

LEADING THE WAY

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From the Chair | Douglas B. Evans, MD

You will greatly enjoy reading the wonderful articles in this edition of Leading the Way and a big thank you to all of the authors. A special thank you to Stu Wilson and Steve Kappes for the article in tribute to Dr. John Just, who left us at the end of March after a difficult battle with idiopathic pulmonary fibrosis. As you will appreciate from the Wilson/Kappes article, John Just was a legend in resident education and taught the residents many life lessons in addition to a number of helpful hints in the operating room. One of the unique aspects of surgery in the city of Milwaukee is the large number of surgeons who completed their training at MCW. It is indeed a privilege for our current residents to work with alumni of this program at a number of hospitals throughout the city/state. While we are all similar in our quest for excellent results, there are often a number of different ways to get there. Having the opportunity to learn from a broad group of faculty across different hospitals and different hospital systems is a special aspect of the MCW Surgery training program which can be matched by few others. A brief shout out to our community colleagues who, like Dr. Just, invest their time and effort in training the next generation. We are grateful for all they do!

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Venous Thromboembolism in High-Risk Pediatric Trauma: Addressing 3 Common Myths



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Venous thromboembolism (VTE) includes the diagnoses of deep vein thrombosis (DVT), pulmonary embolism, and embolic stroke, and is overall a rare event following pediatric trauma. While the risk of VTE in pediatric patients appears much lower than in adults, in the setting of high-risk factors, the rate of VTE in injured children approaches 10%.^{1,2} High-risk factors include severity of injury, prolonged ICU stay, central venous lines, transfusion, traumatic brain injury, and non-weight-bearing fractures. When VTE occurs, it necessitates treatment and puts the patient at risk of recurrence or post-thrombotic syndrome.³ VTE also contributes to increased healthcare costs and hospitalization days.⁴ However, perceived low rates of VTE in pediatric patients and concern for risk of bleeding from chemical prophylaxis results in many children not receiving prophylaxis following trauma.^{5,6} Additionally, current pediatric prophylaxis guidelines are based on low quality evidence and single institution studies.³

The Midwest Pediatric Surgery Consortium (MWPC) is a collaboration of eleven academic children's hospitals within the Midwest, representing some of the largest and highest volume pediatric surgical practices within the country, including Children's Wisconsin. The mission of the MWPC is to advance the field of pediatric surgery through multi-institutional clinical studies examining high-impact pediatric surgical diseases. Due to the rarity of many pediatric surgical diseases, this collaboration allows accrual of large study populations. We harnessed the power of the Consortium to prospectively study the impact of pediatric VTE.

The NO CLOT study aimed to examine existing high-risk criteria, identify VTE events in a high-risk pediatric population, and demonstrate safety and effectiveness of chemical VTE prophylaxis. We conducted a prospective, multi-institutional study at eight American College of Surgeons verified level 1 pediatric trauma centers within the MWPC between 2019 and 2022. All pediatric trauma patients were screened on admission and included if 8 years old or less with 2 VTE high-risk factors, or older than 8 years with at least

1 high-risk factor; patients at low risk of VTE were excluded (Figure 1A). All patients in the study were recommended to receive chemical prophylaxis with a weight-based dose of low-molecular weight heparin within 24 hours of admission, with appropriate delays for intracranial bleeds or other ongoing hemorrhage (Figure 1B).

A) High-Risk Criteria:

- Patient not expected to ambulate within 48 hours post-injury
- ≤ 8 years age with ≥ 2 of the following OR > 8 years age with ≥ 1 of the following:
 - Central venous line
 - Spinal cord injury
 - Moderate-severe traumatic brain injury
 - Non-weight bearing fractures
 - Vascular injury
 - Expected ICU stay > 48 hours
 - Shock < 24 hours (i.e. need for transfusions, CPR, inotropes)
 - Major thoracoabdominal operation
 - History of VTE
 - History of chronic inflammatory diseases (e.g. inflammatory bowel disease, vasculitis, nephrotic syndrome)
 - Current use of estrogen
 - Family history of VTE (1st degree relative)
 - Obesity (BMI $\geq 95^{\text{th}}$ percentile for age)

B) High-Risk Prophylaxis:

- Mechanical prophylaxis for all ICU patients started on admission
- Low molecular weight heparin (0.5mg/kg subcutaneous BID, up to max 30mg BID) within 24 hours of admission, unless high bleeding risk or physician discretion

Figure 1. (A) Criteria used to define patients at high-risk for VTE and (B) recommended prophylaxis.

If prophylaxis was not started within 24 hours, the reason(s) was recorded. To best capture real-world application of guidelines and management, physician discretion to deviate from the protocol was allowed.

During the 3-year study duration, 460 high-risk pediatric trauma patients were identified and included. Fifty-five percent of patients received chemical VTE prophylaxis, with 13% receiving prophylaxis within 24 hours (Figure 2). The most common reason for delayed or withheld prophylaxis was intracranial bleed (30%), followed by physician discretion (26%). No bleeding complications were iden-

tified in the 251 patients who received prophylaxis. We identified 28 VTE events in 25 patients, for a VTE rate of 5.4% in this high-risk population. Two patients developed pulmonary embolism, and the remainder of the VTE events were DVTs. There was no significant difference in the rate of VTE based solely on receipt of prophylaxis, but patients who received prophylaxis earlier had significantly lower rates of VTE.

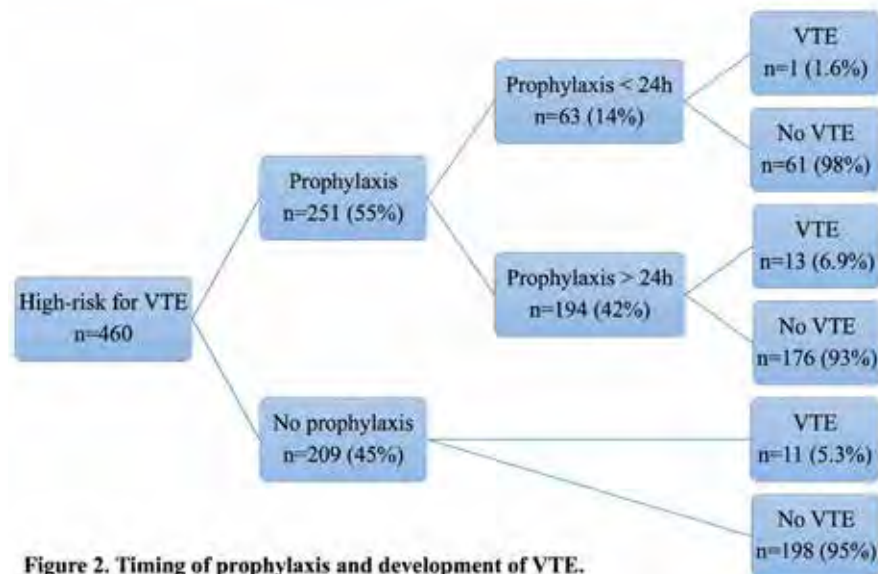


Figure 2. Timing of prophylaxis and development of VTE.

Our results highlight 3 general takeaways that counter common myths in post-traumatic pediatric VTE:

1. **Safety** – Concerns about bleeding risk is a commonly cited reason for withholding prophylaxis from pediatric trauma patients. Our study identified no complications from prophylactically dosed anticoagulation. This finding emphasizes the importance of early prophylaxis to prevent VTE that necessitates therapeutic anticoagulation, which carries a more significant bleeding risk. A limitation of our study was that nearly half of the patients never received prophylaxis as recommended despite their high risk and a significant percentage (41%) received prophylaxis more than 24 hours after injury. Future studies may be beneficial to determine if earlier prophylaxis within 24 hours can reduce VTE rates without increasing bleeding complications. Our study’s demonstration of safety of prophylaxis in a large cohort provides evidence to diminish barriers and sets a path for further implementation studies.
2. **Age** – Historically, the youngest pediatric patients have been omitted from post-traumatic prophylaxis guidelines due to a perceived low VTE risk prior to puberty. However, previous pediatric critical care literature has reported significant rates of DVT in the very young children and infants, owing to small vessel size. Our study uniquely included children of all ages and found a substantial VTE rate of 8% in high-risk children 8 years or younger. This demonstrates that in the presence of high-risk factors, younger injured children develop a rate of VTE comparable to older children. As such, post-traumatic pediatric prophylaxis guidelines should address children of all ages.

3. **Central Lines** – There is significant variability in management of central line-associated thrombosis between institutions and pediatric providers. Our study found 60% of the DVTs were central line-associated, defined as a DVT at the site of a current or prior central line. Contrary to common belief that central line-associated thrombosis is largely asymptomatic and inconsequential, we found that a third of the line-associated DVT presented symptomatically and one asymptomatic patient subsequently developed a pulmonary embolism. Placement and duration of central lines represent a modifiable risk factor and an area for quality improvement in preventing pediatric post-traumatic VTE.

In conclusion, we completed the largest, prospective, multi-institutional study demonstrating that high-risk guidelines allow for safe and appropriate administration of chemical VTE prophylaxis following pediatric trauma. We found that VTE occurred even among the youngest trauma patients in the setting of high-risk factors. Additionally, the presence and duration of central lines represents a modifiable risk factor in the development of post-traumatic VTE. Our results also demonstrate that significant barriers remain in adopting widespread prophylaxis use in pediatric care settings, and that the implementation and timing of prophylaxis present opportunities for future study.

Acknowledgements: The authors would like to thank Peter Ehrlich MD, Kyle Van Arendonk MD, PhD, and the Midwest Pediatric Surgery Consortium for their contributions to this study.

For additional information on this topic, visit mcw.edu/surgery or contact Dr. Witte at awitte@mcw.edu.

See page 5 for references.

John Just Thoracic Surgery Rotation: The Ultimate Mentorship



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Emeritus Professor of Surgery



John Just, MD

Emeritus Clinical Professor of Surgery
August 30, 1935-March 28, 2024

John Just graduated from Brown University and medical school from University of Illinois College of Medicine, Chicago, in 1961. After completing an internship in Illinois, he finished his general surgery residency under Edwin Ellison in Milwaukee (1966). He completed a cardio-thoracic surgery fellowship at Marquette University School of Medicine (now MCW). Starting his surgery practice in 1968, primarily limited to thoracic surgery, Dr. Just became ubiquitous, working at several hospitals throughout Milwaukee. In short order, he became the busiest thoracic surgeon in Wisconsin. He is married to his wife, Beth Ann, who grew up in Wauwatosa. Together, they have five children.

In 1990, due to the rise in the number of cardiac bypass surgeries and a decreasing number of thoracic (non-cardiac) surgery cases, the accrediting bodies were worried about decreasing thoracic surgery numbers for general surgery residents. Dr. Robert Condon, then Chairman of Surgery, asked Dr. Just if he would mentor fourth year surgical residents by providing them with a general "thoracic surgery" rotation. It turned out to be so much more! This practice was based at Saint Joseph's Hospital in Milwaukee, but in reality, he traveled daily to hospitals throughout the Milwaukee metro area. Having a one-on-one mentorship rotation spread over several hos-

pitals was a novel idea at the time. Dr. Just and the resident traveled together each day operating at several hospitals. No night call for the residents, just operating, and the residents loved it.

Over the following years, 114 residents would spend around six to eight weeks making the circuit with Dr. Just. One could argue, they learned as much riding from place to place and watching Dr. Just interact with a variety of physicians, nurses, surgical techs and other hospital staff at the various hospitals as they did in the operating room.

Manfred Chiang was the first resident to rotate with Dr. Just. Manny noted that there was a period of adjustment, as Dr. Just did not know exactly what to do with him. In the end, Manny explained that he was a great teacher, let the residents operate, and provided an excellent thoracic experience. During this rotation, they operated together at six different hospitals. The daily journey was a great part of the overall experience.

John Densmore stated, "I just felt like there was no place that he wouldn't go, and everyone loved operating with him (techs, nurses, surgeons)." Dr. Densmore also related he was loved by all of his patients.

Spending time together also allowed Dr. Just to get to know the residents, and he would instill his philosophy, and more, upon the residents. They often affectionately referred to him as "Double J." Marshall Beckman remembers a requirement for finishing the rotation was having a dental appointment. Dr. Just rightly assumed the residents were often neglecting themselves due to the rigors of residency.

He was a meticulous dresser and was known to take the residents shopping. Basil Salaymeh related that they went to Donge's hat shop. Dr. Just bought him his first "dress hat." Basil has since become a self-proclaimed "hat freak." Many still have shoes that Dr. Just bought for them. Mona Li describes her "good luck shoes." A pair of Birkenstocks he bought her, "which were never to be worn outside the operating room." She still wears them to this day.

Not only was he an impeccable dresser, but his car was also always immaculate. One day, his car was in the shop and Manny Chiang did the driving for the day. Let's just say, Manny's car was not kept to the standards Dr. Just was accustomed to. They promptly made

a detour to the Octopus Car Wash before heading out on their appointed rounds.

One day, Dr. Just got a flat tire on his car. When AAA was slow to respond, Basil Salaymeh jumped into action and quickly changed the tire. Dr. Just was in disbelief. Basil's clothes became soiled, and Dr. Just insisted that he pay for dry cleaning himself.

A couple of the philosophies he expounded upon were regarding hard work and family. Several residents commented on his work ethic. His descriptions of his early years of practice re-emphasized what the residents could see daily. Dr. Just prided himself on being available any day, any night whether it was an emergency thoracotomy or a chest tube that needed to be placed. It was also noted that he was very proud of his children and their accomplishments. As John Densmore describes it, "I knew that they were emulating his work ethic. There was pride and love, which impressed me beyond the material gains. A gentleman to the end, driven to honor family and patients alike." Basil Salaymeh acknowledged that Dr. Just tried speaking to his five children every day. As Basil put it, "What a great lesson on parenting."

His caring style extended to the residents as well. Bobby Wu was on service towards the later years of the rotation. After residency, at the age of thirty-eight, Dr. Wu required a cardiac catheterization. Dr. Just came to visit him in the hospital, which left a lasting impression on Bobby. Years later, Bobby arranged a dinner for "Double J" and several former residents attended. This speaks to the on-going admiration the residents have for this man. In 2008, Todd Neideen would be the last resident to have this wonderful experience. Todd described the sense of getting to know what it was like to be a real community surgeon.

Did this unique rotation experiment work? Absolutely, it did! Residents describe caseloads from bronchoscopies, chest tubes, and lung biopsies to lobectomies, pneumonectomies, and esophagectomies. The cases were great, but they will not forget the opportunity to work with an icon and all that came with the journey.

In addition to winning multiple awards for "teacher of the year," Dr. Just established an award (2008) to help fund a resident who was interested in a thoracic surgery career to travel to a meeting each year. Jonathan (Nino) Parisi was the first recipient of the award. Those that have won this ongoing award are grateful for his support.

Dr. Just was a talented surgeon and an excellent teacher; in addition, he had a great wit and took excellent care of patients. As Dr. Paul Hatton, a practice partner, stated, "few could match his experience, knowledge, or technical skill." It would be difficult to manufacture a better mentorship rotation. The residents who were fortunate enough to have this experience are indebted to him for his efforts. Certainly, they will forever be influenced by his passion. Perhaps his relationship with the residents can best be summed up by Dr. Chiang. "He treated us with friendship and respect."

References from page 2. Venous Thromboembolism in High-Risk Pediatric Trauma: Addressing 3 Common Myths

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Using novel RNA therapy to mitigate the risks of post-traumatic thrombosis



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The annual incidence of venous thromboembolic (VTE) disease, which consists of deep venous thrombosis (DVT) and pulmonary embolism (PE), is estimated to be ~100 per 100,000 person-years.¹ There is increased short-term and long-term mortality associated with DVT, which is further increased in patients who suffer a PE.² Patients experiencing traumatic injuries, especially polytrauma, are at significantly increased risk of VTE despite gold-standard prophylaxis.^{3,4} The development and subsequent resolution of DVT is a complex process that involves an interplay between the coagulation system and inflammation. Virchow's triad is the classic description of the risk factors associated with DVT development: endothelial injury, hypercoagulability, and flow stasis. Other risk factors such as smoking, cancer, reduced mobility, and inflammation are exacerbated in trauma and post-surgical patients. Despite these various etiologies and risk factors for thrombosis, they all converge on a common pathway: the conversion of fibrinogen to fibrin, the primary matrix for thrombus formation and propagation.

Changes in fibrin(ogen) structure and circulating levels are associated with an increased risk of thrombosis. Hyperfibrinogenemia exacerbates thrombus formation in murine models of thrombosis and increases risk of thrombosis in humans.^{5,6} There is interplay between the innate immune and coagulation systems that results in increased thrombosis, a term coined thromboinflammation.⁷ Traumatic injury and surgery both lead to activation of the innate immune system and often result in a hypercoagulable state. Fibrin(ogen) has been shown to be a mediator between coagulation and inflammation in processes such as neutrophil recruitment and activation, tissue injury and inflammatory cytokine release, and regulation of fibrinolytic enzymes.

A novel approach to anti-thrombotic therapy is through the specific and selective reduction of circulating fibrinogen using small interfering RNA (siRNA) directed against fibrinogen messenger

RNA (mRNA).⁸ This siRNA is delivered to hepatocytes using lipid nanoparticles (LNP) that have natural tropism for the liver, without targeting moieties. We have developed a siRNA directed against the chain of fibrinogen, termed siFibrinogen or siFga. siFibrinogen offers the advantage of precisely modulating circulating fibrinogen levels and maintaining them within physiologic range if desired. At early time points following severe trauma, fibrinogen levels fall due to consumption, and this is associated with poor outcomes.⁹ However, later stages of the post-traumatic course are complicated by hyperfibrinogenemia, from increased hepatic synthesis.¹⁰ We hypothesized that siFibrinogen could safely, specifically, and effectively reduce the circulating levels of fibrinogen following trauma and reduce the risk of post-traumatic venous thrombosis.

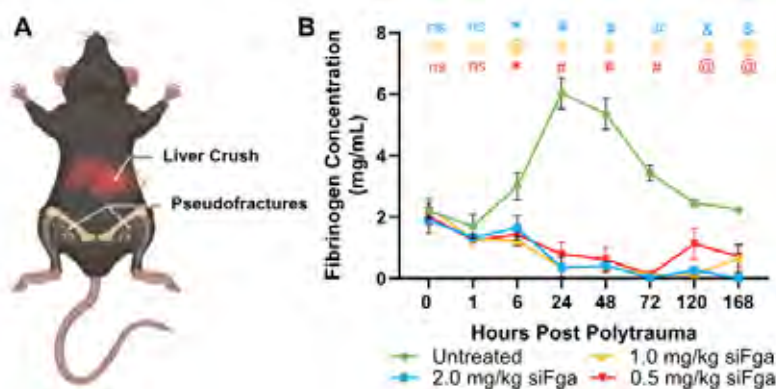


Figure 1. siFibrinogen mitigates the rise of fibrinogen after polytrauma in mice. Mice ($n=3$ /group/timepoint) were given a single dose of varying concentrations of siFibrinogen. (A) Schematic of polytrauma model. (B) Time-course of fibrinogen levels up to 1 week after polytrauma, relative to baseline. Data expressed as mean \pm SEM and analyzed by 1-way ANOVA. * $P < 0.05$; @ $P < 0.01$; & $P < 0.001$; # $P < 0.0001$, ns = no significant difference.

To investigate siFibrinogen in trauma we utilized a mouse model of polytrauma (Fig. 1A). This model consists of a liver crush in-

jury and bilateral hindlimb pseudofractures. The pseudofracture is performed by creating a soft tissue crush injury followed by injection of a “bone solution” derived from the long bones of donor mice. This creates an injury that mimics a long bone fracture without rendering the mouse non-ambulatory. Within 30 minutes following polytrauma, mice were treated with varying doses of siFibrinogen (0.5-2.0 mg/kg). Fibrinogen levels were measured at various timepoints following traumatic injury. We found there was an initial drop in fibrinogen levels, consistent with what is observed clinically followed by a significant increase over 24-48 hours followed by a decline back to baseline circulating levels around one week. siFibrinogen did not result in a significant initial drop compared to untreated mice, which is important as hypofibrinogenemia during the acute phase of injury is associated with increased hemorrhage, need for blood product transfusions, and decreased survival. Between 24-120 hours post-injury we found a significant decrease in circulating levels of fibrinogen in mice treated with siFibrinogen (Fig. 1B). Together, these findings suggest siFibrinogen can reduce the pathophysiologic rise in fibrinogen following polytrauma without exacerbating the bleeding risk associated with initial drops in circulating levels.

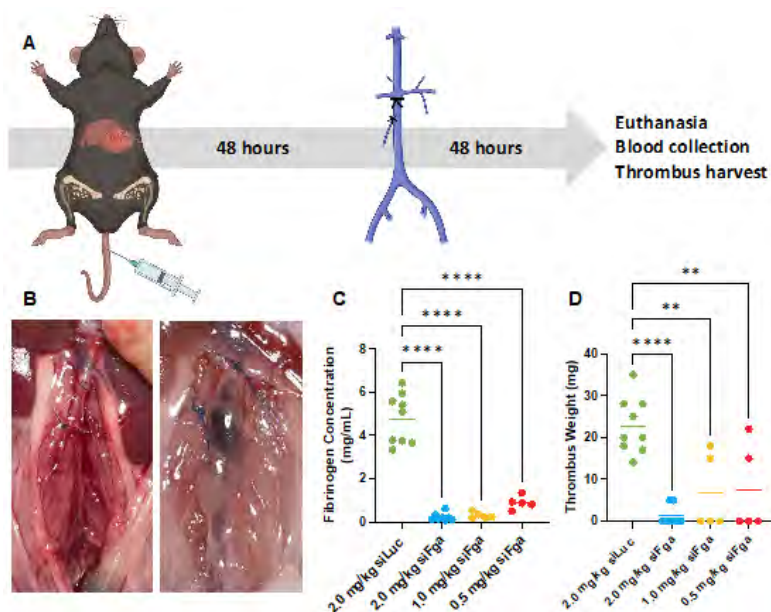


Figure 2. Suppressing excess fibrinogen production after polytrauma decreases thrombosis risk in mice. After polytrauma, mice ($n=5-9$ /group) were given a single dose of varying concentrations of siFibrinogen or si-Luciferase (control siRNA) after polytrauma, then underwent IVC ligation to stimulate venous thrombosis. (A) Schematic displaying the timeline of the experiment. (B) Representative images of *in situ* thrombus in a mouse given 2.0 mg/kg siFibrinogen (left) and 2.0 mg/kg siLuciferase (right). Yellow arrows point to IVC. (C-D) Fibrinogen concentration (C) and thrombus weight (D) at the time of euthanasia and harvesting the clot. Data expressed as mean \pm SEM and analyzed by 1-way ANOVA. ** $P < 0.01$; **** $P < 0.0001$.

We further investigated the role of siFibrinogen in reducing the post-traumatic risk of venous thrombosis. To accomplish this, we combined validated models of polytrauma, as described earlier, with a mouse model of DVT (inferior vena cava ligation). Mice were

subjected to the polytrauma model and 48 hours later subjected to IVC ligation and sacrificed 48 hours later (Fig. 2A-B). We found that fibrinogen concentration was significantly lower in the mice treated with siFibrinogen following combined polytrauma and thrombosis (Fig. 2C). Finally, we determined that for each dose of siFibrinogen, there was a significant reduction in thrombus burden as assessed by clot weight. There was no difference in survival or episodes of bleeding in mice treated with siFibrinogen (data not shown). These findings suggest that siFibrinogen can effectively reduce the risk of post-traumatic DVT in mouse models.

As mentioned, the conversion of soluble circulating fibrinogen to fibrin results in the formation of a matrix that serves as a platform for thrombus formation and is critical in the coagulation pathway for hemostasis. Therefore, there is a theoretical risk of bleeding with siFibrinogen. We have advanced our siFibrinogen technology and have begun studies in pigs. We have not found an increase in blood loss in a swine model treated with siFibrinogen compared to those treated with control siRNA or enoxaparin, the current gold-standard for DVT prophylaxis in trauma patients. Furthermore, data from murine and human studies suggest that circulating levels of fibrinogen must be severely reduced to result in episodes of spontaneous bleeding.

The prevention of VTE following polytrauma remains unoptimized with persistent thrombotic and bleeding complications using the current gold-standard of therapy. We have generated strong, pre-clinical data that suggests siFibrinogen can mitigate the pathophysiologic rise in fibrinogen without adversely affecting hemostasis while decreasing post-trauma thrombotic burden. Further work in swine studies will focus on developing siFibrinogen for use in human clinical trials as either a stand-alone or adjunct therapy for DVT prophylaxis in a highly vulnerable, polytrauma patient population.

For additional information on this topic, visit mcw.edu/surgery or contact Dr. Dyer at mdyer@mcw.edu.

See page 11 for references.

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The ugly side of cancer treatment: can therapy-induced cell instability contribute to second primary breast tumorigenesis?



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Second Primary Breast Cancer

Breast cancer survival has dramatically improved over the last few decades, with a stunning 40% overall reduction in breast cancer-related deaths since 1990. This is largely due to increased mammography screening and increased awareness, resulting in earlier stage diagnosis, and improvements in treatment. In many ways breast cancer remains the quintessential example of how aggressive screening and targeted therapy can make long-term survival attainable for patients.

However, as patient outcomes improve, second primary breast cancers (SPBCs) are emerging as a major hurdle in maintaining long-term disease-free survival. SPBCs are defined as a distinct new tumor that emerges in the breast of breast cancer survivors. Between 1994 and 2010, the rate of SPBC among patients with a prior history of breast cancer increased by more than 5-fold¹. This trend coincides with longer survival times for patients with breast cancer; at 20 years after an initial diagnosis, survivors have a 20% cumulative incidence of SPBC². Moreover, survival is significantly worse following a second primary tumor as compared to first primary tumor, and to date there are no known biomarkers that identify patients who may be at higher risk of a SPBC.

The molecular mechanisms driving SPBC onset remain understudied. Germline mutations, such as Li-Fraumeni syndrome or germline BRCA, are known contributing factors, although non-germline (somatic) patients are also at increased risk of SPBC³. Similarly, acquired somatic mutations in response to cytotoxic therapies may contribute to second primary cancer as demonstrated by higher cancer risk in children treated with radiation or chemotherapy. In both of these contexts, it is important to consider that acquisition

of mutations alone is insufficient to drive tumorigenesis^{4, 5}. This is strongly supported by observations in patients and mouse models demonstrating that only a few cells will give rise to cancers even in germline carriers.

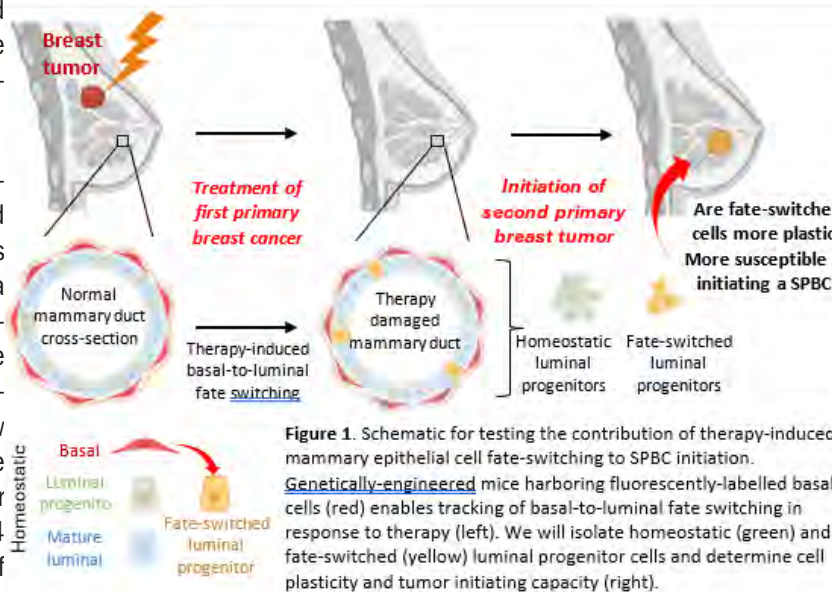


Figure 1. Schematic for testing the contribution of therapy-induced mammary epithelial cell fate-switching to SPBC initiation. Genetically-engineered mice harboring fluorescently-labelled basal cells (red) enables tracking of basal-to-luminal fate switching in response to therapy (left). We will isolate homeostatic (green) and fate-switched (yellow) luminal progenitor cells and determine cell plasticity and tumor initiating capacity (right).

Injury, Resolution, and the Emergence of Unstable Cells

A growing body of evidence suggests that tumor-initiating mutations cause cancer only if they occur in a cell of a certain epigenetic state or microenvironmental context

permissive of cancer initiation. To this end, recent studies from the Lytle lab demonstrated that the state of mammary epithelial cells prior to tumor-initiation can significantly impact the risk of tumorigenesis and tumor phenotype. Introduction of the same tumor-initiating mutation into the same epithelial cell type led to significantly different tumor progression when the tumor-initiating cell population was isolated from age-matched pre- or post-menopausal mice (data unpublished).

Our collaborator, Dr. Ian Macara, recently published findings demonstrating that the DNA-damaging agent cisplatin causes normal mammary basal cells to transdifferentiate (switch cell fates) to mammary luminal cells⁶ (Figure 1, left). Further, recent studies from the Lytle lab demonstrated that mammary luminal progenitor cells that arise from fate-switched basal cells do not fully resolve into a homeostatic luminal progenitor state (data unpublished). Rather, fate-switched luminal progenitors retain a hybrid epigenetic state with “footprints” of the basal cell epigenome. As cell-state instability and fate-switching have been shown to be an early step in tumor initiation⁷⁻⁹, we hypothesize that unstable, highly plastic cells resulting from therapy-induced cell fate switching may contribute to SPBC initiation.

Future Studies to Test Cell-Fate Switching in SPBC initiation

The Lytle lab, in collaboration with Dr. Tina Yen, was selected as a recipient for the Medical College of Wisconsin Cancer Center – American Cancer Society Institutional Research Grant (ACS-IRG) to determine if therapies commonly used to treat breast cancer are responsible for basal cell–fate-switching to unstable luminal cells, and to test if fate-switched cells are more susceptible to tumor initiation. We will use a genetically-engineered mouse model harboring fluorescently-labelled basal cells to identify, isolate, and study functional differences between fate-switched and homeostatic luminal progenitor cells following chemotherapy treatment (Figure 1, right). We will measure acquired plasticity by tracking transdifferentiation between cell types using a 3D organoid system, and test tumor-initiating capacity in mouse models by introducing oncogenes into each cell population.

Cell state reprogramming requires profound epigenetic remodeling. To begin to understand the molecular differences between homeostatic and fate-switched luminal progenitor cells, we have used snATAC-sequencing to define the epigenetic state of each cell population. This provided critical insights into potential molecular drivers of the hybrid cell state. Analysis of uniquely open chromatin regions in the fate-switched epigenome revealed an unexpected enrichment for Jun transcription factor family binding sites. Jun factors are linked to increased risk of breast cancer, cancer metastasis, and poorer prognosis. Thus, we will additionally determine if Jun transcriptional programs maintain an unstable cell state that contributes to disease, and test if pharmacologic inhibition of Jun factors can prevent therapy-induced cell fate switching and increased risk of SPBC.

Conclusions

SPBC is a growing problem in cancer medicine. The number of patients diagnosed with SPBC is increasing at a striking rate and the biological drivers responsible for SPBC initiation are poorly understood. Our proposed research will address the possibility that therapy-induced mammary epithelial fate-switching gives rise to unstable cells that are poised to initiate a new breast cancer. Further, these studies may uncover therapeutically actionable targets that

can be leveraged to prevent SPBC. However, there are many possible drivers of SPBC that have not been investigated. We hope to expand our studies to: 1) define the somatic mutations that accumulate in response to various treatments, 2) test whether the presence of a primary tumor can cause cell reprogramming in normal mammary epithelium, and 3) determine how mutations and altered cell states may synergize to initiate cancer.

On Sept. 5, Debbie Attanasio and Milwaukee Brewers owner Mark Attanasio generously pledged their support to MCW for pancreatic cancer research with a gift in honor of legendary Hall of Fame Brewers broadcaster Bob Uecker. The gift from Debbie and Mark Attanasio follows and supports a 2022 contribution from Bob Uecker to establish the Bob Uecker Chair in Pancreatic Cancer Research at MCW.



Photo (left to right): John Raymond, Sr., MD; Douglas Evans, MD; William Hall, MD; Bob Uecker; Mark Attanasio; Joseph Kerschner, MD

Surgical Attire Policy Updated to Include “Hijab” Throughout Froedtert Enterprise



Mariam Batakji, MD

CA3/PGY4 Anesthesiology Resident



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MCW M4 Medical Student

Muslim physicians make up over 4.5% of the physician workforce in the United States¹. Muslim trainees, especially those who wear the hijab (head scarf), continue to face discrimination in medicine. In 2016, MCW professor Aasim Padela MD conducted research on Muslim American physicians and religious discrimination; he found that 19% of Muslim physicians reported “sometimes” experiencing discrimination in the workplace while 5% reported “often or always” during their careers². This study was replicated in 2021 and the results showed an increase in the percentages regarding discrimination with 41% of Muslim physicians reported “sometimes” experiencing religious discrimination while 12% reported “often or always.”

Medical trainees who wear the hijab are often in limbo when navigating the operating room due to strict policies implemented by hospitals. Much of the concern regarding the permissibility of wearing hijab in the OR has been around sterility. While there is limited data regarding whether wearing outside hijabs increases risk of contamination, two studies conducted in the United Kingdom concluded that there is no evidence of a difference in efficacy of decontamination of uniforms/clothing between industrial and domestic laundry processes, or that the home laundering of uniforms provides inadequate decontamination^{3,4}. Another study conducted in the United Kingdom looked at the Department of Health’s “bare below the elbows guidelines” where they compared the density of bacterial colonies between doctors who wore nothing below elbow versus those who did not (ex. long sleeves) before and after hand washing and concluded that there was no difference in density or type of baseline bacterial flora on hands and forearms, irrespective of dress code and that simple washing hands with soap and water was effective in reducing colony numbers from fingers, palms and wrists⁵. In the same study they mention that whilst there is irrefutable evidence that handwashing is effective in reducing the spread of hospital acquired infections, there has been no similar proof that clothing policy affects handwashing or influences carriage of pathogens.

Given a lack of standardized approach to the surgical attire accommodations to include people of different faiths, different institutions have different approaches to the topic. In May 2021, the Association of Perioperative Registered Nurses updated their guidelines to include recommendations for religious head coverings. Their statement is as follows: “Religious head coverings (e.g. head scarves [hijabs], veils, turbans, bonnets) that are clean, constructed of tightly-woven and low-linting material,

are without adornments, and fit securely with loose ends tucked in the scrub top may be worn to cover the hair and scalp in the semi-restricted and restricted area.”⁶ In addition, the Toronto Academic Health Science Network (TAHSN) published recommendations for surgical attire regarding hijab in the areas with sterile procedures (ASP), i.e. ORs: “In order to fulfill religious obligations and uphold aseptic practices, Muslim women working in ASP will wash their hijabs prior to use and reserve certain hijabs specifically for ASP (i.e. these will not be worn outside). These hijabs will be non-lint producing and well-secured to prevent contamination of environment. Alternatively, disposable bouffant caps or surgical hoods may be worn over hijabs.”⁷

The aim of our quality improvement project was to increase awareness about trainees with different religious backgrounds and to create policies addressing appropriate surgical attire. Having a well laid out “hijab policy” will help learners and trainees feel safe and included in their work environment, which will promote a conducive environment for learning.

Driven by the above presented statistics and personal experiences, we decided to work on the current surgical attire and hand hygiene policies to accommodate for religious attire. It all started as a quality improvement project during residency. We took the above-mentioned studies and statistics as well as personal experiences in the operating room and presented them to the OR management at Froedtert. Given that our policies do not address religious head coverings or long sleeves, the OR staff leadership agreed that an updated policy is needed to create a more inclusive environment for trainees wearing the hijab.

A primary meeting was held with an OR Manager, the perioperative services Clinical Nurse Specialist Extern, and the enterprise Director of Infection Prevention and Control (IPAC). After reviewing our studies, this group decided it was appropriate to change the policy language to endorse religious head coverings that are dedicated to the OR and laundered daily, as well as approve long sleeved shirts worn under surgical scrubs that still allowed for surgical hand asepsis.

After a risk assessment was performed and the policy language was approved, notification was sent to the Medical Director of IPAC and the Associate Chief Nursing Officer of Froedtert Hospital. We worked in collaboration with the Policy Management Coordinator in Corporate Compliance to add the following:

FH IPAC Surgical Attire Policy #766

“For religious preferences, those needing to perform surgical hand antisepsis may wear a low-linting (e.g., polyester based fabric, athletic material) long sleeve shirt under their surgical attire. Refer to FH IPAC Hand Hygiene Policy for surgical hand antisepsis in this situation.”

“All head hair, including sideburns and neckline hair, must be covered by a clean, procedural area dedicated, lint-free head covering or surgical hood while in the Restricted and Semi-Restricted Area. Personal head covers (e.g., – hijab, yarmulke, head scarf) may be worn if it meets the requirements listed above and must be changed daily.”

FH IPAC Hand Hygiene Policy #771

“For religious preferences, persons may wear a low-linting (i.e. polyester based fabric, athletic material) long-sleeve shirt under their surgical attire as long as the sleeves are raised to the level of the elbow to allow for proper Surgical Hand Antisepsis.”

“Persons not wanting to perform the first scrub of the day in a public area may do this scrub in a gender-specific locker room.”

For further details, you can find the updated policies on the [Froedtert intranet page](#).

Acknowledgments: We would like to thank Lisa Buttweiler and Lisa Spencer for their help and dedication to this project .

See page 13 for references

Referrals, Transfers, and Consultations

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Transfers/Consultations: 877-804-4700

Clinical Cancer Center Referrals: 866-680-0505
Transfers/Consultations: 877-804-4700

PEDIATRIC PATIENTS

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

For more information, please visit mcw.edu/surgery.

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A Current Challenge in Heart Transplantation: Combined Heart Kidney Allocation



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Over the past 50 years, heart transplantation (HT) has emerged as the gold standard therapy for patients with advanced heart failure (AHF), boasting an impressive 1-year survival rate of nearly 90% and a conditional half-life of 13 years.

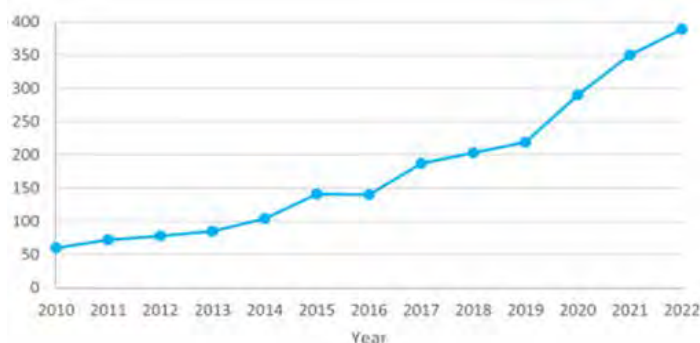
Severe co-existing irreversible kidney failure poses a challenge for isolated HT. However, leading to the growing number of patients undergoing combined heart and kidney transplantation (CHKT), multiple single-center and database studies have shown improved long-term survival, fewer rejections, and reduced cardiac allograft vasculopathy in CHKT recipients compared to those with isolated HT¹. The Cedars Sinai group found that during 24 years of follow-up, CHKT outcomes are not inferior to isolated HT outcomes at 5, 10, and 15 years after transplantation².

The major surgical consideration in CHKT is the choice of timing; between a simultaneous heart and kidney transplantation strategy or a staged approach. Since the inflammatory response during cardiopulmonary bypass, vasoconstrictor use, and post-HT instability can compromise kidney function, a staged approach is currently preferred. This is in line with the liver-kidney transplantation experience which is associated with improved kidney function and increased graft and patient survival. Immediate and long-term kidney function remains acceptable with delayed implantation, up to 48 hours, and a total cold ischemic time of 64 hours which also has the added benefit of potential reallocation of the kidney to an alternative recipient if the primary recipient remains unstable post-HT.

The bigger studies, including Scientific Registry of Transplant Recipients (SRTR) data analysis, have demonstrated that CHKT is associated with a statistically significant survival benefit when compared to heart transplantation alone in dialysis-dependent (12.6 years versus 7.1 years; $P < 0.0001$), but not in non-dialysis-dependent patients (12.5 versus 12.3, $P = 0.24$)³. Therefore, the 2016 International Society for Heart and Lung Transplantation (ISHLT) recommendations suggested that dialysis-depen-

dent patients and patients with $eGFR < 30$ mL/min/m² should be listed for CHKT. In such circumstances, the organ procurement organization offered a kidney along with the heart within 500 nautical miles of the donor hospital to candidates listed for CHKT. Prioritizing CHKT candidates over those awaiting an isolated kidney transplant appeared to violate the goal of equitable access to and utility of a limited resource, prompting a search for a better and a more just policy.

Figure 1: Number of Heart Kidney Transplants Performed Per Year



In 2018, UNOS changed the heart allocation policy to categorize waitlisted patients based on hemodynamic condition and usage of temporary mechanical circulatory support (tMCS) such as intra-aortic balloon pump (IABP), Impella pump, and ECMO. This shift enables the prioritization and reduction in waitlist mortality of sicker patients but had the unintended effect of a nearly 10-fold increase in the prevalence of patients bridged to transplant on ECMO with a noticeable increase in incidence of acute kidney injury (AKI) requiring dialysis⁴. The number of CHKTs performed in the USA has subsequently surged (Fig. 1) with no improvement in CHKT waiting list mortality and worse 1-year survival post policy change⁵. The use of ECMO as a bridge to CHKT remained controversial and is associated with worse survival after CHKT, an increased risk of delayed kidney graft function, and kidney allograft failure⁶. Despite the significant improvement in durable mechanical circulatory support technology and outcomes, when patients with advanced CKD and ESRD are bridged to CHKT with

durable LVAD, they had worse 1-year and 5-year survival rates and were more likely to require post-HT dialysis compared to isolated HT in the same patent population⁷. MCS-induced systemic inflammation and machine-induced stress, along with an increase in organ ischemic time with the new allocation system's broader geographic sharing, may have contributed to worsening CHKT outcomes.

On September 28, 2023, UNOS implemented new criteria for CHKT to achieve the best use of scarce donor organs resource and improve equity in transplant opportunities for multi-organ and single organ candidates⁸. In the new policy, CHKT is offered to candidates who meet specific criteria of sustained acute kidney injury and chronic kidney dysfunction (Table 1). More importantly, there is a safety net policy which offers priority in kidney allocation for patients who become dialysis-dependent or have an eGFR < 20 mL/min/1.73 m² at any point between 60 and 365 days after isolated HT. Experience with safety net policies in liver-kidney transplantation since 2017 has demonstrated better use of donor organs with a 16% decrease in the need for combined liver-kidney transplants. This policy also allows for wide use of living kidney donation with superior outcomes and an increase in the overall kidney donor pool⁹.

The new policy will be reviewed periodically to report waitlist registrations, heart-kidney transplant volumes, kidney after heart transplant volumes, and associated outcomes including mortality. This will allow close monitoring of the metrics and possible revisions to the policy as needed. It will be interesting to watch the evolution of this change and observe the impact this new policy brings to the CHKT field and specifically our heart transplant program here at MCW which has limited experience with CHKT. With a defined set of criteria for dual organ listing and the availability of a safety net, we should be able to broaden our program experience and take calculated risks knowing that there is an exit strategy for these complex patients.

For additional information on this topic, visit mcw.edu/surgery or contact Dr. Ali atakali@mcw.edu.




See page 19 for references

Criterion	Definition	Allocation policy
CKD	eGFR < 60 mL/min for > 90 consecutive days with one of: - ESRD with regular dialysis - CrCl or eGFR < 30 mL/min on or after date of kidney waiting list registration	A heart and kidney available from the same donor should be offered to a candidate who meets one of these criteria, is registered within 500 nautical miles of the donor hospital, and is listed adult heart status 1-5, before the kidney is offered to a kidney-alone candidate
Sustained AKI	For a period of 6 weeks, either one or a combination of: - Dialysis requirement at least once every 7 days - CrCl or eGFR < 25 mL/min at least once every 7 days	
Prior heart recipient safety net	Meets both of: 1. Registered on kidney waiting list within 1 year of HT date 2. Between 60 and 365 days after HT, is either on dialysis, or has CrCl or eGFR ≤ 20 mL/min	A candidate who meets this criterion receives priority on the kidney-alone waiting list

References from page 10, *Surgical Attire Policy Updated to Include "Hijab" Throughout Froedtert Enterprise*

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Putting the patient and family voice first



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Emmanuel Abebese, MD

Research Resident, Department of Surgery

On average, 2,300 assault-injured children and youth are treated in an Emergency Department in Southeastern Wisconsin every year.¹

In fact, firearm injury is now the leading cause of death in children, surpassing motor vehicle collisions and cancer.² Likewise, the magnitude of firearm injuries in children and youth treated at CW has increased exponentially (Figure 1). The impact of these injuries extends well beyond the hospital encounter.

Optimizing the care we provide

Firearm-injured children have both physical and mental healthcare needs after injury. They are at increased risk of post-traumatic stress and recurrent injury,³ and are almost twice as likely to have a subsequent violence-related arrest.⁴ However there has been little effort to address the long-term post trauma quality of life (TQOL) outcomes of chronic pain, depression, post-traumatic stress disorder (PTSD), and functional disability in this population. Despite notable and often multidisciplinary healthcare needs after injury, including injury-specific follow up and mental health services, the CW care model after injury has traditionally been fragmented. The surgical subspecialties work in silos, and clinics require patients and their families to travel to various sites, which are often far from home. There is an estimated 50% missed appointment rate in the CW General Surgery clinic alone following firearm and/or violent injury (internal data), highlighting the need for an alternative model to better serve this vulnerable population. Furthermore, little is known about who needs and obtains mental health care services following violent injury.

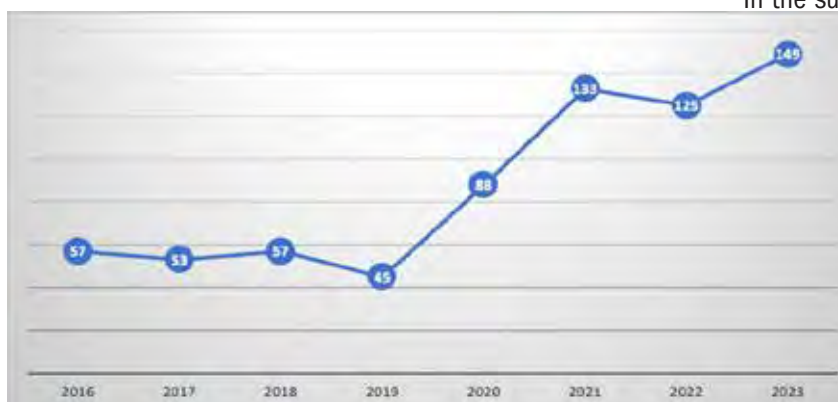


Figure 1. Patients <19 years presenting to CW with gunshot wounds, 2016-2023



CW, Children's Wisconsin; TQOL, trauma quality of life; CMG, Children's Medical Group; CSG, Children's Surgical Group

Figure 2. Community Advisory Board members

Finally, it is unknown how many children in the community are violently injured but do not get seen at CW and would potentially benefit from a trauma-informed pediatric-focused care model. With these issues in mind, we partnered with Froedtert TQOL experts and have been using a mixed-method approach to better understand the barriers to receipt of medical care after pediatric violent injury, and to explore the role for a multidisciplinary clinic focused on the complex needs of these children.

In the summer of 2023, with the support of the 2023 CTSI Pilot Award, we recruited and started meeting with a Community Advisory Board (Figure 2). This group included patients and their families, in addition to community leaders who work with vulnerable youth in Milwaukee County. We met once a month and discussed gaps in the current care model, and the ideal infrastructure for a Pediatric TQOL Clinic (Figure 3). This included how such a clinic would integrate into the community, improve communication, and optimize the utilization of community services. We recorded, transcribed, and synthesized the content of these meetings using qualitative methods. Additionally, from a quantitative perspective, we are actively analyzing a combination of trauma registry and electronic health record data to explore unmet need for services, as defined by "No Show" visits and late cancellations. These data

are being provided to specialty services, to support integration into the clinic using a data-driven approach. Altogether, this work has significantly informed a community-based multi-disciplinary clinic, focused on comprehensive, holistic, and trauma-informed care. Our vision is that this clinic will be the trauma medical home for recovery and resilience after injury and – we hope – it will pivotally transform the CW post discharge healthcare model for injured children.

is unique, with short- and long-term impacts on physical, mental and emotional health, making qualitative work even more essential. Hence, we are also hoping to secure extramural funding to explore the outcomes most important to children and their families. By hearing from firearm-injured children and their families, we can optimize the care we provide – including through the Pediatric TQOL clinic – and follow the outcomes concordant with the needs of the patient and family.



Figure 3. Community Advisory Board meeting content

There is a national call for a well-rounded approach to follow-up care, and the American College of Surgeons Committee on Trauma recommends using a trauma-informed approach: “a strength-based framework grounded in understanding of, and responsiveness to, the impact of trauma that emphasizes physical, psychological and emotional safety.”⁵ Now, more than ever before, is the time to optimize care for firearm-injured children and their families to tailor the healthcare we provide after discharge to improve long term health and quality of life for patients and the well-being of the community. But to do so we are listening to the patient, family and community. We are creating a clinic they want and need. We are happy to say, this clinic, the Pediatric Trauma Quality of Life Clinic, will kickstart this summer.

Listening to the patient and family

Understanding patient reported outcomes (PROs) after pediatric firearm injury is essential. PROs are essential to improve healthcare quality and are critically important in the assessment of recovery after pediatric injury.⁶ In fact, there is a national call for patient reported outcome research and consistent outcome measurement to allow benchmarking, identify opportunities for improvement, and improve long-term outcomes.⁷ However, there is limited work on the unique experiences of pediatric firearm survivors, and it’s not clear what, if any, PROs are most important to children and families after firearm injury.

Qualitative research can uniquely focus on what is most important to patients. Qualitative methods allow for “contextual specificity” not possible by quantitative research methods.⁸ Specifically for children, qualitative research is considered better (than quantitative research) to understand the rich and complex context of their natural environment and is especially appropriate to study factors that are subjective or difficult to measure.⁹ Pediatric firearm injury

For additional information on this topic, visit mcw.edu/surgery or contact Dr. Flynn O'Brien at kfob@childrenswi.org.

See page 17 for references.

Surgery residents hoping to make the big leagues with the playoff bound Brew Crew!



Career Highlight: Dr. Mary Otterson



Kirk Ludwig, MD

Professor of Surgery and Chief, Division of Colorectal Surgery; Vernon O. Underwood Professor in Colon Cancer Research



Mary F. Otterson, MD, MS
Professor

Division of Colorectal Surgery

As of July 1, 2024, the Division of Colorectal Surgery, the Department of Surgery, the Medical College of Wisconsin, and the Department of Veteran's Affairs Hospital in Milwaukee, will have changed. Dr. Mary Otterson, MD, Professor of Surgery, is retiring. Forty-four years at the Medical College is a long time. Let me detail what those years looked like, followed by some thoughts on what those years have meant.

Dr. Otterson came to MCW to start medical school in 1980. Before that, she spent a year at Marquette University, and then she went to New York city to train in ballet. She came back to Milwaukee and did her undergraduate work in Clinical Dietetics and Chemistry at Mount Mary College. After graduating medical school, she started her General Surgery Residency here at MCW, under former Chairman, Robert E. Condon. A year of her residency was spent in the then flourishing GI motility lab working with Dr. Condon, Gordon Telford, Sushil Sarna, and Vern Cowles. In that year in the lab, she earned a Master of Science in Physiology. She had an obvious talent for research and science. Six months of her training was spent as a General Surgery Registrar in Oxford, England, and she completed her training as Administrative Chief Resident in 1990. Dr. Condon recognized her talents and kept her on as an Assistant Professor and by 2004 she had risen through the ranks to become a full Professor and was awarded Tenure in 2005. She also had an appointment in the Department of Physiology, as recognition for

her skill as a surgeon scientist. Dr. Otterson was Vice Chairman of Surgery at MCW and Chief of Surgery at Zablocki Veteran's Affairs Center from 2002-2006. She has a huge list of service appointments on committees both at MCW and the VAMC. She has won a long list of awards for teaching, research, and clinical activity. Just some of them: Outstanding Graduate School Educator, Outstanding Medical Student Educator, Alpha Omega Alpha, Madonna Medal for Professional Excellence from Mount Mary College, Janssens Award for Research in Digestive Diseases, Albert Nelson Marquis Lifetime Achievement Award (listed in Who's Who for twenty consecutive years), Milwaukee's Top Doctors, America's Top Surgeons, Best Doctors in America, and Top Patient Experience Awardee. She served as President of the Wisconsin Surgical Society and the Milwaukee GI Society and was active in the Central Surgical Association. She is a member of all the important surgical societies, including the American Surgical Association.

Her research record is impressive with NIH and VA Merit Review funding for many years. She is a recognized expert of the effects of radiation on motility of the GI tract. She has shared her knowledge around the country and around the world. She has been Principle and Co-Investigator on many trials, multi-institutional clinical trials, and industry sponsored trials. She has served the NIH, the VA, and many GI and Surgical societies as a scientific reviewer.

With her expertise in Dietetics and GI physiology, it just makes sense that at some point, her practice weighted heavily to diseases of the GI tract, most notably, ulcerative colitis and Crohn's disease. Working with Gordon Telford, David Binion, and the rest of the IBD Gastroenterologists at MCW and elsewhere, she carved out a practice taking on complicated patients from which most would shy away. For years she has been the in-house and regional expert on the surgical management of inflammatory bowel disease. Her patients are fiercely loyal and they trust her skills and judgement completely.

What may not show up on her CV is the fact that she was one of the first few women to finish the General Surgery Residency at MCW, and she was the first full-time woman faculty member in the Department of Surgery at MCW. She has been a fierce advocate for women in surgery, and she has served for years as a role model for our woman residents and faculty. One needs only to attend the graduation ceremony each year to understand what she has meant to the education of our residents. She is always near the top of the list in "thank you" comments from the graduating Chiefs. Dr. Otter-

son has much to be proud of for her time at MCW.

So, what does it mean to be at an institution for forty-four years? It means that there will be a big void left when it is over. It means that there will be thousands of patients missing their surgeon, and their doctor. We will assume the care of these patients, but I am sure that for years they will remind us of what Dr. Otterson did and would do, and how they expect the same type of dedicated and thoughtful care. For a few more years we will hear the residents talking about and thanking Dr. Otterson for educating them on the wards and in the operating room. The role modeling job, particularly when it comes to our women residents and young faculty, will pass to a new set of surgeons, with a pathway already forged. I am sure Dr. Otterson would agree that while she is retiring from MCW and the VAMC, she will always be a surgeon. She can give away her practice, she can give away her research projects, she can give away her administrative tasks, but one does not give away forty-four years of dedication, forty-four years of answering the call to help, forty-four years of trying to do the right thing for patients, and forty-four years of a vocation. Being a surgeon courses through every fiber of our being, and while you can stop, I don't think you can just give that away, and it certainly can never be taken away.

Please join me in congratulating Dr. Otterson, thanking Dr. Otterson, and wishing her a relaxing but stimulating retirement.

In August, the Stanley Cup Trophy visited Froedtert and MCW!



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Introducing Healthcare Philanthropy at Froedtert Hospital and MCW



Liz Montgomery

Director of Development
Office of Institutional Advancement

When patients are grateful for the extraordinary care we provide, they often want to express their gratitude by giving back.

Giving doesn't just create happiness – it also leads to better health. Positive feelings, like those generated when engaged in or recalling a philanthropic event, have far-reaching benefits, including a stronger immune system and a cardiovascular system that is less reactive to stress (Konrath, 2013).

Additionally, people who have suffered significant losses are particularly motivated to help others not only despite their difficult experiences, but precisely because of them. A key task in effective healing is to restore their shattered assumptions of the world (Janoff-Bulman, 1992). Giving is a way people can find meaning and value following a heartbreaking loss.

One year ago, the Office of Institutional Advancement at MCW and the Froedtert Hospital Foundation launched a new grateful patient program, called "Healthcare Philanthropy." Through this exciting initiative, we unlock the healing power of philanthropy that allows our patients to give back to causes near and dear to their hearts and families. This program leads with gratitude and inspires patients to be a part of something bigger than themselves and create a legacy of impact – all while raising essential funds for the Department of Surgery and other areas across our institutions.

It's important to note three key elements of Healthcare Philanthropy:

1. Healthcare Philanthropy is not about a financial transaction, but a natural extension of the clinical experience you and your team are providing to patients. Our philanthropy team is looking to build meaningful relationships with patients who express their gratitude at an extraordinary level.
2. We understand that you may have concerns about the complexities of sharing patient information. We want to assure you that our philanthropy team takes this responsibility very seriously. The Healthcare Philanthropy program has been thoroughly reviewed and approved by our privacy office and legal team and is completely HIPAA compliant. If you have specific concerns, we encourage you to contact Liz Montgomery, who serves as the Department of Surgery's philanthropic liaison.
3. We are not asking you to request gifts from your patients. In-

stead, we are inviting faculty and staff to be our partners in identifying which of your patients demonstrate an extraordinary level of gratitude. Across our institution, 89 clinicians are currently serving as Clinician Champions or allies for the Healthcare Philanthropy program. These clinicians help identify and introduce grateful patients to our philanthropy team, who take the conversation from there. We have found that when a clinician introduces a patient to a philanthropy officer, we can secure a meeting with that patient nearly 40 percent of the time. Without this introduction, it's less than five percent.

Across Froedtert Hospital and MCW, Healthcare Philanthropy has been championed by top institutional leaders, including Dr. Doug Evans and Dr. Roy Silverstein. "Every day, patients thank us for the compassionate, quality care we provide," says Dr. Silverstein. "Healthcare Philanthropy inspires our wonderful patients and their families to make a difference by becoming more deeply engaged in our life-changing research, clinical, and educational missions."

If you are interested in learning more about how you can support Healthcare Philanthropy, please contact Liz Montgomery, at lmontgomery@mcw.edu or 414-955-4473. Our team is excited to hear from you!

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Leading The Way

Division of Cardiothoracic Surgery



Jorge Mascaro, MD, joined the Department of Surgery faculty as a Professor of Surgery in April 2024 and has been appointed as Director of Lung Transplantation at Froedtert/MCW. Dr. Mascaro was born in Chile and studied Medicine at the Universidad de Chile Medical School, graduating with distinction in 1984. He went on to complete a residency in general surgery and in 1990 started residency in Cardiac Surgery in London UK. He returned to Chile in 1993 where he developed a Lung and Heart Transplant Unit. In 2004 he was appointed as the consultant cardiac surgeon at Queen Elizabeth Hospital in Birmingham. He has held leadership positions including Director of Heart and Lung Transplant, Director of Mechanical Circulatory Support and Head of Complex Aortic Services. Dr. Mascaro has been performing advanced cardiac procedures and lung transplantation for nearly 30 years.



Mallory Hunt, MD, joined the Department of Surgery faculty as Assistant Professor of Surgery in August 2024. Dr. Hunt was born and raised in Boston, MA and received her B.A. from Yale University and M.D. from the Perelman School of Medicine at the University of Pennsylvania. She completed her residency and fellowship training in thoracic surgery at the Hospital of the University of Pennsylvania during which time she also received a Masters degree in Translational Research. Her clinical interests include benign and malignant thoracic disease and advanced lung disease/respiratory failure, and her surgical practice includes general thoracic surgery and lung transplantation.

Division of Trauma and Acute Care Surgery



Allyson Hynes, MD joined the Department of Surgery faculty as Assistant Professor of Surgery in September 2024. Dr. Hynes received her medical degree from the University of Nebraska Medical Center before completing her Emergency Medicine residency from St. Vincent Mercy Medical Center. She then completed a two-year Trauma and Surgical Critical Care fellowship at the University of Pennsylvania, where during her second year she served as the Chief Administrative Surgical Critical Care Fellow. Dr. Hynes then served as an Assistant Professor at the University of New Mexico for three years before coming back home to the Midwest. Dr. Hynes is finishing her Master of Science in Clinical Epidemiology through the University of Pennsylvania Perelman School of Medicine.



Allegra Saving, MD joined the Department of Surgery faculty as Assistant Professor of Surgery in September 2024. Dr. Saving received her medical degree from Wayne State University. She earned her undergraduate degree from Marquette University where she graduated magna cum laude and was captain of the women's varsity crew team as a senior. After completing her General Surgical residency at the Medical College of Wisconsin, she has practiced in both Seattle as an associate professor of surgery at the University of Washington and more recently at Norton Healthcare in Louisville, KY. She and her husband, a fellow MCW-trained surgeon, have now made the move back home to Milwaukee.



Riley Westein, MD joined the Department of Surgery faculty as Assistant Professor of Surgery in August 2024. Dr. Westein graduated from Medical College of Wisconsin for both medical school and Emergency Medicine residency. Prior, he received his Bachelor of Science (B.S.) in Microbiology from the University of Minnesota-Twin Cities where he received multiple academic accolades. He subsequently went on to complete his fellowship in Anesthesia Critical Care at MCW in 2024 and joins the Division of Trauma & Acute Care Surgery with a focus on providing care to patients within Froedtert's Transplant Intensive Care Unit.

Division of Pediatric Surgery



Christopher Laird, MD joined the Department of Surgery faculty as Assistant Professor of Surgery in March 2024. Dr. Laird is a distinguished pediatric surgeon with a multifaceted background in both engineering and medicine. He graduated from Johns Hopkins University with degrees in Biomedical Engineering and Mathematics before pursuing his medical degree at the University of Maryland School of Medicine. Dr. Laird completed his General Surgery residency at the University of Maryland Medical Center and R Adams Cowley Shock Trauma Center. He then further specialized in pediatric surgical critical care at Children's Wisconsin and the Medical College of Wisconsin, followed by a Pediatric Surgery Fellowship at Children's Mercy Kansas City. His expertise and passion lie in the surgical rescue of critically ill infants and children, ECMO, and minimally invasive surgery.

Congratulations to the winners of the 2024 Condon-Donagan Research Competition!

Elise Biesboer, MD *Implementing a Post Discharge Care Team to Improve the Care of Gun Violence Survivors*

Monica Seadler, MD *Modulating Fibrinogen After Trauma Prevents Venous Thrombosis and Improves Outcomes*

The Medical College of Wisconsin Department of Surgery Faculty by Specialty

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Amir Ghaferi, MD, MSc, MBA
Matthew Goldblatt, MD
Jon Gould, MD, MBA
Rana Higgins, MD
Andrew Kastenmeier, MD
Tammy Kindel, MD, PhD
Kathleen Lak, MD
Philip Redlich, MD, PhD
Wen Hui Tan, MD

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G. Hossein Almassi, MD
Lucian Durham III, MD, PhD
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Michael Mitchell, MD*
Paul Pearson, MD, PhD
Stefano Schena, MD, PhD
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Katherine Hu, MD (10/24)
Kirk Ludwig, MD
Carrie Peterson, MD, MS*
Timothy Ridolfi, MD, MS

Community Surgery

Marina Affi Koprowski, MD
Marc de Moya, MD
Robb Edwards, MD
Kaizad Machhi, MD
Allegra Saving, MD (9/24)
Eric Sonesson, MD
Mark Timm, MD

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