. Despite these barriers, there are opportunities for surgeons to improve care of patients with advanced malignancies, including improving surgeon-patient communication and placing greater emphasis on advanced care planning prior to operative interventions. As providers for patients with advanced malignancies, surgeons are an ideal conduit for delivery and improved utilization of



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early palliative care. We introduce advanced care planning with our cancer patients as a normal part of every discussion, and refer the patient to their primary care provider or our Quality of Life service to help facilitate further conversations and documentation. By embracing the discussion with the patient and family, a door is opened to an important part of comprehensive, quality care. Discussion of goals allows for alignment of treatment with expectations and detailed, tailored discussions regarding the patient's understanding.

To standardize the role that regional therapy has in the management of patients with advanced malignancies, future efforts must focus on education and research. Caregivers must possess adequate tools to perform routine palliative care and understand the appropriate time to refer for specialized services. The aging population and paucity of palliative care specialists are important issues that call the education and training issues to the forefront. Building the relationship with patients and families early rather later in their course will establish a partnership, build trust, and provide a paradigm shift in the role of palliative medicine. Recognition of palliative care as a skill along the continuum of care holds a strong potential to improve outcomes and address the well-being of the "whole person."



Gary Seabrook, MD

Dr. Gary Seabrook receives 2014 Smallwood Award

Gary Seabrook, MD, Professor of Surgery, Chief of Vascular Surgery, and Senior Medical Director of Froedtert & the Medical College of Wisconsin Surgical Services, has won the 2014 Thomas L. Smallwood Award for Clinical Excellence. The Smallwood Award is presented by the Froedtert Hospital Board of Directors to an individual at Froedtert Hospital in recognition of outstanding contributions to the care of patients at Froedtert Hospital.

Dr. Seabrook leads the Surgical Services platform at Froedtert Hospital & the Medical College of Wisconsin with his colleagues Drs. Judy Kersten and Shannon Hersey and Hospital Vice President Dr. Allan Gray. Dr. Seabrook completed his training at The Medical College of Wisconsin and joined the faculty 25 years ago. He has been a leader in our Department of Surgery for more than two

decades. "Leadership in a complicated, matrixed structure is challenging and always subject to critique," said Dr. Lee Biblo, Chief Medical Officer of Froedtert Hospital and the Medical College Physicians Practice. "Gary is well respected for his collaborative and calm approach in an often high charged environment – the operating theater." Dr. Seabrook has authored more than 100 papers, abstracts, and book chapters in this field.

peutic Paradigm-

As the elderly population grows in the United States, the role of surgeons as providers of palliative care will likely become commonplace due to the vital element of palliative care as part of a multidisciplinary team. Current research suggests that 32%, 18%, and 8% of Medicare beneficiaries underwent surgical procedures in the last year, month, and week of life, respectively.² As a medical community, we have consistently spent approximately 30% of Medicare dollars in the last year of life.³ Given this reality, systems should focus on both models of utilization of palliative care and the quality of current practice. To that end, we have joined with the Wisconsin Medical Society to introduce *Honoring Choices Wisconsin* to our patients with advanced gastrointestinal malignancies. *Honoring Choices*, based on *Respecting Choices* platform, is designed to build system change, advocacy and education around advanced care planning with conversation at its core.⁴ Patients who have participated have resoundingly described their appreciation of the discussions they and their loved ones had with our trained facilitators.

Surgeons are uniquely aware of the complexities of care needed for management of patients with malignancies. We are routinely called on to aid in the management of these patients. As surgical educators and researchers, we consider focused efforts on palliative care an integral part of our practice.

FOR ADDITIONAL INFORMATION on this topic, see references below, visit mcw.edu/surgery, or contact Dr. Johnston at 414-805-5828; fjohnston@mcw.edu.

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2014 Eberbach Award Winners

he Eberbach Banquet is held every year to honor our graduating residents and recognize outstanding faculty and resident educators. At this year's banquet, held on June 14, Andrew Kastenmeier, MD (Division of General Surgery) received the Golden Cane Award for the second consecutive year. Established in 1987, the Golden Cane Award recognizes an outstanding educator, as chosen by junior and senior medical students. Dr. Kastenmeier is the first to win this award in two consecutive years since Brian Lewis, MD won in 2006 and 2007. Steven Kappes, MD (Aurora Grafton) was the recipient of this year's Professionalism Award. This award was established in 2005, and is presented to the faculty member who best exemplifies outstanding professionalism, as selected by all current surgery residents.





Andrew Kastenmeier, MD



Steven Kappes, MD



Jasmeet Paul, MD



Richard Steliga, MD

DEPARTMENT OF SURGERY WELCOMES CHIEF RESIDENTS 2014-2015



Annabelle Butler, MD



Ryan Groeschl, MD



Paul Jeziorczak, MD, MPH Kathleen O'Connell, MD



Caitlin Patten, MD





Rebecca Rentea, MD

Team-Based Approach for Optimizing Outcomes



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COURTNEY HANSON, RN, MSN, APNP Division of Surgical Oncology



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PAM KEXEL, PA-C Division of Surgical Oncology



EMILY ZEI, RN, BSN Regional Therapies, Hepatobiliary, and Endocrine Cancer Programs

The Regional Cancer Therapy Program consists of a unique group of providers who care for patients with peritoneal malignancies. The most common procedure performed is cytoreductive surgery with heated intraperitoneal chemotherapy, otherwise known as "HIPEC." Treatment is provided to a specific area, or region of the body, minimizing the negative side effects for patients. This surgery is primarily focused on patients suffering from several types of abdominal cancers including those arising from the colon, stomach, appendix, ovary, and peritoneum, including mesothelioma. Froedtert & The Medical College of Wisconsin Regional Cancer Therapies Program has grown rapidly since its inception in 2010. Patients have traveled great distances to receive this renowned, sophisticated care at FMLH/MCW Clinical Cancer Center.

Patients undergoing HIPEC surgery often have a high level of physical, emotional, and psychosocial needs. The outpatient oncology team consists of professionals from various specialties including dieticians, physical therapists, psycho-oncologists, quality of life specialists, fertility preservation specialists, new patient coordinators, billing coordinators, and oncology-trained nurses. The inpatient care team consists of a nurse practitioner, residents and students, dieticians, physical and occupational therapists, and specialty-trained operating room nursing staff and perfusionists.



CHRIS WALCZAK, MPT, CLT Clinical Cancer Center Rehabilitation Services



KARA SONNTAG, RD Dietician



KRISTI OPPER, MS, RN, ACNS-B Clinical Nurse Specialist



HEIDI OLSON, RN, BSN Regional Therapies, Hepatobiliary, and Endocrine Cancer Programs



ANDREA ORTIN, BSN, RN Liver, Pancreas, Colorectal Cancer Programs

The outpatient and inpatient teams have developed a unique, costeffective, and efficient approach to caring for these complex patients. The patient's journey begins with a New Patient Coordinator (NPC) at the Clinical Cancer Center. The NPC introduces the patient to the program, gathers medical records, and schedules the physician consultation. However, prior to the consultation, the advanced practice provider (APP) reviews the medical records and coordinates specific appointments that allows for clustering of care for patients traveling from a distance. Other team members including nurses, dieticians, counselors, and physical therapists consult with the patient at this first visit. If the patient is a candidate for HIPEC, they are educated about the surgical technique, risks, benefits, and recovery process. This information is reinforced in a patient education handbook that includes pre-op/post-op care, dietary, and physical therapy information. Informational Internet sites and patient support groups, such as the PMP Pals, provide answers to frequently asked questions as well as community support.

Patients are offered the "buddy" program, which includes contact with a volunteer patient who has previously undergone HIPEC surgery. A HIPEC checklist tool is used to navigate complex pre-operative testing, including consults with ostomy nurses, anesthesia, and other members of the team. Information provided is reinforced during future visits to reiterate the treatment plan and clarify the surgical process.

for Patients with Peritoneal Surface Malignancies

After surgery is performed, the patient is admitted to a designated HIPEC inpatient nursing floor, which is staffed with experienced nurses, dieticians, therapists, and social workers. All hospital nursing staff caring for HIPEC patients are oriented by a clinical nurse specialist. Resident education is integrated seamlessly by using electronic medical records order sets, teaching tools, and conferences along with the team handbook. Team rounds occur at least once daily and all physical and psychosocial variables are assessed. Daily goals are developed. Discharge readiness is assessed daily and the outpatient and inpatient APPs collaborate and clarify discharge needs and arrangements.

After the patient is home, the outpatient APP communicates with the patient within 24 hours. This may be done over the phone, texting, email or via Skype, according to the patient's desired route. The Oncology registered nurse triage line was developed so that the patient can contact the office if issues arise that require immediate attention. The patient is often seen in clinic weekly while recovering from surgery. Survivorship issues are introduced, which include routine healthcare screening and quality of life concerns such as financial, relationship, family, and sexual issues.

Prehab to Rehab Program

Patients are examined prior to surgery to assess functional performance status and collect baseline measurements of strength, gait speed, and balance. They are instructed in home exercises for core, upper and lower extremity strengthening, and a walking or biking program to improve or maintain their endurance.

Post-surgery, the patient's balance and gait speed are re-assessed and their home exercise programs are adjusted accordingly. Occupational therapy is also consulted to address activities of daily life.

Dieticians in the Peri-Operative Period: The End of the NPO

Proper nutrition is important both before and after surgery and plays a vital role in the patient's surgical outcome, as it promotes both healing and recovery. During pre-operative visits with the physician, dieticians conduct an initial assessment in order to determine current nutritional deficiencies and attempt to correct these prior to surgery. In addition, maintenance of preoperative weight (or increase depending on current nutrition status) and plans are reviewed for calorie, protein, and hydration needs following surgery. At this visit, expectations for nutrition during their inpatient stay also are reviewed. The routes of parenteral and enteral feeding are discussed and temporary feeding tube placement is addressed.

If the patient requires enteral or parenteral feeding routes, the inpatient dietician monitors the advancement and tolerance of the patient until discharge. Upon discharge, the inpatient APP informs the outpatient dietician of the patient's nutrition status and plan of care. At future post-operative visits, the dietician performs follow-up assessments and helps facilitate adjustments to nutritional support. Often, food "experimenting," coupled with patience and persistence, is necessary and regular telephone follow-up assists patients with the transition.

The coordination of the "flow" of patient care relies on communication between team members. A team meeting is conducted weekly where programming issues, inpatient and outpatient updates are also provided. Coordination of care and goals are established and gauged by quality measures such as patient satisfaction, re-admissions, and infection rates. This allows a team-based approach to allow the patient to return to the best quality of life and survivorship. AVATAR patient top level satisfaction score results have been among the highest in the hospital at 94%, 92%, and 97% in the last three quarters.

Our team is successful because all members are encouraged to practice to the fullest extent of their experience in order to provide integrated, high-quality care. The most significant challenge in developing this approach was to encourage others to "think outside the box." Our program has been successful over the years due to our ability to respect each team member's expertise, sustain a positive "can-do" attitude, and our ability to challenge the concrete methods of providing healthcare.

Team-Based Care for Patients Undergoing Cytoreductive Surgery and HIPEC

- Pre-clinic visit chart review with appropriate clustering of appointments, pathology review to minimize patient discomfort
- At clinic visit, provision of resources for support including dietary consult, "buddy" system, and appropriate triage to "Prehab to Rehab" and Quality of Life program
- HIPEC Checklist employed to avoid errors; EMR order sets
 utilized for efficient use
- OR Staff dedicated to care of patients with peritoneal disease, and operating room plan discussed at weekly meetings
- Daily goal setting by inpatient team, seamless integration of resident education into patient care
- Discharge planning and coordination between inpatient and outpatient APPs
- Ultra-early phone call (<24 hours) to identify potential problem areas, with early referral to infusion clinic, dietary support, or physical therapy. Telemonitoring using smartphone cameras and Skype.
- Phone triage line with oncology nurses available for close monitoring
- Coordination of care with presentation of quality, patient satisfaction and cost metrics to close feedback loop to the team on a weekly basis

Evolving Treatment Strategies for



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During the past two decades, novel treatment modalities for primary and metastatic liver tumors have been developed. While surgical resection continues to offer the greatest impact on long-term survival, up to 70% of patients with hepatic malignancies are deemed unresectable, thereby precluding the most durable approach. Liver transplantation is challenged by the scarcity of available organs. Instead, the majority of patients will rely on alternative therapies, often considered palliative, which attempt to maintain similar tenets as surgery: improve quality of life and prolong survival. Taking advantage of the unique dual blood supply of the liver, hepatic artery-based locoregional therapies have emerged as a treatment strategy for liver malignancies. In contrast to the normal liver parenchyma, which is supplied predominantly by the portal venous system, liver tumors are supplied almost exclusively by the hepatic arterial system, which provides the rationale for transarterial therapies.

First described in the late 1970s for the treatment of hepatocellular carcinoma (HCC), transarterial therapies continue to evolve and now are essential for the management of HCC and other malignancies, including intrahepatic cholangiocarcinoma (ICC) and colorectal liver metastases (CRLM). Currently, a variety of techniques that utilize a transarterial approach exist, including hepatic artery infusion therapy (HAI), transarterial chemoinfusion (TACI), and yttrium-90 radioembolization (Y90). However, transarterial chemoembolization (TACE) remains the most widely performed and accepted locoregional therapy for inoperable liver malignancies.

Currently, guidelines based on randomized trials only exist for HCC. However, similar treatment tenets as described for HCC have been applied to the other liver malignancies. According to the American Association for Study of Liver Diseases (AASLD), TACE is recommended as a first-line, non-curative therapy for patients with large or multinodular tumors without vascular invasion, absence of extrahepatic disease, compensated liver disease (Child-Pugh A/B), and overall good performance status (Eastern Cooperative Oncology Group [ECOG] Performance Status 0).¹

Traditionally performed under moderate sedation, TACE consists of selectively delivering (via catheter injection) a mixture of a chemotherapeutic agent and embolic material to the tumor's arterial supply. Although initial experiences with TACE resulted in equivocal outcomes, two seminal randomized controlled trials published in 2002 were the first to demonstrate the survival benefit achieved with TACE in patients with HCC. In the study by Llovet *et al*, patients with unresectable HCC who received doxorubicin-based TACE had a significant improvement in survival rates at one and two years (82% and 63%, respectively) as compared to those who underwent conservative treatment (63% and 27%, p = 0.009).² Similarly, improved survival following cisplatin-based TACE compared to symptomatic treatment for patients with unresectable HCC was reported by Lo *et al*.³ A total of 40 patients underwent TACE, and experienced significant improvement in survival at one and two years



Weekly team meeting with some of the inpatient and outpatient team members

Unresectable Liver Malignancies

(57% and 31%, respectively) as compared to the control group (32% and 11%, p = 0.002). Despite the variable outcomes reported by the two studies, these trials were pivotal in the treatment of unresectable HCC.

In addition to TACE, drug-eluting bead TACE (DEB-TACE) is an emerging innovation in chemoembolization techniques. DEB-TACE is an alternative technique that consists of highly absorbent PVA microspheres that have been modified with sulfonate groups, enabling active sequestering of cytotoxic compounds in their salt form when mixed together. Following transarterial embolization, the drug-eluting beads release the cytotoxic agent in a controlled fashion over a period of several days. In earlier clinical trials, DEB-TACE was shown to maintain a favorable pharmacokinetic profile along with a low peak plasma concentration, which resulted in reduced rates of treatment-related toxicity.^{1,2} Moreover, several retrospective studies have demonstrated improved five year survival rates ranging from 38–62% for patients with intermediate stage HCC following DEB-TACE. Therefore, the improved treatmentrelated toxicity along with similar, or perhaps superior, survival benefit as compared to conventional TACE has resulted in DEB-TACE being considered an effective treatment alternative.

The roles of TACE and DEB-TACE have also been examined for the treatment of ICC and CRLM with favorable outcomes (Table 1). However, attempts at comparing treatment effectiveness between TACE to the other

continued on page 11

TABLE 1—Summary of selected series on survival following transarterial chemoembolization (TACE) or drug eluting bead-TACE (DEB-TACE) for unresectable hepatocellular carcinoma (HCC), intrahepatic cholangiocarcinoma (ICC), and colorectal liver metastasis (CRLM)

						Overall survival		
Cancer Type	Author (Year)	No. of patients	Study Design	Treatment Regimen	Median Survival (mo)	1 year (%)	2 year (%)	3 year (%)
	TACE							
НСС	Brown <i>et al</i> (2008)	209	RC	Cisplatin, Doxorubicin, Mitomycin C	15.5	NR	NR	NR
	Sahara <i>et al</i> (2012)	51	RCT	Epirubicin versus ECME	21 19	85 95	76 65	NR
	DEB-TACE			Low	10	00	00	
	Burrel et al (2012)	104	RC	Doxorubicin	48.6	89.9	66.3	54.2
	Malagari <i>et al</i> (2013)	45	RC	Doxorubicin	NR	NR	NR	62.2 [†]
	TACE							
ICC	Park et al (2011)	72	RC	Cisplatin	12.2	51	12	NR
	Vogl <i>et al</i> (2012)	115	RC	Mitomycin-C or Gemcitabine or Mito- Cisplatin or Gem-Cisplatin	13	52	29	10
	DEB-TACE							
	Poggi <i>et al</i> (2009)	9	RC	Oxaliplatin DEB-TACE + Systemic Gem-Ox	30	NR	NR	NR
	Kuhlman <i>et al</i> (2012)	36	PC	Irinotecan DEB-TACE versus	11.7	NR	NR	NR
				Mitomycin-C TACE	5.7			
	TACE			Mitamusia O. Mitamusia				
CRLM	Vogl <i>et al</i> (2009)	463	PC	C+ Gem; Mitomycin-C + Irinotecan;	14	62	28	NR
	Albert et al (2011)	121	RC	Cisplatin, Doxorubicin, Mitomycin-C	9	36	13	4
	DEB-TACE							
	Fiorentini <i>et al</i> (2012) Narayanan <i>et al</i> (2013)	36 28	RCT RC	Irinotecan Irinotecan	22 13.3	NR NR	NR NR	NR NR

ECMF=epirubicin, cisplatin, mitomycin C, 5-FU, **Gem**=Gemcitabine, **NR**=not reported, **PC**=prospective cohort, **RC**=retrospective cohort, **RC**=retrospectiv

The Importance of Visiting Professors

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HEIDI WELLNER, RN, BSN, CCRN Cardiopulmonary Support

RICHARD J. BERENS, MD Pediatric Critical Care and Anesthesia

In June, we were honored to have Professor Robert H. Bartlett as the 13th Annual Glicklich Lecturer in Pediatric Surgery. Dr. Bartlett pioneered the use of Extracorporeal Membrane Oxygenation, or ECMO. Dr. Bartlett completed his general surgery training at the Brigham and Women's Hospital. It was there that he made the observation that the technology of cardiopulmonary bypass needed to be improved, as it was only limited to a few hours because direct exposure of blood to oxygen for prolonged time was lethal. He collaborated with engineers at MIT to develop a gaspermeable membrane that was used first in 1969 with animals for up to four days in duration. In 1975, Dr. Bartlett successfully treated the first infant, a little girl called Esperanza, meaning "Hope," by the nurses. The experience gradually moved from a few cases each year to several cases each month.

Today ECMO is an accepted treatment modality for neonatal, pediatric, and adult patients with respiratory and/or cardiac failure not responding to conventional medical therapy. ECMO is defined as the use of a modified cardiopulmonary bypass circuit for temporary life support in patients with potentially reversible cardiac or respiratory failure.¹ ECMO allows for gas exchange as well as cardiac support, thereby allowing for recovery from existing lung or cardiac disease.

The most common general surgical indication for ECMO support is in patients with congenital diaphragmatic hernia (CDH). Most commonly, patients with CDH require ECMO as a means of support while the reactive component of pulmonary hypertension resolves, which may take weeks. The following criteria are utilized in the decision to place a baby with CDH on ECMO support: inability to keep preductal saturations >85%, peak inspiratory pressure >28, hypotension resistant to fluid and inotropic



support, and inadequate oxygen delivery with persistent metabolic acidosis. Additionally, other criteria often include gestational age greater than 34 weeks, absence of intracranial hemorrhage >grade I, and absence of other congenital anomalies.^{2,3}

We utilize these criteria in patient selection for ECMO at Children's Hospital of Wisconsin (CHW). The

Professor Robert H. Bartlett

ECMO program at CHW started in 1986. Since then, we have cannulated >550 patients for ECMO support. Our average number of ECMO runs per year is 25. CHW is an active member of the Extracorporeal Life Support Organization (ELSO). We have been an ELSO Center of Excellence since 2006. A designated Center of Excellence demonstrates extraordinary achievement in promoting the mission, activities, and vision of ELSO using the highest quality measures, processes, and structures based upon evidence. These centers provide excellence in training, education, collaboration, and communication. During the 1980s and 1990s, many of our patients were cannulated for neonatal respiratory diagnoses, such as Persistent Pulmonary Hypertension of the Newborn (PPHN), meconium aspiration, and congenital diaphragmatic hernia. Since then our profile has changed. We now cannulate primarily for cardiac reasons. Our ECPR (ECMO during CPR) program has evolved as well, now cannulating about 10-12 patients per year. The mode of support at CHW is primarily venoarterial ECMO, but we have cannulated some patients for venovenous ECMO over the years. We have an aggressive training program for ECMO specialists, surgery fellows, anesthesia fellows, and critical care physicians including didactic classes and simulation. The ECMO program at CHW has provided a life-saving opportunity for hundreds of patients. Likewise, due to the extraordinary bioengineering and perseverance of Dr. Bartlett, the outcomes for many causes of neonatal lung failure were changed from having a 90% mortality rate to a 90% survival rate. Thanks to his contributions, thousands of patients' lives throughout the world have been saved.

Also this June, we were honored to have Dr. John L. Cameron as the 54th Eberbach Visiting Professor. Dr. Cameron's name is synonymous with surgery at Johns Hopkins University School of Medicine and Johns Hopkins Hospital and is equally associated with the development and refinement of pancreatic surgery for benign and malignant disease. Dr. Cameron is a graduate of Harvard University and the Johns Hopkins University School of Medicine. He was Chairman of the Department of Surgery and the William Halsted Professor from 1984 to 2003 and currently holds the Alfred Blalock Distinguished Service Professorship. Dr. Cameron was President of the American Surgical Association in 2000 and President of the American College of Surgeons in 2009. He has authored more than 450 manuscripts and 100 book chapters. He has edited over 25 textbooks, with perhaps the most noted being Current Surgical Therapy. In fact, during his visit to MCW, a number of our faculty brought their edition of *Current Surgical Therapy* (which is used as the main study guide for the certifying and qualifying examination of the American Board of Surgery) for his autograph. We also learned that Dr. Cameron's day starts each morning at 4:30 a.m. followed by rounds at Johns Hopkins Hospital at 5:00 a.m. (yes, seven days per week).

Dr. Cameron's career has been marked by a lifelong dedication to pancreatic surgery, especially for malignant disease. How best to manage the patient with pancreatic cancer, both in the operating room and in the postoperative period, has been developed by Dr. Cameron and his team. Fortunately for us, his team has included two of our current faculty members,



Drs. Fabian Johnston, Susan Tsai, John L. Cameron, and Kathleen Christians

Dr. Susan Tsai and Dr. Fabian Johnston. Also discussed during Dr. Cameron's visit was the routine of a 9:00 p.m. phone call, Monday through Friday, to ensure that all the patients were "tucked in" for the night. We won't disclose who, in the opinion of Dr. Cameron, provided the most detailed 9:00 p.m. phone call. As you would expect, one of our current faculty members holds that honor!

Visiting Professors are a source of great inspiration for all of us in academic surgery. These visits allow us to obtain a critical review of our work here which makes our programs better and stimulates new and exciting research projects. For our residents and medical students, it provides a unique opportunity to meet some of the most accomplished clinicians and scientists in this country. We are fortunate to have a robust schedule of visiting professors. Dr. Wagner and I thank all of the faculty whose hard work contributes to these many unique opportunities.

We have listed just a few of our special programs in October as an example:

- September 30–October 1: 28th Annual Schroeder Visiting Professor, Anna Ledgerwood, M.D., Wayne State University
- October 3: *Melodie Wilson Oldenburg Breast Cancer Symposium*, with Charles M. Balch, M.D., University of Texas Southwestern Medical Center; William J. Gradishar, M.D., Northwestern University Feinberg School of Medicine; Funda Meric-Bernstam, M.D., The University of Texas M. D. Anderson Cancer Center; Elizabeth A. Mittendorf, M.D., The University of Texas M. D. Anderson Cancer Center; and Lee G. Wilke, M.D., University of Wisconsin School of Medicine
- October 15: Grand Rounds, Fred Luchette, M.D., MsC, Loyola University
- October 22–23: Grand Rounds/Second Annual Solid Organ Transplantation Research Symposium, John Fung, M.D., Ph.D., Cleveland Clinic.

FOR ADDITIONAL INFORMATION on this topic, see references below, visit mcw.edu/surgery, or contact Dr. Wagner at 414-266-6550; awagner@chw.org.

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Treatment Strategies continued from page 9

types of transarterial therapies have proven to be difficult due to the heterogeneity in inclusion criteria, stratification factors, and primary and surrogate end points among studies.^{1,2} Nonetheless, the highly effective tumor response rates and minimal toxicity profiles continue to be compelling aspects of all transarterial therapy options.

As transarterial techniques continue to be improved and refined, it will also give rise to an expansion in the treatment pool. Future directions of transarterial therapies currently being investigated include combination therapies with systemic agents (sorafenib), TACE in the neoadjuvant setting prior to hepatic resection, as well as TACE as a treatment adjunct to downstage tumors to allow for liver transplantation.

At the Medical College of Wisconsin, a multidisciplinary team composed of experts in treating liver disease evaluates all patients with hepatic malignancies to ensure that the best treatment option is pursued. While not all patients will be candidates for surgical resection or transplantation, transarterial therapies has established themselves as an effective therapeutic option for patients who previously may have had only limited alternatives. •

FOR ADDITIONAL INFORMATION on this topic, see references below, visit mcw.edu/surgery, or contact Dr. Gamblin at 414-805-5020; tcgamblin@mcw.edu.

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Be the Best You Can Be: Strategies for Personal and Team Success



TRACY S. WANG, MD, MPH Division of Surgical Oncology

On June 26, the Department of Surgery, in conjunction with the Women's Faculty Council and the Office of Faculty Affairs and Diversity, hosted a symposium entitled "Be the Best You Can Be: Strategies for Personal and Team Success." Each July, with an incoming class of interns and new medical students, the academic year begins with a renewed sense of commitment to patient care among all faculty, allied health professionals, fellows, residents, medical students, and staff. To this end, the symposium was developed to serve as an inspirational start to a new academic year, a reminder of the impact we each have on every patient and their family, and the importance of personal and professional development in order to ensure the continued success of the surgical 'team.'

This year's invited speakers included three internationally recognized leaders in their respective professions: Bob Uecker, of the Milwaukee Brewers Baseball Club and an ardent supporter of the Department of Surgery and our "*We Care Fund*"; Dawn Riley, author of "*Taking the Helm*" and Executive Director of the Oakcliff Sailing Club in Oyster Bay, NY; and Elizabeth Brenner, Publisher of *The Milwaukee Journal Sentinel*, President of the Journal Sentinel, Inc. and a member of the MCW Board of Trustees. After opening comments by MCW President John Raymond and Dean Joseph Kerschner, Mr. Uecker reflected on his personal experiences as a patient and the care he has received at Froedtert and the Medical College of Wisconsin, infusing his personal story with his trademark sense of humor.

Ms. Riley, one of the best-known sailors in the world, was the only woman on the winning crew of the 1992 America's Cup and the first



Dawn Riley, Bob Uecker, Elizabeth Brenner

woman to manage an America's Cup sailing team as CEO and Captain of America3. She recounted many of the challenges she has faced in her career as a sailor and the experiences that '...taught [her] how to lead...and how to overcome challenges, especially those faced by women', experiences we all face in medicine today. Ms. Brenner, recently the recipient of the Boy Scouts of America Three Harbor's Council 2013 Distinguished Citizen's Award for exemplifying the Scouts' life values of individuality and strength, concluded the afternoon with a riveting talk on not only her own experience as a patient but her career as a journalist and leading a Pulitzer-Prize winning organization.

The symposium was attended by more than 100 members of the institution, including leaders from the Medical College of Wisconsin, Froedtert Hospital, Children's Hospital of Wisconsin, and MCW faculty, residents, and students.



Ryan Berg, MD



John Miura, MD

Ryan Berg, MD and John Miura, MD were among the recipients for the MCWAH Research Awards. The purpose of the award is to recognize the housestaff employed by MCWAH for excellence in research. They were nominated by their

Department of Surgery Represented in MCWAH 2014 Research Awards

respective program directors and selected by this year's MCWAH Research Committee comprised of Drs. Jonathan Bock, Thomas Ebert, Tina Yen, and Ken Simons.

Dr. Berg: Analysis of an Institutional Protocol for Thyroid Lobectomy: Utility of Routine Intraoperative Frozen Section and Expedited (Overnight) Pathology. Presented at the Central Surgical Association 2014 Annual Meeting.

Dr. Miura: Surgical Management of Hepatic Hemangiomas: An International Multi-Institutional Experience. Presented at the Americas Hepato-Pancreato-Biliary Association 2014 Annual Meeting. •

Welcome to Department of Surgery New Faculty



Carrie Y. Peterson, MD

O n behalf of Kirk Ludwig, MD and the Division of Colorectal Surgery, we are pleased to welcome Carrie Y. Peterson, MD back to the Medical College of Wisconsin and the Department of Surgery faculty.

Dr. Peterson is a native of Wisconsin. She did her undergraduate work at the University of Wisconsin-Eau Claire, and then earned her medical degree from MCW in 2005. As a medical student, she won an MCW Standing

Ovation award in 2002, was named to the Alpha Omega Alpha Medical Honor Society in 2004, and in 2005 she received the MCW Surgical Student Recognition Award. She completed her general surgery training at the University of California, San Diego in 2012 where she held many residency leadership positions. Her surgery residency included two years of research under the direction of Dr. Raul Coimbra, leading to a number of publications and national presentations. She then completed a Colorectal Oncology Fellowship at Memorial Sloan-Kettering Cancer Center and has just recently completed her Colorectal Surgery Fellowship at New York-Presbyterian Hospital/Weil Cornell Medical Center in New York.

Dr. Peterson's clinical practice at Froedtert & The Medical College of Wisconsin's Froedtert Hospital campus will concentrate on colon, rectal, and anal disease with a special emphasis on minimally invasive approaches for the treatment of colon and rectal cancer. She has training and expertise in robotic techniques and will make this a focus of her practice. Academically, Dr. Peterson will work to attain her Masters of Science Degree at MCW and joins our faculty already engaged in health services and outcomes research as well as clinical trial design.

Following her travels to both the East and West Coasts, we are thrilled to welcome Dr. Peterson "home" to Wisconsin and to the Department of Surgery faculty. She can be reached at cypeterson@mcw.edu.



Michael A. Zimmerman, MD

On behalf of Johnny C. Hong, MD and the faculty of the Division of Transplant Surgery, we are pleased to announce that Michael A. Zimmerman, MD has been appointed Associate Professor of Surgery at the Medical College of Wisconsin beginning August 1, 2014. Dr. Zimmerman will serve as Surgical Director of Kidney and Pancreas Transplantation, Medical Director of Incompatible Organ Transplantation, and Director of Clinical and Transplantation I Transplantation Research for our Solid Organ Transplantation Joint Program at

the Medical College of Wisconsin, Froedtert Health, Children's Hospital of Wisconsin, and the BloodCenter of Wisconsin.

Dr. Zimmerman received his medical degree at the University of California, San Francisco (UCSF), School of Medicine and completed his general surgery residency at the University of Colorado, Denver, under Alden Harken, MD, and fellowship training in multi-organ transplantation and hepatobiliary surgery at the University of California, Los Angeles (UCLA) David Geffen School of Medicine under Ronald W. Busuttil, PhD, MD. Following completion of his surgical training, Dr. Zimmerman joined the Division of Transplant Surgery, Department of Surgery, at the University of Colorado, Denver, in 2006. He was an Associate Professor of Surgery and served as Surgical Director of the Pancreas Transplantation Program. Board certified in surgery, Dr. Zimmerman specializes in liver, kidney, and pancreas transplantation, including live donor liver and kidney transplantation.

Dr. Zimmerman is also a highly accomplished scientist. A recipient of peer-reviewed research support from the National Institute of Health (NIH) and national organizations, his research focuses on autoimmune mediated vascular injury, transplantation ischemia-reperfusion injury and immunobiology. He is well published in basic, translational, and clinical research pertaining to the field of transplantation. He serves on the editorial boards of the *Journal of Surgical Research*, the *World Journal of Gastroenterology*, and *PloSONE*. He is an editorial reviewer for the *American Journal of Transplantation*, *JAMA Surgery, Liver Transplantation, Current Drug Targets*, and others. In addition, he is an active member of many national and international transplantation and surgical societies.

Please join us in welcoming Dr. Michael Zimmerman and his family to MCW. \bullet

YOU ARE INVITED

Reception at American College of Surgeons Clinical Congress, San Francisco, CA

October 27, 2014

Plan to join us at the MCW Department of Surgery/Alumni Association reception during the American College of Surgeons 100th Annual Clinical Congress on Monday, October 27, 2014.

The reception will be held 6–8 p.m. at The University Club of San Francisco, 800 Powell Street, San Francisco, California.

The Gale L. Mendeloff, MD, Visiting Professor Lectureship





Celebrating the Life of Gale L. Mendeloff, MD 1933 – 2010

On March 6, 2010, we lost an outstanding physician, scientist, mentor, and friend when Gale L. Mendeloff, MD, passed away unexpectedly at the age of 77. Cherished by his wife, Sunny, his large extended family, and numerous friends, Dr. Mendeloff's dedication to medicine inspired the creation of the Gale L. Mendeloff, MD, Visiting Professor Lectureship Fund.

Launched by his family, friends, and many former colleagues, the fund serves to remind us of his distinguished career as a doctor and educator.

Dr. Mendeloff led a life unparalleled by many. He began his career in 1963 as a staff physician at Columbia Hospital, where he remained until his retirement in 2002. During that time, he served as Chairman of the hospital's Department of Surgery, Director of the Vascular Laboratory, and Chief of Staff. He also served as President of the Milwaukee Surgical Society, the Milwaukee Academy of Surgery, and the Wisconsin Surgical Society.

Dr. Mendeloff was a master educator. His distinctive tutorials to medical students and residents were legendary. Whether it was his "Tubes" presentation or his classic teaching around "Who do you trust?", he was always trying to enlighten others regarding the many nuances of patient care.

The "Tubes" session focused on all the types of drains and tubes that were inserted into patients during surgery, the indications for placing these, how to monitor their output and when to remove them.

"Who do you trust?" emphasized the incredible privilege and responsibility a physician has when a patient entrusts them with their health care. A covenant that requires complete ownership by the physician.

To this end, Dr. Mendeloff stressed that every patient's x-ray, lab value, flow sheet and medication must be personally reviewed by the physician on a daily basis. It was not sufficient to rely on others to tell you these results. His point was very clear: when a patient gives over their health care to you, it is ultimately your responsibility as their physician to know everything about your patient's clinical condition.

Dr. Mendeloff's incredible passion for teaching was recognized by the Medical College of Wisconsin. He became a Clinical Professor of Surgery, an appointment seldom achieved by a surgeon in private practice.

Dr. Mendeloff's educational prowess was equally matched by his clinical acumen. He cared for his patients deeply, embodying the concept of understanding the patients' clinical and emotional needs. His ability to empathize was an incredible gift, often creating a connection with his patients that lasted a lifetime.

Frequently, he would be out for dinner with his family and a patient would approach him to say hello and thank you. It seemed as though the patient was just discharged from the hospital. Yet when asked by someone who that person was, Dr. Mendeloff would say "that is someone I took care of 10 years ago."

"Dr. Mendeloff was a talented surgeon and inspiring leader who dedicated his career to the care and treatment of his patients. He will truly be missed," said Stuart D. Wilson, MD, Professor in the Department of Surgery. "We are incredibly grateful for the establishment of these funds to benefit our medical students, residents and faculty. I think that is something Gale would be proud of."

Additional contributions to the Gale L. Mendeloff, MD, Visiting Professor Lectureship Fund can further strengthen the program and are appreciated by his family and the leadership of the Department of Surgery.

Please contact Meg Bilicki at mbilicki@mcw.edu or (414) 805-5731 for more information. \bullet

To refer a patient or request a transfer/consultation, please use the references below:

Froedtert & the Medical College of Wisconsin

All non-cancer requests Referrals: 800-272-3666 Transfers/Consultations: 877-804-4700 mcw.edu/surgery **Clinical Cancer Center** Referrals: 866-680-0505 Transfers/Consultations: 877-804-4700

Children's Hospital of Wisconsin

Referrals/Transfers/ Consultations: 800-266-0366 Acute Care Surgery: 414-266-7858

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MARK YOUR CALENDARS

October 3: Melodie Wilson Oldenburg Breast Cancer Symposium

This event will address the multidisciplinary management of breast cancer. Featured speakers are leaders in their respective fields of breast cancer research and treatment.

October 11: First Annual Foregut Symposium

This day-long educational activity is to familiarize the audience with the current status and future directions of treatments for common and uncommon diseases of the foregut.

October 22: Second Annual Solid Organ Transplant Research Symposium

This educational symposium will showcase updates in the state-of-the-art basic science and clinical/ translational research works in organ transplantation and immunobiology by scientists and investigators from Medical College of Wisconsin, Froedtert Hospital, Children's Hospital of Wisconsin, BloodCenter of Wisconsin, and other academic surgeons from regional transplant programs, who are qualified to report on up-to-date topics.

Please contact Dana Schmidman (dschmidm@mcw.edu) for more information on any of these events.

For a listing of select ongoing case conferences, please see www.mcw.edu/FileLibrary/Groups/Surgery/CaseConferences1262010.pdf.