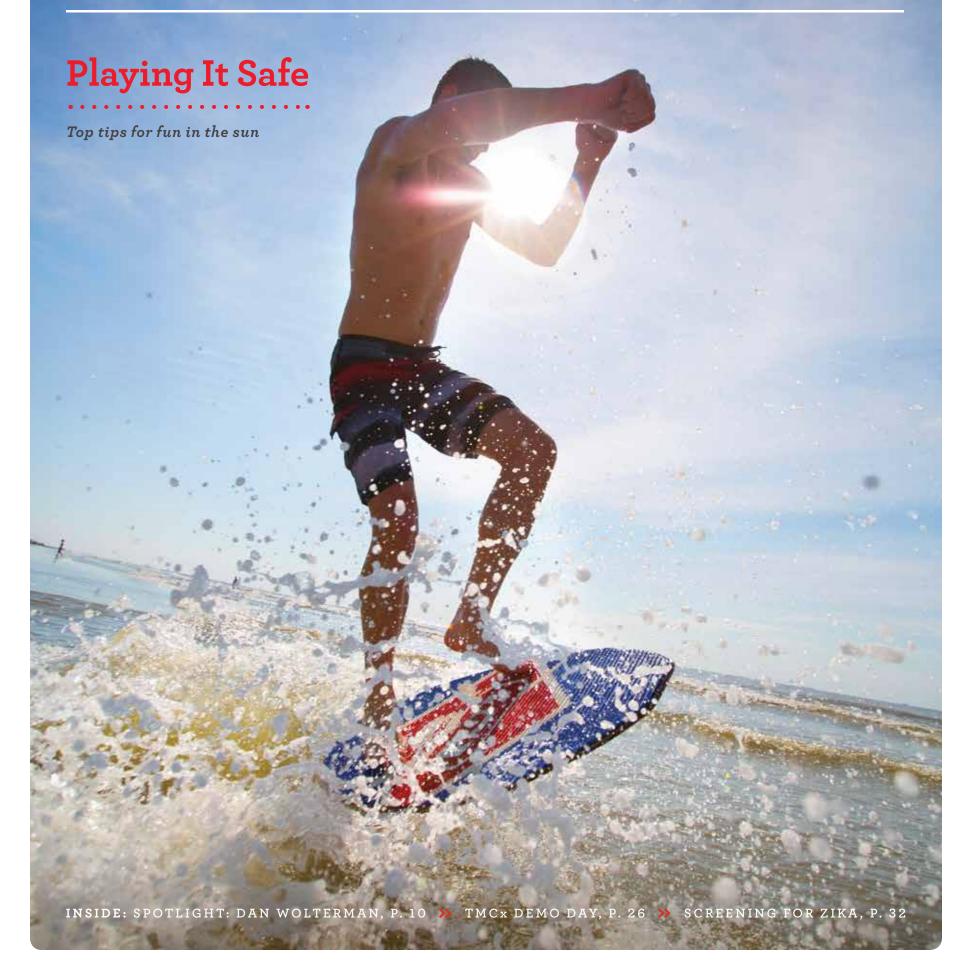
TMC PULSE

THE OFFICIAL NEWS OF THE TEXAS MEDICAL CENTER - VOL. 3 / NO. 6 - JULY 2016







Building a Better Community

The Junior League of Houston, long known for working to provide quality health care for the less fortunate, dedicates thousands of hours of volunteer service to the medical community each year.



Spotlight: Dan Wolterman

The newly retired president and CEO of Memorial Hermann talks about leadership, family, and how he helped create one of the highest-quality health care systems in the nation.



Playing It Safe

Experts from throughout the Texas Medical Center share the best ways to make the most of your summer while keeping your family safe.



Fighting Fatigue

Doctors at MD Anderson's Cancer-Related Fatigue Clinic are helping patients regain their lives and vivacity post cancer treatment.



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A relief effort that started small in the Texas Medical Center in response to the recent earthquake that rocked Ecuador grows far beyond all expectations.

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Twelve TMCx digital health companies closed out their time in the program with final pitches in front of investors, clinicians and TMC member institutions.

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A new clinical trial is allowing
Houston's main provider of blood
donations to test for the Zika virus
and ensure the safety of the local
blood supply.

AT&T FOUNDRY OPENING // p. 5

IN EARLY JUNE, AT&T'S FOUNDRY FOR CONNECTED HEALTH HELD ITS GRAND OPENING INSIDE THE TEXAS MEDICAL CENTER'S INNOVATION INSTITUTE. THE UNIQUE SPACE, WHICH SIMULATES A HOSPITAL ROOM, A NURSES' STATION AND A HOME LIVING SPACE, WILL EXPLORE THE FUTURE OF HOME-BASED HEALTH CARE.

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ON THE COVER: A beachgoer enjoys the surf in Galveston, a top summer destination for Houstonians.

PRESIDENT'S PERSPECTIVE



ROBERT C. ROBBINS, M.D.

President and

Chief Executive Officer,

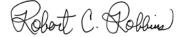
Texas Medical Center

In this month's issue of Pulse, you'll read about the grand opening of the AT&T Foundry for Connected Health, located right here in Houston at the Texas Medical Center's Innovation Institute. The newest of six such centers worldwide, Houston's foundry is a collaborative environment dedicated to fostering new digital health technology, an exciting and growing field with unlimited potential to transform the field of medicine.

Focused on the management and analysis of patient data—be it genomic, diagnostic, phenotypic, environmental or anything in between—digital health care solutions hold the key to future groundbreaking therapies, disease management protocols, personalized medicine approaches and advances in global population health. Even more, harnessing these applications for prevention and behavioral modification measures could mean a future with less chronic illness overall.

Through aggregated electronic medical records, wearables such as activity trackers and smart watches, and a host of other devices embedded with data collection technology, physicians have access to more information than ever before. The key is creating a system for the appropriate and strategic management of this data so that it can be analyzed in a meaningful way, helping providers make decisions with patients about personal health plans and giving scientists and researchers the tools for new insights and discoveries.

In the Texas Medical Center, we have the largest concentration of patients in one site in the world and one of the most diverse sets of patient data in the world. It's an ideal setting for this new frontier, and through partnerships with industry giants like IBM Watson, PricewaterhouseCoopers, Apple, Johnson & Johnson, and now AT&T, I have no doubt that Houston will be the exemplar of how digital health technology will improve human health globally, now and in the future.



TMC PULSE

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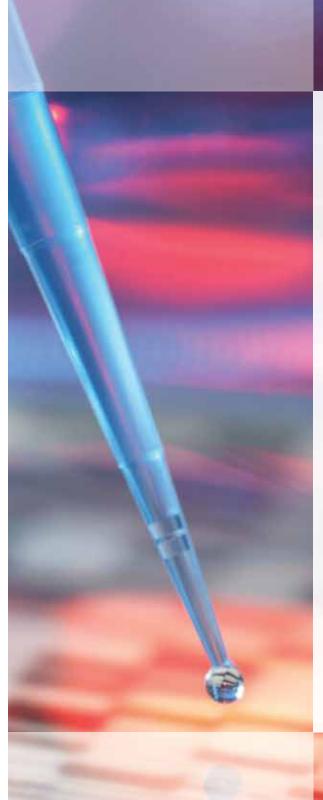
Combining the best aspects of American and European approaches to healthcare, WHR Architects, in association with KHR Arkitekter and Arup International, brought global innovations to win the international design competition for the new Bispebjerg Somatic Hospital in Copenhagen. Using best-in-class healthcare design, the new structure achieves the delicate balance between designing a modern hospital with optimum functionality while preserving the historic legacy of the 100-year old hospital campus – offering patients healing views and access to natural light for a better recovery.

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For an appointment with a Houston Methodist cancer specialist, visit **houstonmethodist.org** or call **713.790.3333**.



Home is Where the Health is

AT&T Foundry's new space on the Texas Medical Center campus will chart a patient's journey from hospital to home

By Christine Hall









The aim for the AT&T Foundry for Connected Health is to be a space of collaboration and problem solving, where the company can help transform health care by connecting the digital ecosystem.

— CHRIS PENROSE Senior Vice President of IoT Solutions for AT&T Then patients are in the hospital connected to various monitors, they are constantly being evaluated by nurses and physicians. Now imagine having that same kind of monitoring, but in your own home.

That's the goal of AT&T's Connected Health Foundry, which opened its doors June 7 in the TMC Innovation Institute. A tour around the space simulates three separate environments: a hospital room, a nurses' station and a home living space.

Researchers using the space will be able to test different methods of connecting a "smart" hospital with care at home so patients get out of the hospital sooner and back into their homes with caregivers.

"I can't think of a better place to be in the vanguard of this innovation around digital health than to have a partnership with AT&T and to have, as the alpha testing ground, the Texas Medical Center," said Robert C. Robbins, M.D., president and CEO of the Texas Medical Center. "The future is really moving fast, being transformed, and digital health is going to be the future of health. We are in the center of what is starting here and rapidly progressing."

Craig Lee, who has been the Internet of Things AT&T Foundry director in Plano, Texas, for three years, will also lead the AT&T Foundry in Houston, but locally, it will be staffed by three people, including Nadia Morris, head of innovation, who will manage projects, and two biomedical engineers—one with hardware experience and one on the software end.

Combined with the six engineers in Plano, Lee sees both Foundries as one cohesive team.

Clockwise from left: Chris Penrose, senior vice president of IoT Solutions for AT&T; Houston Mayor Sylvester Turner;
Nadia Morris, head of innovation at the AT&T Foundry for Connected Health; and a fireside chat between Craig Lee,
director of the AT&T Foundry for Connected Health; Ralph de la Vega, vice chairman of AT&T Inc. and CEO of AT&T Business
Solutions and AT&T International LLC; and Robert C. Robbins, M.D., president and CEO of the Texas Medical Center.

the AT&T FOUNDRY for CONNECTED HEALTH is divided into

THREE SPACES



CLINICAL

A recreation of the connected hospital environment



HOME

For testing the elements related to home monitoring after a patient is discharged from the hospital



NURSES' STATION

The bridge between patient care in the hospital and the home, where caregivers will have remote access to meaningful patient data in real-time.



Craig Lee tests out the bed in the bedroom area of the home section.

"The Texas Medical Center enables us to integrate and participate with the cohorts as well as gives us a place where we can bring in our customers, startups and other folks with ideas," he said. "We are also excited about being a part of TMCx, where it gives us a



From left, Robert C. Robbins, M.D., president and CEO of the Texas Medical Center; Craig Lee, director of the AT&T Foundry in Houston; Ralph de la Vega, vice chairman of AT&T Inc. and CEO of AT&T Business Solutions and AT&T International LLC; and Igal Elbaz, vice president of ecosystem and innovation for AT&T Services Inc., cut the ribbon to officially open the AT&T Foundry for Connected Health.

ready pool of talent for our own people going into the health care space, and a lot of synergies that we can help leverage and foster for additional innovation."

The digital health market is growing in every way, from startups to technology opportunities to investments. German statistics company Statista estimates that by 2020, this sector will be valued at some \$233 billion, driven mainly by mobile health.

Other companies have joined AT&T in this market. Earlier in 2016, Finnish company Nokia, best known for its cell phones, announced it was acquiring Withings, a French startup that makes wearables and other health monitors. Other additions to the digital health sector have included Verizon's health care technology enterprise business and Qualcomm's "Qualcomm Life" connected care model.

AT&T's approach to digital health is connecting things via the strong and robust Internet of Things (IoT), which is the application of technology to objects like wearable devices, homes and cars, so that data can be collected and exchanged. The company is putting that data to work in ways that create value for the person using the device.

Health care is one of the last fields to join IoT, but it is very strategic, growing and important, said Igal Elbaz, vice president of ecosystem and innovation for AT&T Services Inc.

AT&T intends to bring its connectivity, experience and the ability to build businesses, what Elbaz calls "a pure AT&T approach," to the field.





Left: Chris Penrose sits among the clinical section, which includes a hospital bed and monitoring equipment. Right: Igal Elbaz in the living room section of the home area.

When the company decided to enter the health care market, collaborating with the Texas Medical Center to put the digital health Foundry within the TMC Innovation Institute made sense from a timing, location and collaboration perspective, Elbaz said.

Why?

"That's easy—it's the largest medical center in the world and very innovative from a research and health perspective," he added. "Also, and just as important, if you start building a solution following a vertical, you want to be close to the people who might use that solution. The Texas Medical Center is close to those potential users."

In addition, the Texas Medical Center has the TMCx Accelerator, which AT&T thought fit its goal of working with startups and enterprises like Johnson & Johnson Innovation's JLABS @ TMC.

"All that collaboration between enterprises, disrupters, designers and hospitals makes complete sense for us to choose Texas Medical Center as the place to do all of this," Elbaz added.

"The aim for the AT&T Foundry for Connected Health is to be a space of collaboration and problem solving, where the company can help transform health care by connecting the digital ecosystem," said Chris Penrose, senior vice president of IoT solutions for AT&T.

In addition, he sees the Foundry driving exciting innovations that help fill gaps in the industry, from

66 What TMC has done is encouraging and inspiring, and I really believe this is the future of collaboration. 99

- IGAL ELBAZ

Vice President of Ecosystem and Innovation for AT&T Services Inc.

hospital to home, and help providers take better care of their patients.

"Just being housed on Texas Medical Center's campus will likely spark tremendous collaboration," Penrose said. "TMC has cutting-edge research and resources, including doctors, hospitals, schools and research institutions, covering nearly every aspect of the medical industry.

"We really admire TMC's model for the Innovation Institute, using their research and resources together with key players in the market to guide innovators. We look forward to bringing innovators into our Foundry and using our skills, platforms and resources to scale up and bring new ideas to market."

Including the new digital health Foundry, AT&T has six innovation centers. All have the same goal of collaborative engineering, small teams, rapid prototyping, cutting-edge solutions and working with startups, Elbaz explained. What sets the Houston Foundry apart is that it is close to the customer, in this case hospitals, and work will be done around that vertical domain of digital health, he added.

"AT&T would like to bring ideas to market within

nine to 12 months. Five years ago, the average for doing the same thing was between 18 to 24 months," he said. "The world is moving faster around us. We want to work on ideation for 12 weeks, where in that time we will create a prototype and hand it over to the company."

That also means that within a year after opening the Foundry in Houston, AT&T expects to be well-established in terms of projects, including extending the perimeters of hospitals, mobile experience, nursing and aging, Elbaz said. It would also like to have evaluated the local venture capital ecosystem, have a good understanding of what is going on and built relationships with hospitals.

"We are really excited to be in the Texas Medical Center," Elbaz said. "What TMC has done is encouraging and inspiring, and I really believe this is the future of collaboration. This is how business will be conducted over time—really hands-on collaboration between enterprise, third parties and customers. I look forward to this."

Building a Better Community

Since its inception, the Junior League of Houston has provided medical care to the underserved and promoted the growth of the Texas Medical Center

BY BRITNI N. RILEY



A Junior League of Houston volunteer delivers arts and crafts to Texas Children's Hospital patients.

For nearly a century, the women of the Junior League of Houston have been an integral part of the growth and development of the city of Houston. With the goal of creating change in the city through impactful volunteerism, the organization has been on the forefront of building the city as it is today.

The Junior League of Houston was started in 1925 by 12 civic-minded women who saw a need for a well-baby clinic for the underserved in the community. As mothers themselves, the founders realized the importance of providing quality health care for new mothers and their children who would otherwise not receive it.

"The Junior League Children's Health Clinic was the first of many community projects started by the Junior League of Houston," said Junior League Houston President Shannon Wiesedeppe. "At the time, Junior League Provisionals were required to work in the clinic as part of their training."

By 1927, the Junior League of Houston operated the Junior League Children's Health Clinic in the First National Bank Building, providing health care services to underprivileged children of all ages. Through this clinic, the League began working with Hermann Hospital (now Memorial Hermann-Texas Medical Center), which would begin a partnership with the medical community of Houston that still exists today. When the

Texas Medical Center opened in 1945, Junior League members were some of its first volunteers.

Through their partnership with Hermann Hospital, the Junior League clinic moved to the medical center Dec. 1, 1944. The clinic was moved to the outpatient department of Hermann Hospital and renamed the Junior League Children's Health Clinic of Hermann Hospital Outpatient Department and served as a training ground for medical students at Baylor College of Medicine. In addition to assisting in the clinic, in 1945, League volunteers also began a program to assist patients during their stay in the hospital. This type of patient interaction with League volunteers continues

to this day as part of the League's Community Program.

Before the doors of Texas Children's Hospital opened in 1954, the Junior League had already begun providing services for the hospital. The organization opened the Junior League Diagnostic Clinic in the outpatient department at Texas Children's Hospital, which included 11 highly specialized clinics.

"Even before we opened our hospital, the Junior League had formed relationships with our founders at Texas Children's," said Paige Schulz, director of Volunteer Services at Texas Children's. "For more than 60 years, the League volunteers have been providing high-quality service to our patients,

which has made a huge impact on our hospital and the community as a whole."

As the landscape of Houston continued to grow and change, the Junior League grew with it. In 1974, the League began working with the Baylor Teen Clinic to help new mothers develop child-rearing skills.

"We have loved working with the women of the Junior League of Houston because they are great role models for our patients," said Peggy B. Smith, Ph.D., director of the Baylor Teen Clinic. "They have been very successful in raising their children and they can talk to our patients from their hearts."

Volunteers support new teen mothers by visiting their bedsides and delivering prepared information regarding childcare, parenting, family planning and nutrition. Phone outreach volunteers are paired with newly pregnant teens and teen moms who need additional support and encouragement. These volunteers call the teen mothers weekly throughout the year through a program called "Best Friends" and provide funding for the clinic.

"The women of the Junior League are very foresighted to look at the sorts of things that are demanded of our community today, but are not always easily accessible," Smith said. "They have been very gracious and generous in providing us funding for things such as car seats for our new moms."

In an effort to improve immunization rates in the city and to find a permanent medical home for the uninsured and underinsured populations, the Junior League donated the SuperKids Pediatric Mobile Clinic in 2000. For the first two years, the League supported all of the clinic's operating expenses. The bus travels to patients

who are unable to travel to a doctor's office for regular checkups and is a collaborative effort with Texas Children's Hospital, Baylor College of Medicine, Houston Independent School District, the City of Houston and Harris County Hospital District.

"The SuperKids Pediatric Mobile Clinic allows us to reach patients in the community who are unable to travel to our hospital or to Texas Children's Pediatrics practices," Schulz said. "The mobile clinic helps us provide immunizations and back-to-school checkups, and it has been revolutionary for us in terms of the way we care for patients in the community."

Junior League of Houston members volunteer at organizations throughout the medical center and provide a variety of different services for the hospitals. At Texas Children's, volunteers engage in play therapy with patients and their siblings in the Junior League Health Care Clinic, the Abercrombie Playroom, Library, Cancer Center Clinic and the Renal Center. Volunteers also work in Radio Lollipop, present puppet shows, and prepare and make crafts and dolls to educate and comfort young patients. At the Pavilion for Women, volunteers serve as Resource Ambassadors, greeting and assisting patients, visitors and staff in a friendly manner at the information desk. Volunteers also serve as NICU Sibling Playroom Volunteers, providing normalized play experiences for siblings of infants as well as caregivers of patients admitted to the NICU.

"Volunteering through the Junior League is a great way to give back to the community," said Junior League member Teri Mesquita. "If we can just spend 30 seconds helping these kids forget about why they are here and bring



Junior League of Houston President Shannon Wiesedeppe

them joy through stickers and coloring books, then we have done our job."

At Memorial Hermann-Texas Medical Center, Junior League volunteers provide emotional and social support for patients and families. They serve in a wide variety of positions, including Play Pals, NICU or Pedi-ER waiting rooms, information desk attendants and patient/visitor escorts. At Children's Memorial Hermann Hospital, volunteers entertain patients through arts and crafts, puppet shows, games and puzzles in the play rooms, teen rooms and other children's areas. At Camp Janus, volunteers serve as counselors providing a traditional summer camp experience for pediatric burn patients ages five to 18.

"I strongly believe that volunteers are necessary because they serve as the non-clinical face in an incredibly clinical environment, and our patients know that they are here out of the goodness and kindness of their hearts," said Kristen Wilkerson, manager

of Volunteer Services at Memorial Hermann-TMC.

In the past year, the Junior League of Houston provided \$2 million in volunteer time and support to 38 community projects around the city of Houston. In addition, the League's community outreach efforts include Community Assistance Grants, Emergency and Resource Contingency Grants, Community Collaborations and Outside Board Representatives. They continue to build the city of Houston through volunteerism and outreach to all areas of the community.

"The League has been a part of the growth and development of Houston, as well as those members who have had the opportunity to be trained and mentored through their association with the League," Wiesedeppe said. "I am so honored to count myself as one of over 5,300 members who continue to fulfill the League's mission and do my part to build well-being in our community."

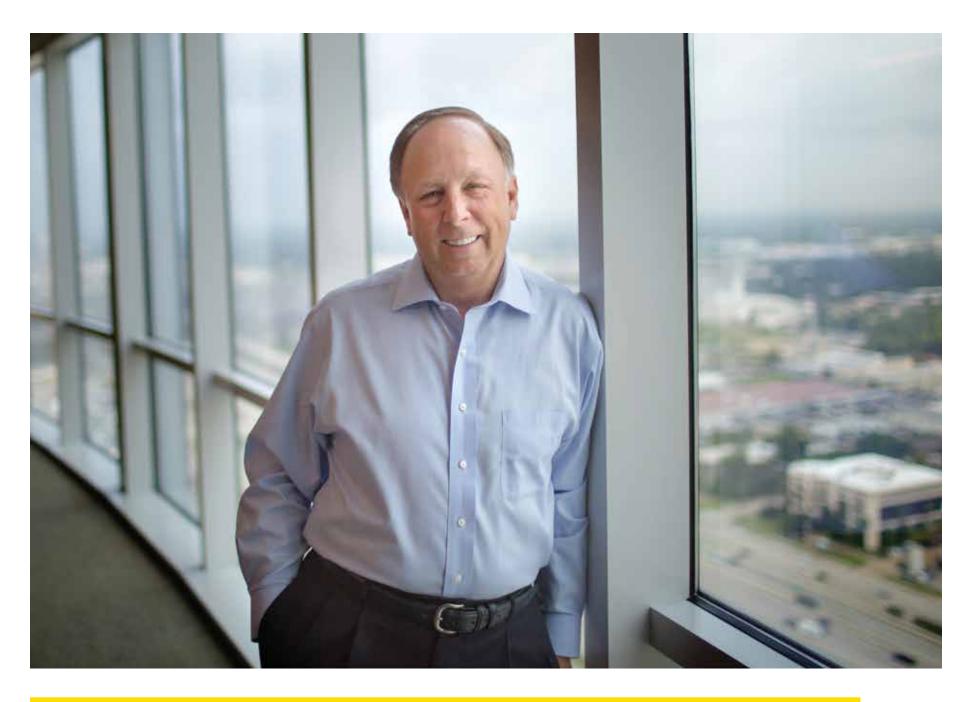
I strongly believe that volunteers are necessary because they serve as the non-clinical face in an incredibly clinical environment.

— KRISTEN WILKERSON Manager of Volunteer Services at Memorial Hermann-Texas Medical Center





TMC SPOTLIGHT



DAN WOLTERMAN, PRESIDENT AND CEO OF MEMORIAL HERMANN FROM 2002 TO 2016, SAT DOWN WITH WILLIAM F. McKEON, EXECUTIVE VICE PRESIDENT AND CHIEF STRATEGY AND OPERATING OFFICER OF THE TEXAS MEDICAL CENTER, TO DISCUSS THE IMPORTANCE OF EVIDENCE-BASED PRACTICE, HEALTH CARE FOR THE UNDERSERVED, AND HOW HE PLANS TO SPEND HIS RETIREMENT.

Let's start from the beginning. What brought you to Memorial Hermann?

A It was by circumstance, actually. I had been in Houston since '92 and was responsible for the Sisters of Charity of the Incarnate Word Health Care System of Houston, which was a large, international health system with facilities throughout the U.S. and in Ireland. Their headquarters were in Houston and they owned St. Joseph's Hospital at the time, as well as a number of other hospitals in Texas. I had just finished merging that system with the San Antonio Catholic system to form an organization called CHRISTUS in 1999. After the merger, the leadership decided to relocate the headquarters to a neutral city that wasn't home to either of the congregations, so they picked

Dallas. The move would require executives to either relocate to Dallas or be away from family during the work week to work out of the Dallas office. I didn't want to put my family through either option, so I decided to leave CHRISTUS after the conclusion of the merger.

My desire was to stay in Houston for one more year so my son could reach a certain age where it would have been easier to move him to a different school. By that time, about a year and a half had passed since the Memorial Hermann merger came together and the new organization was struggling a little bit with operations, strategy and integration. Dan Wilford, CEO of Memorial Hermann at the time, asked if I would come and assist him and the System. I said I would be delighted to join Memorial Hermann, but

that my tenure would likely be short-term. At the time, I thought I would go back to running national health systems. That was 17 years ago.

The reason I was so attracted to Memorial Hermann was that I had watched and observed it over the years, and I held the System in very high regard for their adherence to their mission and values. They always took good care of all people, regardless of their ability to pay. From a values standpoint, they ran first-class facilities. I really liked their leadership from Dan Wilford to Ken Wine, on down the line. It was something that was attractive to me. So once they approached me, it didn't take me very long to consider it. I liked the idea of seeing what Memorial Hermann was really like from the inside.

Q | When you took the helm in 2002, did you ever imagine that you would build Memorial Hermann into one of the largest health care systems in Texas?

A No, I did not set out for that kind of distinction. The vision was to really turn a relatively struggling system in the right direction with a singular focus. The focus was to be the best health system in the United States from a quality, safety and service standpoint. My belief, and what I sold this organization on, is that if we could get quality and patient safety right and tie that to outstanding customer service, then the patients and physicians will seek us out and the business side will take care of itself. That was the general philosophy in 2002. We were relatively small. We were, at best, average on quality and patient satisfaction, and we didn't have a strong balance sheet. It was a challenge. What we focused on was stabilizing the System, creating a new culture where people felt they could be successful and setting a new vision that Memorial Hermann would be a preeminent health system. We knew this would take a while, but that's what we set out to do.

Q You've always been known to be creative, but you're also known for executing a vision. When I think about the number of programs Memorial Hermann has implemented over the years, specifically in regards to issues of quality, is timing a factor of success?

A That's a good question. Yes, it's all about timing. In the late 1990s, a report came out called, 'To Err is Human.' It really came down hard on the hospital industry about causing preventable harm, particularly death, to patients. The bulk of the industry just discarded it by saying, 'Oh, it's not true. Our patients are sicker and that's a factor in our mortality rates.' They rationalized it away. I read that study and re-read it, and it was disturbing to me. Here are people—our neighbors, our family—who likely know very little about health care services and put their trust in us. Yet, according to this article, the health system was failing them. It didn't sit well

As an industry, we were not providing a reliable, high-quality product to our patients. I became a believer of the study and article and said, 'No, we as an industry can do better. We must do better. Why not establish Memorial Hermann as a model?' The problem was, in 1999, when I joined the organization, and even in 2002, our System was not ready for the change. It's a significant change. But we did it.

As we started to roll out the execution plan there was some expected resistance. With any change process, you need to find a few people who share your vision and beliefs and use them to assist in the change management process. We identified physicians and employees who had the same passion for safe, reliable care and we invested in their education; we brought them into our internal teams, developed them through leadership programs, and then had them take that back to the rest of the clinical and administrative staff.

Over time, the culture changed and the single focus on high reliability care set solid roots in our System.

It wasn't until we were able to show some progress that things really turned around.

We had great success in the early-to-mid-2000s, and we thought we were pretty good at quality and patient safety. We were winning national awards. Then we had two safety events, and I remember sitting back and saying, 'Man, we're not as good as we thought we were. How did this occur?' When you peeled that onion back, it was basically because we hadn't changed the fundamental culture of care in our System.

It's natural for employees and physicians to revert back to old habits of taking care of patients, particularly when they have a very heavy workload. We decided there must be a better way. That is when we decided to get out of the parochialism of the health care industry, which only looks inside itself for solutions to problems, and said, 'Other industries have figured out a way to have zero harm. What can we learn from them?'

Q | So it was ultimately the realization that you can't have variability if you want excellence.

A Yes. The commercial airline industry was one of the industries we wanted to study. I grew up in that era—'60s and '70s. Planes were going down all the time. I remember three major crashes when I grew up in Cincinnati. It was tough. We also studied the military. How can they take nuclear-powered aircraft carriers and submarines and never have a problem? They're producing bombs in the bottom of the aircraft carrier, and they've got young soldiers assembling them, and they never have a problem. What do they do? What about nuclear subs? What about nuclear energy? We studied all of those industries and then brought some of our findings home. Today, we have Red Rules that clinical teams follow before every single procedure; rules that can never be violated.

To address the cultural change that needed to happen to ensure high reliability and a high-quality care environment, I went to the Board and asked for an additional \$28 million in the budget. I wanted to remove people from the floor for one week of culture training in this new world of high reliability, and I needed some dollars to get the clinical teams trained. Once we went down that road, it's just been a pretty linear 'up.' We're not perfect today, but I'm proud to say that we are well on our way to becoming a high-reliability organization. According to The Joint Commission, we are considered among the best in the country in terms of preventing patient harm. We go months and quarters, and in some locations years, without a single event in our hospitals. It's a cultural change and people take it seriously. When we do have an event, we ask, 'What can we learn from it?' We look into what was the real cause of the problem. We take it seriously and make sure that it doesn't happen again. Every event that may have caused serious harm is also reviewed in the Boardroom. We don't hide anything; we practice full transparency.

That's always been my motto: Surround yourself with the best talent possible, give them your expectations and a vision, and get out of their way.

DAN WOLTERMAN

President and CEO
Memorial Hermann

2002-2016

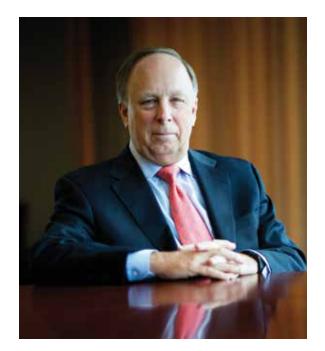
WOLTERMAN WORKED

895 Weeks or 6,265 Days

memorial hermann Then & Now

Number of Hospitals	10	14
Ambulatory Centers	1	80+
Patient Beds	2,672	3,803
ED Visits	337,010	564,052
Admissions	126,112	154,033
Outpatient Surgeries	49,930	131,782
Deliveries	18,885	24,850
Employees	10,861	24,108
MHMG Employed Physicians	0	200
Health Center for Schools	6	10
Dental Vans	2	3
Neighborhood Health Centers	0	3
Convenient Care Cente	rs O	9

Source: Memorial Hermann



| How would you describe your leadership style?

A I think the first thing most people would say is that I am a visionary, and a very good strategic thinker. I'm a focused individual—that's where the execution comes in. I believe leadership is a team game. Once we make a decision, though, we get very focused on the execution side. The other thing people would probably say is 'intense.' I'm a pretty intense individual. There's a strong drive in me to go get things done and be successful.

They also will say that I'm pretty even-keeled and tempered. You will never hear me yell. You won't hear me scream. But, the team will know when I'm not happy with them. I hope they would also say that I treated them well and fairly, and that I allowed them the latitude to do their jobs. That's always been my motto: Surround yourself with the best talent possible, give them your expectations and a vision, and get out of their way.

One year, you wrote off \$1.3 billion in gross charges for indigent care. Can you talk about your views on health policy and providing health care to the underserved?

A | My passion for the underserved is why I've spent my whole career in nonprofit health care. It is why, once I decided this was going to be my professional field, I wanted to be a part of something that was very mission-driven, very mission-oriented.

Memorial Hermann has to be the most efficient operator so that there are resources available to cover all the free care that we have an obligation to provide in the community. That's one of the attractions of Memorial Hermann. It has 109 years of serving this community with an emphasis on serving everyone.

It became a passion of mine—that the System provide high-quality, safe services to the community, take care of the people in need, and still have strong operating margins. The first thing we did was say that, to sustain the organization, we had to get a better balance sheet and operate more effectively. Those first three years, besides focusing on quality, we really

66 My passion for the underserved is why I've spent my whole career in nonprofit health care. 99

focused on how to become better, stronger operators. Our ratios today are still equal to a lot of what you see in the very best for-profits, from both a salary and wage or supply standpoint. We are very, very efficient. That's not because it's a profit motive. It's actually the opposite. We need to be efficient to take care of the large indigent care commitment that we feel is our responsibility. That's where we come from.

Q Looking back on your career, what is your proudest accomplishment?

A To be honest, you don't come into leadership to seek out awards. However, it's always nice to be recognized. Anybody who says it's not isn't being truthful. The one award that sticks out the most is when I won the Father of the Year award, because being a good father is what is most important to me. It's great to come to work every day. I'm stimulated to go to work every day and do well there, but being able to be there for your family, raise your family the right way, and be appreciated for that—that's the one award that stands out. That is the only time I was brought to tears with an award. You're sitting up there and you're watching these videos. You're seeing pictures of your kids growing up, they're talking on the video about you and my son's introducing me in front of the audience. That meant a lot to me.

From a career standpoint, what meant the most was the National Quality Forum award. In 2009, Memorial Hermann was recognized as the country's foremost system when it came to quality and patient safety. That's what our System set out to do. All we heard about in the early years of that award was Johns Hopkins or the Mayo Clinic. We'd say, 'Wouldn't it be nice if a community-based health system that was not a big name in this country rose up the ranks and won an evidence-based, quantitative award?' That was what we set out to do and when Memorial Hermann finally achieved it that was a major moment for our System.

Q Let's talk about golf for a minute. Now that you're retired, any plans to play professionally with the Senior Tour?

A No—I learned a long time ago that you can be better than a lot of people at anything in life, including sports, but there are a whole bunch of people who are a heck of a lot better than you. It would be nice, but the reality is, I'm not good enough. I do want to play in national and local senior competitive events. It will be nice to get out, and I love competition. I love pushing myself to see if I can get better, but I'm also a realist.

Q What is next for you post-retirement?

A Nothing is set in stone, and the honest answer right now is that I don't know exactly what I will be doing in this next phase of my life. The only plan I have is to just enjoy life. I've worked since I was 12 years old. I'm used to having income come in.

I'm used to being busy. I don't know how this retirement stuff will settle with me. People say, 'Are you going to ever come back?' I can't say no, but I can't say yes. I have to be true to myself. I'll see what a year, a year and a half does. If I'm bored and things aren't going the way I want, then yeah, I could come back. I'm young, I'm healthy.

I think your plate will be as full as you want it

A | That would be nice. I want to make sure I enjoy life. Part of the reason for retiring now is my family. I enjoy coming to work, but I'm the oldest of nine children. We grew up with meager means. We were a very tight family, and I am still very close with my family who are mostly back in the Cincinnati area. I moved away from Ohio in 1979 with the intent to come back, but my career never provided me an opportunity to go back home. The fourth-oldest sibling, my sister, died two years ago. A rare cancer took her, and I look back and say, 'I really didn't get to know her very well through her adult life because I was hardly ever around.'

When you are in your early career you are able to return home more often, but when your children start growing up and they have their own lives in their city and you have your work life, there is not much available time to get back to your family in Cincinnati. I began to reflect on the valuable time I have lost with my siblings and my parents. Retirement provides me the freedom to get back to Ohio and spend more time with my family while I still have the opportunity. You will see me spending more time back in the Cincinnati area doing things with my parents and my siblings, just catching up on many, many lost years.

You will be greatly missed here in the Texas Medical Center. You're loved and adored by many, and have had such a profound impact on patients and their families. There are so many people who are proud to have had you here in Houston for this period of time, so thank you.

A Thank you for those kind comments. It means a lot, because I've always felt that adult-to-adult relationships are the best. If you feel something, say it, but say it nicely. Put your opinions out there. I think most know I'm pretty straightforward and blunt. Sometimes people don't like direct communication and get offended, so it's hard to balance my leadership style and still be liked by people. I always strive to treat people with respect and dignity.

Through the years, my communication style has worked. I have a few enemies out there, but that's OK. If you don't, you're not pushing hard enough. I think what the Texas Medical Center is doing now is great a much-needed, progressive vision and a willingness to complement what the members and institutions bring to the table with innovation, development and go-to-market kind of concepts. Keep pushing.



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PLAYING IT SAFE



From water safety to sunscreen application, TMC experts share how you can minimize summertime risks and enjoy all the season has to offer

ummer is a time of fun and freedom. Homework is finished, school is out, families pack up their cars for a vacation or a day at the beach. As the days grow longer and warmer, outdoor play is on everyone's mind—kids and adults alike. Life can change in an instant, turning fun in the sun into a nightmare. But with simple precautions, families can ensure they are doing their best to enjoy the season to the fullest—and safest—extent possible.

It's a hot day in Houston. Several families gather at a neighborhood pool. Laughter and shrieks of excitement from the kids fill the hazy summer air, as parents stand by chatting about the end of the school year and comparing the latest silly cellphone pictures of their children. Suddenly, one of the older kids calls out, "Wait, where is Emily?"

One of the most common summertime activities is spending time in the water. Wading, swimming or boating; pool, river or ocean; especially in hot climates like Houston, anywhere cool and wet is prime relaxation real estate. While water activities are common, drowning becomes a significant danger, particularly for children.

"Drowning is always heart-wrenching," said Sam Prater, M.D., medical director of emergency services at Memorial Hermann-Texas Medical Center and an emergency medicine physician at McGovern Medical School at The University of Texas Health Science Center at Houston. "In terms of injury-related causes of death in children, it's the number one cause for kids under five."

Drowning can occur for a number of reasons:

1. Lack of supervision.

"There is no substitute for active supervision," Prater said, "especially in today's world, when we're really tied into our phones and get distracted easily."

For any adult responsible for children, this means being 100 percent engaged in what is going on in the water and within arm's reach of young swimmers. It doesn't take much water or time for a small child to drown.

"One strategy when you have several adults is to always have one person specifically assigned to watch the kids," Prater said. "For 15 minutes, he's totally engaged, not distracted and 100 percent responsible. Then he gets a break, because you can't do it forever, and someone else takes over."

Kristen Beckworth, manager of Texas Children's Hospital's injury prevention team, calls this the "water watcher" system, and suggests providing something like a badge or a hat to ensure the designated adult is clearly identified at all times.

"I'm watching the kids in the water, I know how many went in, and I can visually see that they're still in the water and safe," Beckworth said. "As water watcher, I'm not drinking, I'm not texting, reading a magazine or a book, these are all distractions. Usually when a drowning occurs, adults are present, but no one was actively watching the children in the water. A water watcher at a pool gathering assumes responsibility for a set period of time until it's assigned to the next adult."

2. Using unsafe swimming equipment and apparel.

"Some parents get lulled into a sense of safety with floating play toys, noodles, things like that," Prater said. "If the child can't swim, that is not a substitute for active supervision or a life jacket—it doesn't take much for a kid to let go of that and sink beneath the water."

Even while at the pool, and particularly for young children, or people of all ages who can't swim, life jackets are encouraged.

"All non-swimmers and people near open bodies of water—lakes, rivers, or the ocean—should wear a U.S. Coast Guard-approved life jacket," Beckworth said. "Water wings and inflatable toys are not sufficient. Look for a label that provides a USCG Approval Number."

That label clarifies that the product has been approved by the U.S. Coast Guard as being made of naturally buoyant material, so it will float in water. It's an officially designated lifesaving device, versus products like water wings that are filled with air. All it takes is for some air to seep out, for it to pop or for it to slip off the child's arms to be no longer effective.

3. Reckless boating practices.

"Life jackets are also crucial for boats, kayaks and canoes," Prater said. "Whether you're on a boat, jet skis or getting towed behind a boat on a raft, you should have a life jacket and you should have it on."

While this rule is actually a law in Texas for children under 13, adults are also strongly encouraged to wear life jackets while boating, regardless of how good they are at swimming.

"If you hit your head or are thrown overboard, you won't be able to grab a life jacket and put it on," Beckworth said. "Even if you're a great swimmer, if you're unconscious or struggling for some reason, it will save your life."

Additionally, anyone operating a boat should take an approved boater's education course. These are offered by a variety of different outlets. To find an officially state-approved course, visit the Texas Parks & Wildlife Department's website.





4. Gaining access to water unexpectedly.

"If there is a pool in the home and you're leaving your child there, how is that pool guarded?" Beckworth said. "Is there fencing that surrounds the pool? Are there alarms on windows and doors that keep kids from getting outside unnoticed, or notify you if a door or window opens?"

These questions are part of a larger campaign Texas Children's is holding called "The Big ASK."

"One of the concerns when children are out of school and parents are working, is parents have to find alternative childcare," Beckworth said. "We're trying to encourage parents to ask those really important questions about where their kids are going to be playing and staying while they are at work."

A mom has just buckled her child into his car seat after a lengthy trip to the grocery store when she realizes that somehow, among the dozens of items purchased, she forgot an ingredient she needs to make dinner. Taking her son back into the store seems like an exhausting prospect, so she considers, "Maybe I can just run in real quick. It's not that hot, and it'll only be a few minutes..."

Every parent has been in a situation where they just need that one item, and getting a child out of and back into a car seat will make the errand twice as long. Leaving a child alone in a car for longer than five minutes in the state of Texas, however, is illegal—with good reason. The National Highway Traffic Safety Administration says when temperatures are in the low 80s, the temperature inside a parked vehicle can reach deadly levels in just 10 minutes. This can be especially catastrophic for children, whose body temperature can increase three to five times as fast as an adult.

"It doesn't take very long for kids to have really rapid rises in their body temperature because they don't dissipate heat as well as adults do," Prater said. "It's never acceptable to leave anyone who can't care for themselves alone in a closed, parked vehicle. Whether it's someone who is elderly, or a small child, or your pet for that matter."

Occasionally, a child is unintentionally left in the car. Something as simple as a change in routine, a different parent dropping the child off at daycare, for example, can result in disaster. Especially now that car seats have children facing the rear of the car for longer than ever, forgetting a child in the car is a real possibility for even the most attentive parents.

"Put something in the backseat where the car seat is—your diaper bag, your purse, your cellphone—something that you're going to need at the next destination," Beckworth said. "When you get out, you're forced to go to the backseat, and it gives you an opportunity to make sure there's not a child in the car seat."

Other precautions include setting an alarm at a certain time every morning to check that a child has been safely delivered to daycare, or making an arrangement with daycare providers for them to call if a child hasn't arrived by a certain time.

Additionally, if you're going about your day and happen to see a child left alone in a car, don't hesitate to call for help.

"Call 911, stay with the vehicle, and the 911 communicators are trained to help you know what to look for to determine if that child is in enough distress that you need to do something or you can wait until help arrives," Beckworth said.

After a couple hours of enjoying a day at the beach, a dad surveys his children playing in the sand and surf, thinking it might be time to reapply sunscreen. But some large clouds have rolled in, and as he looks at the sky he thinks, "It's not even sunny out anymore. I can wait a little longer, they won't get burned."

"There are two types of rays: the UVB rays give you sunburn and the UVA rays tan you, but the UVA rays also go deeper and cause wrinkling and brown spots and aging of skin," said Carol Drucker, M.D., a professor of dermatology at The University of Texas MD Anderson Cancer Center. "The UVA are consistent throughout the day. They're just as strong in the morning as they are at noon and the afternoon."

This means it's important to apply broad spectrum sunscreen with a sun protection factor, or SPF, of 30 or higher at all times of day and in all types of weather.

"Broad spectrum indicates that the sunscreen blocks both UVA and UVB rays," said Raegan Hunt, M.D., chief of pediatric dermatology at Texas Children's and assistant professor of dermatology and pediatrics at Baylor College of Medicine. "SPF 30 blocks approximately 97 percent of UV rays if applied appropriately. Higher SPF sunscreens block a bit more UV light, but no sunscreen blocks 100 percent."

66 There is no substitute for lack of supervision, especially in today's world, when we're really tied into our phones and get distracted easily.

- SAM PRATER, M.D.

Medical Director of Emergency Services at Memorial Hermann-Texas Medical Center and Emergency Medicine Physician at McGovern Medical School at The University of Texas Health Science Center

















66 The rule of thumb is that to cover your body, you should use about a shot glass of sunscreen. 9 9

- CAROL DRUCKER, M.D.

Professor of Dermatology at The University of Texas MD Anderson Cancer Center

Ensuring you cover all exposed parts of the body is essential for full protection. Commonly neglected areas are the ears, the back of the neck, the back of the hands and any exposed scalp. Furthermore, studies by the Centers for Disease Control and Prevention (CDC) have shown that even when people apply sunscreen, most don't apply enough.

"The rule of thumb is that to cover your body, you should use about a shot glass of sunscreen," Drucker said.

Additionally, sunscreen should be applied 30 minutes before going out into the sun and reapplied every two hours, whether it's cloudy or sunny. Sun exposure can raise your risk of skin cancer, and it has a cumulative effect, so even small amounts of unprotected exposure have consequences.

"For 10 minutes a day, going from your house to the car or your car into a building, 10 minutes a day adds up to over an hour a week," Drucker said. "It is important to put sunscreen on every morning."

For children in particular, Hunt recommends special clothing for additional protection.

"UV protective swimwear can be tremendously helpful to keep their skin safe and reduce the effort needed from parents to frequently reapply sunscreen," she said. "Also, don't forget to protect them with hats and UV-safe sunglasses."

Between an endless variety of sunscreen brands and types, from sprays and lotions to sticks and creams, what type of sunscreen is best? Drucker has a simple response to patients who ask that question.

"The best one is the one you will use," she said. "You have to find something that feels good on your skin. If it leaves you feeling too oily or too dry, you're not going to like it and you're not going to want to use it."

A high school football team is practicing outdoors on a typical Houston summer day. As temperatures soar into the 90s, one player starts acting strangely. Complaining of a headache, he seems disoriented and is having trouble walking straight. "Are you OK?" his teammates ask. "What do you need? When did you last drink water?"

Here in Houston, where the average high temperature hits 90 degrees in June, July and August, heat illness is common. This doesn't mean Houstonians should confine themselves indoors all season long. With proper precautions, it's possible to enjoy being active outdoors all year round.

"In the summer, the number one issue on our radar is looking for problems surrounding heat illness," said Vijay Jotwani, M.D., a Houston Methodist primary care sports medicine physician.

Jotwani described Houston as having "the perfect setup" for heat-related illnesses.

"In addition to the heat from the sun, Houston has high humidity levels," he said. "High humidity inhibits the body's ability to

lose heat from sweat as well."

A number of other factors can also increase a person's risk, including age, being out of shape, certain medications, such as those to manage blood pressure and antihistamine allergy medicines, and underlying medical conditions.

Jotwani also noted that one of the biggest factors in managing heat illness risk is acclimatization—or simply getting used to the heat

"For athletes, the highest risk of heat illness is that first week of practice," Jotwani said. "Our bodies will get used to the heat, their bodies will adjust when they have a little time, but it can be a major issue if you are really pushing yourself the first day."

Symptoms of heat illness include nausea, headache, dizziness and muscle cramps. If a person starts having mental issues—they're confused, disoriented, acting strangely—it can indicate that the illness has progressed beyond heat exhaustion to heat stroke.

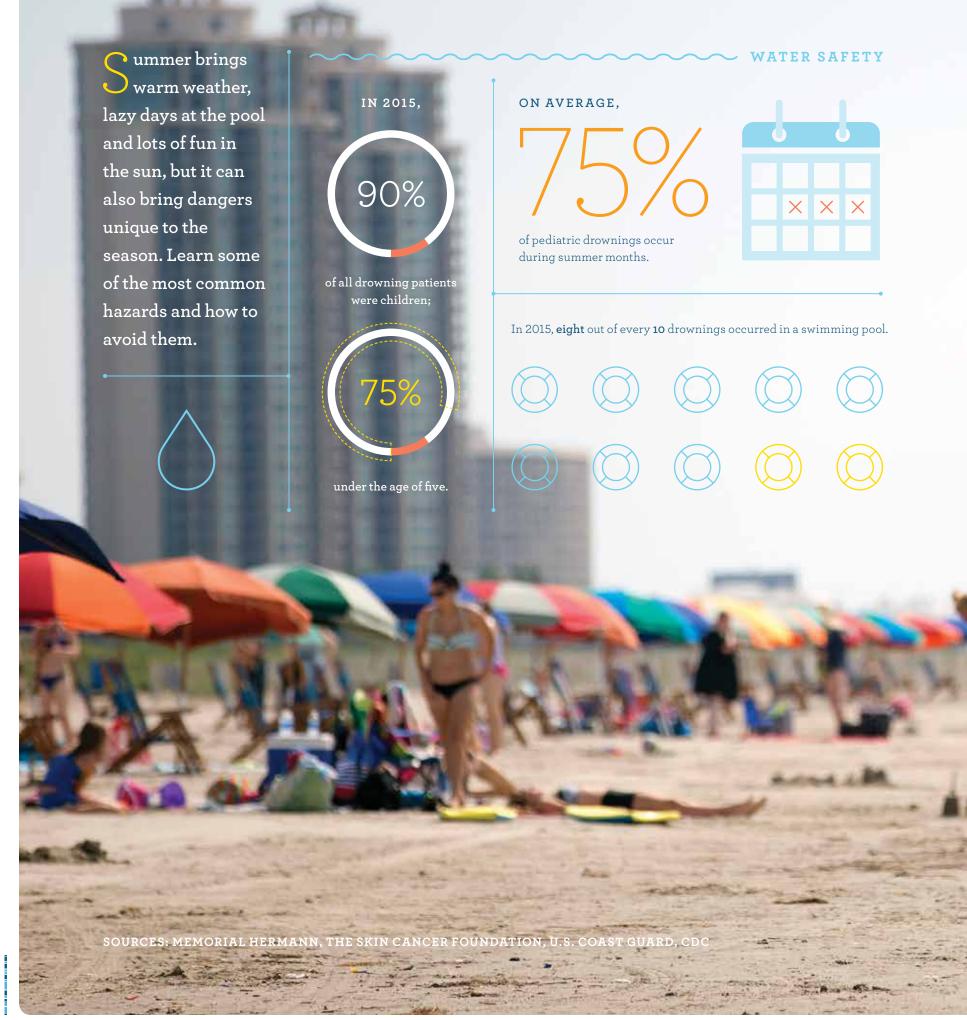
"It can get very serious," Jotwani said. "Especially if it's not recognized by someone around them and they're not cooled quickly, heat illness can lead to organ failure, breakdown of muscles and kidney damage."

To prevent heat illness, make sure to hydrate before and throughout outdoor activities and to take occasional breaks in a shaded or air conditioned area. If someone starts exhibiting signs of heat illness, get them cooled off—into the shade, indoors, into an ice bath, if necessary—and rehydrated. Jotwani also emphasized the importance of starting off slowly as the weather warms up and getting used to the heat.

"The number one thing is getting used to and acclimatizing to the weather before pushing yourself exercise-wise," he said. "If you do that, we encourage people to stay active and enjoy the outdoors even in the summer. Being physically active is one of the healthiest things you can do."



NAVIGATING SUMN



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or higher sunscreen reduces the risk of developing squamous cell carcinoma by about



and the risk of developing melanoma by



30

SPF 30 sunscreen blocks approximately

97%

of UV rays if applied correctly.

About **90**% of nonmelanoma skin cancers and **86**% of melanomas are associated with exposure to ultraviolet (UV) radiation from the sun.



A CHILD'S BODY TEMPERATURE CAN INCREASE

THREE to FIVE TIMES FASTER

than an adult.



BEAT THE HEAT

Heat stroke
SYMPTOMS

include nausea, headache, dizziness and disorientation. If the outside temperature is in the low 80s, the temperature inside a parked car can become deadly in

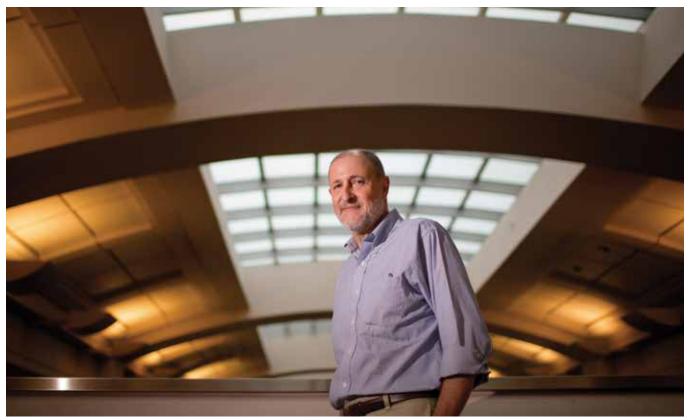




Fighting Fatigue

Surviving cancer is a feat in itself, but for many, thriving after treatment is another battle

By Shanley Chien



Pancreatic cancer survivor and retired radiologist Jorge Albin, M.D., is a patient at the Cancer-Related Fatigue Clinic.

Thile much of the media and public attention focuses on exciting new horizons and breakthroughs in cancer research and treatments, one cancer-related topic in particular has been pushed off to the periphery of medical discussion. However, over the past 18 years, Carmelita P. Escalante, M.D., professor and department chair of general internal medicine at The University of Texas MD Anderson Cancer Center, and Ellen Manzullo, M.D., clinical deputy division head of Internal Medicine at MD Anderson, have led the charge to alleviate this potentially debilitating and common symptom of cancer.

"Fatigue is the most common and

distressing symptom in cancer patients. This is a fact that is really not well known," said Manzullo, who evaluates and treats patients at the MD Anderson Cancer-Related Fatigue Clinic along with Escalante. "A lot of times, when patients come to our institution, the focus is really on the treatment of the cancer, so many times the fatigue is the backdrop. A lot of times, clinicians are very busy and they're not able to really focus on that."

"It's a very prominent symptom, and patients now are surviving longer and doing better, either without cancer or with cancer as a chronic disease, but this symptom can be prohibitive in their daily activities," Escalante added.

Since its inception in 1998, the Fatigue Clinic, which comprises a modest three-person team of Escalante, Manzullo and a clinic nurse, has treated more than 2,500 patients to help alleviate the burden of cancer-related fatigue. Using a qualitative "brief fatigue inventory" measurement tool developed by Charles Cleeland, Ph.D., McCullough professor of cancer research in the department of symptom research at MD Anderson, shortly before the clinic opened its doors, Escalante and Manzullo were able to assess the severity of patients' fatigue that, for a long time, wasn't always at the forefront of patient care discussions.

"Fatigue is very nonspecific, and

it's not like blood count or hemoglobin where you can get a blood test. We needed some type of measurement so that, if we implemented interventions, we would be able to measure it and see on a follow-up what was happening to the patient's fatigue," Escalante said. "Using that measurement tool, we were able to develop or begin the clinic and focus on fatigue, which, at that time, patients weren't talking about as much as now."

Patients typically experience worsened fatigue during their chemotherapy or radiation therapy, but cancer-related fatigue often continues even after the treatment concludes, potentially lasting anywhere from months to years.

"It's not only physical, but it's mental and emotional, and it's not relieved with usual rest," Manzullo said.

While normal fatigue is characterized as a state of temporarily feeling physically and cognitively exhausted with less energy throughout the day, cancer-related fatigue persists for longer periods and interferes with people's daily life because it leaves them with little to no energy to perform simple, everyday tasks, such as eating or even using the bathroom.

"During the chemotherapy, [the fatigue] was very severe," said 60-year-old pancreatic cancer survivor Jorge Albin, M.D., adding that although he tolerated the chemotherapy treatment well and the fatigue associated with it improved, the unrelenting fatigue never went away completely. "Getting out from the bed and to the couch and back to the bed was [considered] a very good day, and it got to the point where getting up to pee was a major ordeal.

"Sometimes the fatigue gets you, grabs you by the back and you just have to stop. [It feels like] there's nothing you can do," he added.

Albin, who retired from his career as the head of radiology at St. Joseph Hospital when he was diagnosed with pancreatic cancer, was referred to the

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Fatigue Clinic in 2010 and was put on a daily regimen of Ritalin and exercise, which consists of walking his two dogs—a Bichon Frise and Labrador-pit bull rescue—for three miles in the morning and one mile in the afternoon.

"[The fatigue] improved, but I was left with being able to do things for half an hour and maybe an hour, [then] rest for two or three hours. I had two or three episodes of that a day and that was it," Albin said. "The only thing that really makes fatigue better is exercise. If I don't do the walk in the morning, I am substantially more fatigued during the day."

According to Escalante and Manzullo, exercise is one of the best interventions for cancer-related fatigue. They encourage patients to aim for 150 minutes of activity a week, or 30 minutes five days a week, and adapt workouts to daily routines. For instance, Escalante suggests using canned foods from the pantry to exercise the arms, parking farther away to get in more steps or walking up and down the aisles of the grocery store or the mall while running errands.

"It's kind of contradictory: You're telling me you're tired and I'm going to tell you to go and exercise," Escalante said. "We really don't understand how it works. Whether it's the release of endorphins in the brain, who knows? But the bottom line is there have been a number of studies [that] all showed improvement in fatigue and improvement in quality of life."

In addition to consistent exercise, Escalante and Manzullo said behavioral methods, such as prioritizing and delegating, are also integral components in treating cancer-related fatigue because it allows patients to conserve and ration their energy throughout the day.

"I ask them to put together a calendar of the days of the week and their tasks and try to divvy it up so that everything's not just in one day," Manzullo said. "[I encourage] them to try to do the harder tasks when they have the most energy, so sometimes

Dr. Verstovsek gave me my life, but [the Fatigue Clinic] made me a person again.

— CHRISTINA COOPER
Primary Myelofibrosis Patient

SINCE ITS INCEPTION IN 1998, THE FATIGUE CLINIC HAS TREATED MORE THAN 2,500 PATIENTS TO HELP ALLEVIATE THE BURDEN OF CANCER-RELATED FATIGUE.

a fatigue diary is helpful to figure out what part of the day is better."

Although Albin's fatigue improved to the point where he now has two- to three-hour periods of activity, he's meticulous about not overexerting himself, which he said has transformed his daily life.

"It's a smaller life. It's a more limited life," Albin said. "I used to do 12-hour or 14-hour days, come home, walk the dog, cook, have fun and read. We would travel once a year or every two years, but now I don't want to travel because it's too fatiguing. I usually get up at 7, walk the dogs, and I'm usually done by 8:30. It's a very limited life. I think it's a very good life, I won't complain, but it is a different life."

For 53-year-old Christina Cooper, who was diagnosed with primary myelofibrosis—a chronic bone marrow disorder that impairs the production of normal blood cells—in March 2010 and suffers from hypothyroidism, her cancer-related fatigue also meant having to give up her active lifestyle.

"I have a reservation on my couch at 2:00 in the afternoon. I cannot get off of the couch in the afternoons," Cooper said of her fatigue, adding that she also experienced confusion and difficulty focusing. "I started noticing things like I'd do a recipe and I'd leave half of the stuff out or I'd be cooking multiple things and I'd burn something, or two or three days later I would look at something and go, 'Why did I do that?'

"Anything after 2:00 I didn't trust, really. I kind of lost trust in myself because I was messing things up and I couldn't do things," Cooper said. "Sometimes I would be so fatigued that in the evenings, I really couldn't even talk. Couldn't get words out, especially if I had pushed myself in the mornings to get a bunch of stuff done."

After being treated for her cancer by Srdan Verstovsek, M.D., Ph.D., section chief of myeloproliferative neoplasms in the department of leukemia at MD Anderson, Cooper went to the Fatigue Clinic where she, like Albin, was put on Ritalin to increase her energy and concentration levels, as well as an exercise regimen of practicing yoga twice a week, Pilates once a week and a goal of 10,000 steps a day. With the medication and a more conscientious approach to managing her day, Cooper said she has since been able to regain control of her life.

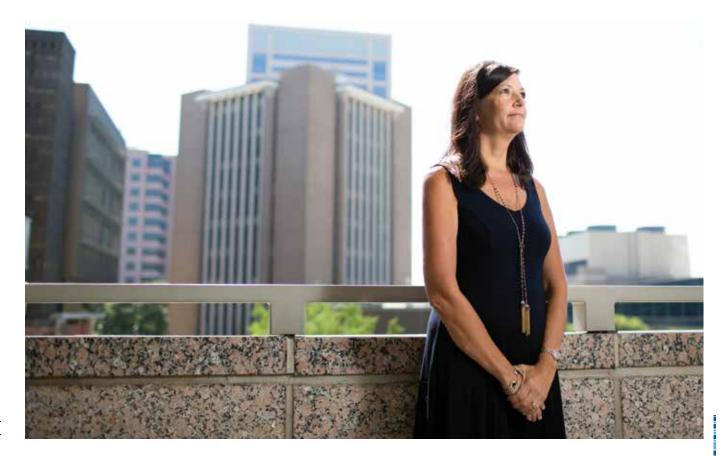


Carmelita P. Escalante, M.D., professor and department chair of general internal medicine at MD Anderson and physician at the Cancer-Related Fatique Clinic

"Dr. Verstovsek gave me my life, but [the Fatigue Clinic] made me a person again," Cooper said.

While the Fatigue Clinic continues to treat new cases of cancer-related fatigue, Escalante and Manzullo are keeping their eyes toward the future, whether that entails more research on the pathophysiology of fatigue to develop targeted therapies for it or predicting what subset of the population may be at risk, in an effort to improve the lives of their patients beyond cancer treatment.

"It's actually a challenge seeing these patients, but it is also very rewarding because we have the chance to really have a significant impact on their daily living," Manzullo said.



Supplying Relief

After a devastating earthquake, donors from across the TMC and beyond collect an unprecedented amount of medical supplies to send to Ecuador

By Shea Connelly

Tust before 7:00 p.m. April 14, Ecuador was rocked by a 7.8-magnitude earthquake. The tremors were felt as far away as Colombia and Peru, but the bulk of the damage occurred in the Ecuadorian coastal regions of Manabí and Esmereldas. Within minutes, homes and commercial structures had collapsed to rubble, hundreds were killed and thousands injured. The final estimated death toll is believed to exceed 660.

Nelson Maldonado, M.D., a professor of neurology at the Universidad San Francisco de Quito, was in the capital of Quito when the earthquake struck. Maldonado, who in 2015 became the first neurointensivist in the country of Ecuador following a fellowship at Baylor College of Medicine, said he first learned how devastating the quake was from friends in the United States calling to check on him.

"We didn't have real news for about two hours," Maldonado said, "so in the very beginning it was really nice to know that there was this support."

That initial outpouring of concern would soon turn into help on a far larger scale than Maldonado could

66 We have collected over 40,000 pounds of supplies. Truly, we've exceeded our expectation by a huge margin. 🤊 🤊

- JOSE SUAREZ, M.D.

Head of Vascular Neurology and Neurocritical Care at Baylor College of Medicine and Stroke Medical Director at CHI St. Luke's Health-Baylor St. Luke's Medical Center and The Woodlands Hospital

have imagined. With tens of thousands injured, the need for medical assistance was overwhelming.

"We were ready to go to ground zero with a group of physicians, because everyone who called said, 'If you need help, we will be there," Maldonado said. While he and his colleagues initially discussed the possibility of physicians traveling to Ecuador to offer aid, they soon determined the best and quickest use of their efforts would be in collecting supplies.

"We don't have a lot of big hospitals, and the big public hospitals are just in the biggest cities," Maldonado said, adding that the coastal regions most affected by the quake are in dire need

of supplies even in good times.

"Before the earthquake we were already limited in our resources," he said.

Maldonado joined forces with Jose Suarez, M.D., head of vascular neurology and neurocritical care at Baylor College of Medicine and stroke medical director at CHI St. Luke's Health-Baylor St. Luke's Medical Center and The Woodlands Hospital, to begin collecting medical supplies. Suarez, with whom Maldonado worked as a fellow at Baylor, had already been deeply involved in medical care in Ecuador prior to the earthquake.

"I traveled to Ecuador with Dr. Maldonado before he finished his fellowship to look at the situation there

and see how we could best use his training to help the population," Suarez said. "It became obvious that we probably need to do two things. One was to set up an educational program in the country to train physicians and nurses in our specialty so that patients who are critically ill could be better cared for."

The other program Suarez and Maldonado have been establishing is a high-altitude research center to study neurological disorders and how the brain adapts to high altitudes. Both the research center and the education program were recently approved by the government—firsts of their kind in Ecuador.

When the earthquake struck, "we felt we had a social responsibility to help those affected," Suarez said, given their existing involvement in improving the health of the country.

Suarez and Maldonado began reaching out to friends and colleagues in the Texas Medical Center and beyond, explaining their desire to collect supplies and medications to assist in the relief effort. They advertised through the Neurocritical Care Society and set up a donation page through CHI St. Luke's Foundation. In just a matter of weeks they amassed a collection of supplies and donations far beyond what they had anticipated.

"The response has been truly overwhelming," Suarez said. "We have collected over 40,000 pounds of supplies. Truly, we've exceeded our expectation by a huge margin."



Jose Suarez, M.D., surveys the massive amount of medical supplies collected in response to the recent earthquake in Ecuador.

The pair were also able to team up with the university where Maldonado works, which Suarez said was a huge help in legitimizing their efforts.

"The medical school got engaged with us very early, and we thought that was a great idea because we had people that were truly committed—people who were going to be overseeing the delivery of all the supplies, the medications that we were going to collect," Suarez said. "That gave us a sense of relief and more confidence that everything would work appropriately."

Those who have donated or offered assistance include Cleveland Clinic, Duke University Hospital, Henry Ford Hospital, the University of Rochester, Stanford University, Diabetes Action Research and Education Foundation, Texas Children's Hospital and CHI St. Luke's Health-Baylor St Luke's Medical Center, as well as numerous private citizens and students from various universities who raised money via GoFundMe pages.

Maldonado and Suarez are also partnering with United Airlines and Airlink, an organization that links airlines to humanitarian relief efforts, to coordinate the shipping of 40,000 pounds of supplies to Ecuador—not an easy task.

"The main issue now is all the logistics," Maldonado said. "You need to coordinate with the government and some of the medications we want to share are controlled substances," which requires working with the DEA.

The supplies are currently in storage at Baylor St. Luke's McNair Campus as Maldonado and Suarez work out the



Above and lower left credit: Associated Press

paperwork and approvals required for shipping. Ultimately they will oversee the distribution of the supplies in Ecuador from the Universidad San Francisco de Quito, where Maldonado works, to the temporary medical centers set up in response to the earthquake as well as the main hospitals in Quito and Guayaquil, which have been taking in the most seriously injured patients.

"We will be working with volunteers, mostly students and medical students from Ecuador, who will be helping unpack all the material and then redistribute things and send to the places where they're needed," Suarez said. "We're planning on doing this maybe as an ongoing effort for the next year or so, to see whether we can actually get and send more."

The amount of materials and the donations they have managed to collect will certainly make an impact on treatment and recovery postearthquake, but they also have the potential to help far beyond disaster response in a country that often lacks medical supplies in the best of times.

"The amount of supplies that I have to work with is not even close to what I was used to when I was in the States training," Maldonado said. "The whole medical system is in need of improvement—the quality of medications and the quality of medical supplies that they have. This is a project that is not just going to help the post-earthquake relief, but it's going to help the country for a good long time."

66 This is a project that is not just going to help the post-earthquake relief, but it's going to help the country for a good long time. ?

- NELSON MALDONADO, M.D.

Professor of Neurology at the Universidad San Francisco de Quito and Director of the Neurovascular Unit at Eugenio Espejo Hospital





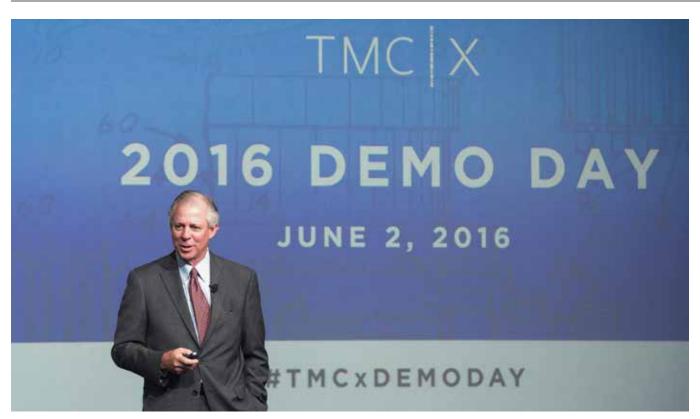


Local children affected by the earthquake. Far right: Michelle Grunauer, M.D., dean of the medical school at the Universidad San Francisco de Quito in Ecuador. Middle and far right photos provided by Nelson Maldonado, M.D.

Pitch Parade

The TMCx Accelerator's second class said goodbye in celebratory fashion at Demo Day

By Christine Hall







It was a graduation ceremony without the cap and gown, but with plenty of pomp and circumstance. The 12 digital health companies that were part of the second TMCx class, the Texas Medical Center's accelerator program, topped off their journey just as they started, with a pitch.

Since late January, the entrepreneurs and their teams have logged hours with mentors, curriculum and hospital tours, learning how to tailor their messages. All of that hard work came together June 2, when each of them stood onstage in the TMC Innovation Institute, focused on the crowd sitting before them and poured all that experience into a three-minute pitch.

"Thank you everyone for coming out to be here, to all of you advisors and mentors who worked closely with the companies to get to where they are today," said Robert C. Robbins, M.D., president and CEO of the Texas Medical Center, to the crowd gathered at the TMC Innovation Institute. "You are in for a great treat."

TMCx Demo Day is a graduation of sorts for the entrepreneur teams, which were whittled down from more than 150 applications. Half were from around Texas and half were from other areas of the country. Throughout the day, attendees were able to hear pitches from each company, as well as speak personally with the teams and learn about their plans for after the accelerator.

Over the 19-week program, the 12 companies have raised a total of \$18 million in venture funding, successfully developed 27 customer engagements, including pilots and



validation studies, and hired 16 employees. It gets better from there—two acquisition offers were made, which is the epitome of success in the startup world.

During his welcoming remarks, Erik Halvorsen, Ph.D., director of the TMC Innovation Institute, joked that it would be enlightening to see the initial 60-second and three-minute videos that the companies did upon starting the program four months earlier, and compare it to the day's much more polished pitches.

Halvorsen joined TMC in January, and one of his first goals—having

started several companies himself—was to make time to work individually with the companies coming into TMCx. He wanted to bring the experience and perspective he honed in Boston to the companies at TMCx, ultimately to see them advance and get into the market with their product.

"Today was a chance to see those results," Halvorsen said. "Every single one of the 12 companies made tremendous progress and is getting great traction with TMC hospitals and other institutions around the country. That, to me, was rewarding and reassuring that we are on the right track here."

Every single one of the companies made tremendous progress and is getting great traction with TMC member institutions and other institutions around Texas and the country. That, to me, was rewarding and reassuring that we are on the right track here.

— ERIK HALVORSEN, PH.D.

Director of the TMC Innovation Institute

Erin Flores, Ph.D., business analyst for TMCx, agreed, saying that in addition to the amazing turnout, all of the companies did well and the pitches were polished.

Comparing the two classes of companies, Flores said the current one was able to interact faster with stakeholders. That was driven by involving clinical experts in the initial selection process of the companies and the TMCx team having more time to build out those relationships since the last class, she added.

"The companies had immediate champions and have been able to build those relationships very quickly," Flores said. "The progress they have made in the hospitals has been faster, and they have gotten a lot of relationships built that will bring them back to Houston."

One of the keys to the success of the program has been its advisors. Throughout the curriculum, over 130 advisors, from both clinical and business backgrounds, shared their experience and knowledge with each of the companies, including helping with mock board meetings and providing time for one-on-one sessions. To celebrate that involvement, an advisor introduced each company on Demo Day.

Ayse McCracken, a health care advisor and strategic consultant, has followed the companies from the beginning and said they showed significant progress in the maturation of their businesses.

It started with classes and being part of the education process, helping them understand how to build a business. Not only were they moving their businesses along, but they were taking what they were learning and applying that to advance their companies, she added.

"They get to rub elbows and get guidance and advice from some of the top leaders in health care, and that is a phenomenal opportunity for them," McCracken said.

CareSet Systems, which provides data based on unreleased Medicare data, finished the TMCx accelerator program with a closed seed round and four new customers, including National Cardiovascular Partners.

Dwight Clark, director of finance for National Cardiovascular Partners, introduced Laura Shapland, CareSet CEO, at Demo Day, explaining that his



company partners with the best cardiologists in the country, and CareSet demonstrated itself to be the right partner to work with. His company signed a two-year agreement with CareSet in February.

Shapland said the TMCx experience enabled CareSet to get the inside track from people in the medical center on what it was like to be sold to by a vendor or startups.

"You have your messaging in your mind, and you think it sounds great, but to know how it is received by them, it is good to hear that feedback," she added. "We have deepened our connections in the Houston area, gained new advisors and more than a couple new fans, I hope."

Other companies involved in the second class also saw improvements.

"A lot of changes have been internal, and that has been the biggest positive coming out of TMCx for us as an organization," said Richard Munassi, M.D., chief operating officer of DocResponse. "We learned how to look at target markets and how to best interact with high-level stakeholders in the Houston medical scene, as well as outside of Houston."

He said being in the TMCx program was incredibly valuable for his company, which developed a medical assessment solution that generates differential diagnoses. Harvard Medical School found DocResponse to be the most accurate assessment software in a landmark study published in the July 2015 British Medical Journal that looked at platforms across four countries.

For Moving Analytics, which helps hospitals implement mobile, home-based cardiac rehabilitation programs, TMCx provided education on how to navigate health systems from a sales perspective, said co-founder Ade Adesanya.

"Prior to coming to TMCx, we had been selling to hospitals, but we didn't know how it worked in the background, and within the medical center, you have access to people you don't typically have access to," he said. "All you have to do is walk down the street, and you get

to understand how clinicians work, get feedback on your product and be able to incorporate that into your strategy."

Meanwhile, the third class, which will focus on medical devices, begins in August. TMCx has received more than 200 applications and will be announcing the companies later this summer.

DIGITAL HEALTH COMPANY DEMOGRAPHICS

59
INDIVIDUALS

39 AVERAGE AGE

PHYSICIAN FOUNDERS



FEMALE CEOS OR FOUNDERS

2.6:1

MALE-TOFEMALE RATIO

THE NATIONAL OPIOID ADDICTION CRISIS PROMPTS SURGEONS TO INNOVATE PERIOPERATIVE CARE TO REDUCE OPIOID USE IN THE OPERATING ROOM AND BEYOND

Which the growing public concern about the opioid addiction epidemic, news of music icon Prince's death by fentanyl overdose in April added to the nation's increasing death toll by prescription painkillers and fueled even more discussion around this ongoing problem.

For 64-year-old John Bell, a retired database architect and former Special Forces medic, the nation's opioid addiction epidemic is an issue that is all too familiar to him.

In February 2011, Bell underwent a total knee replacement. Because of a previous cervical laminectomy—a surgical operation performed at the back of the neck to relieve pressure on the spinal cord—his neck was damaged during intubation while preparing for the surgery.

"Since I was on the pain medication for five months after the operation, I didn't realize my neck was damaged. It slowly progressed and spiraled downwards to the point where I couldn't work,"

Bell said.

Bell was prescribed hydrocodone and Soma, a muscle relaxant that blocks pain signals between the nerves and the brain, but—like the 1.9 million Americans who had a substance use disorder with prescription painkillers in 2014, according to the American Society of Addiction Medicine—he quickly developed an addiction to his painkillers.

"Sure, I was a lightweight," Bell said. "I didn't chase it on the street or anything like that. A lot of

66 It was one of these journeys that I didn't expect to have. I [was at] a six. To be at a zero today and be free, that's huge.

— JOHN BELL Memorial Hermann Prevention and Recovery Center Patient people do and it's unfortunate. I didn't doctor shop, but still, I was dependent on the medication."

His hydrocodone and Soma regimen provided a temporary quick fix, but he soon found that his pain was escalating due to opioid-induced hyperalgesia, a condition in which people experience heightened sensitivity and painful responses to certain stimuli. It was then that he realized his addiction had finally come to a head.

"When my fingers didn't work and I couldn't get off the floor, I thought life was over. Going to the store just four blocks away was a big deal," he said. "I couldn't concentrate on anyone saying 'hello.' I was just in a different world. It really hurt. You don't realize the hyperalgesia is eventually taking over.

"I like to beat myself up over it, but I have to give myself a little grace," he added. "I didn't know. If I have another operation, I'm not going to take the pain medication longer than I have to."

Bell, who recently celebrated two years of sobriety, helps fellow recovering addicts at Memorial Hermann's Prevention and Recovery Center (PaRC) and sponsors five individuals. Although his life took an unexpected turn because of his addiction to opioids, he said his recovery at PaRC helped him regain his freedom from the deep hold the drugs had on him.

"It was one of these journeys that I didn't expect to have. I [was at] a six," Bell said of his level of pain. "To be at a zero today and be free, that's huge."

* * * * *



Eric Haas, M.D., division chief of colon and rectal surgery at Houston Methodist Hospital, recognized the need for new, innovative surgical approaches to help patients avoid that prescription painkiller addiction Bell and so many other Americans experience, and in 2014, he instituted an enhanced recovery after surgery (ERAS) protocol to combat the rampant use of opioids in the hospital setting. The results of the pilot study were recently published in the June 2016 issue of Surgical Endoscopy, the official medical publication of the Society of American Gastrointestinal and Endoscopic Surgeons.

"The opioids have a significant detrimental effect on recovery after colon surgery," Haas said. "The side effects on the bowel are very detrimental to how patients recover, yet it has been the main form of pain control we have been using for years.

"The question is, how do we come up with an alternative pathway where we can reduce or eliminate opioid use yet have the same patient satisfaction in terms of recovery with minimal or no pain? That was the idea," he added.

The protocol consists of educating patients during their surgical consultation to discuss the disease—in this case, it's oftentimes colon cancer—and what they can expect throughout their hospital stay, including pain management, in order to help patients better prepare for post-surgery care, both mentally and physically.

"We feel like this is a very important component of the entire pathway. Sometimes you may not even think about it, [...] but the education part is of tremendous value," Haas said. "We educate the patient on what they should expect for pain and post-operative recovery. Some patients might have the perception that any pain is 10 out of 10."

Another integral component of the protocol is educating hospital staff, including the anesthesiologists, doctors and nurse practitioners, to shift the hospital's culture of pain management away from prescribing opioids.

"For us to implement this pathway, we had to change the culture," Haas said. "We had educational meetings with support staff that take care of colorectal patients saying that we are changing the paradigm from using opioids as our No. 1 pain relief to using opioid-sparing pain control measures."

Using a variety of multimodal pain control approaches, which refers to the synergistic method of using multiple pain medications that alone work on different pain pathways and combined create a stronger effect, Haas and his team are able to eliminate opioids as their go-to pain management solution by intravenously administering non-narcotic pain medications, including Tylenol, nonsteroidal anti-inflammatory drug Toradol and nerve pain and anticonvulsant drug Gabapentin, during the recovery period. However, it's their fourth non-opioid drug, EXPAREL, combined with a transversus abdominis plane (TAP) block technique that Haas has lauded as a major breakthrough.

66 It may never be possible to completely eliminate narcotic use, but it is certainly something we are going to continue to strive for.

— ERIC HAAS, M.D.

Division Chief of Colon and Rectal Surgery at

Houston Methodist Hospital

"We've taken EXPAREL, and we've used it for nerve blocks that we infiltrate into the abdominal wall muscles [...] called 'TAP blocks," Haas said. A TAP block is a quick surgical technique in which surgeons use ultrasound to accurately locate and inject local anesthesia to the nerves in either side of the abdominal wall prior to the surgery.

Performed in conjunction with EXPAREL, which provides extended-release pain relief that lasts for up to 72 hours post-injection, Haas and his team discovered this could be the one-two punch combination they need for more successful patient outcomes that require few to no opioids, both during anesthesia and after surgery.

"What we didn't realize is anesthesiologists would use a significant amount of narcotics throughout the operative procedure such as morphine and fentanyl," Haas said. "We said to them, 'Look, if we block the nerves right after anesthesia, do you think you can eliminate using opioids altogether?' [...] Following our TAP blocks, they have nearly completely eliminated opioids during anesthesia, which is tremendous."

After comparing the pain outcomes of 50 patients—25 who received the traditional standard of care and 25 who received the multimodal therapy under the ERAS protocol—he found that patients in the latter group not only had lower opioid use and less intraoperative fentanyl because of the EXPAREL and TAP block combination, but they also expressed lower pain scores at the beginning and end of their post-anesthesia recovery. In addition, patients who underwent the multimodal therapy and ERAS protocol recovered within only two-and-a-half to three days, whereas the national average length of stay is between five and seven days.

"We want the patient to wake up with little or no pain and completely eliminate the use of narcotics post-operatively. That would be phenomenal.



We think we're going to get there with this advancing technology," Haas said.

Although Haas and his team have made great strides in reducing the use of opioids after surgery among his patients, he said he believes there's more that needs to be done to help curb the nation's opioid epidemic.

"We haven't [reached our maximum potential]," Haas said. "We have to keep pushing this idea of having painless, non-opioid surgery forward. It may never be possible to completely eliminate narcotic use, but it is certainly something we are going to continue to strive for."

While his group performs approximately 300 colorectal surgeries a year under the ERAS protocol, he said his hope is to standardize the protocol across all health care systems beyond Houston Methodist to help thousands of patients regardless of the provider.

"It's very exciting. Any time that we can advance medicine and help with patient satisfaction and patient care, it's always the best part of our job," Haas said.

We want the patient to wake up with little or no pain and completely eliminate the use of narcotics post-operatively. That would be phenomenal. We think we're going to get there with this advancing technology.

- ERIC HAAS, M.D.



JULIE FARR, EXECUTIVE DIRECTOR FOR THE HOUSTON MUSEUM DISTRICT, SAT DOWN WITH WILLIAM F. McKEON, EXECUTIVE VICE PRESIDENT AND CHIEF STRATEGY AND OPERATING OFFICER OF THE TEXAS MEDICAL CENTER, TO TALK ABOUT THE CITY'S EXPANSIVE OFFERINGS IN VISUAL ARTS AND HOW INCREASING COLLABORATION BETWEEN MUSEUMS AND HEALTH CARE FACILITIES WILL BENEFIT RESIDENTS AND VISITORS ALIKE.

| I understand you are from Pennsylvania?

A Yes. I've lived in most parts of the state, and most recently in Pittsburgh before I came to Houston.

What brought you to Houston?

A The Houston Center for Contemporary Craft (HCCC). I've had the typical, convoluted career path of a nonprofit arts administrator and was on a board in the Pittsburgh area when the director of the Society for Contemporary Craft, which is a counterpart of HCCC in Pittsburgh, turned to me one day and said, 'I'm thinking about retiring. Are you interested in

this position?' I had been in that job maybe two months when the headhunter for HCCC called to see if I would be interested in coming to Houston, but it wasn't the right timing. However, the person they did bring in ended up having to move out of state a year later. The headhunter remembered me and called when it had been well below freezing in Pittsburgh two weeks straight. It was snowing nonstop and I was daydreaming about playing golf, and I thought, 'I'll talk with Houston.'

At the Houston Center for Contemporary Craft there are regular exhibitions, usually three varying at a time. What's really dynamic about it is the artist residency program. There are five open studios where visitors can walk in and see an artist at work. Visitors can talk to them, watch and touch their work. It's a highly competitive program now. What I really loved about it is that the majority of the artists come from outside the area. Whenever possible, they stay in Houston because they can find jobs; they're filling the teaching positions; they're buying their first houses. I was at a meeting the other day at a corporate office downtown and the work on the walls was by one of our former resident artists—that is wonderful to see.

| How did that role prepare you for becoming the executive director of the Museum District?

A As a member institution of the Museum District, every executive director or CEO serves on the board of the district. Through my role at the HCCC I had a lot of familiarity with the district. I had chaired the Policy Committee and worked on the PR & Marketing Committee. When the previous director left, I filled in as an interim director. After a series of days where I was having conversations with independent artists, with big organizations, with people in between and with the neighborhood groups, I thought, 'I'm the connector in this. This is what I should be doing.'

Q I think the Museum District is one of Houston's greatest assets. How would you describe the Museum District and all that it has to offer?

A | I'd say it is made up of 19 member institutions covering all disciplines in visual arts. Even the Houston Zoo, they consider themselves to be preserving a collection. There is a geographic footprint of a mile and a half around the Mecom Fountain. What's unique about it and what unites it, is that the Board of Directors—the chairs and the CEOs of these institutions—all sit down at the same table. You have the two-person mom-and-pop organization next to the largest organizations. There's a lot of support for each other, there's a lot of unity and a lot of awareness about preservation of funding.

The Museum District itself is divided into four walkable zones, with the Menil campus being one. The most spread out zone goes from Buffalo Soldiers in the north to Lawndale in the west and down to the Holocaust Museum. Then in the summer, zone three showcases the Contemporary Arts Museum, the Museum of Fine Arts and The Jung Center. So people are walking in a smaller area in the heat. And then the fourth zone is Hermann Park and its neighbors.

Q How has the Museum District evolved over time?

A In 1997, the district was formed with 11 institutions, and they're considered the legacy institutions because of that. They were the initial group of museums receiving hotel occupancy tax funding. Then, over time, other organizations have come in. Many of those apply to the Houston Arts Alliance for grants, which is also the hotel occupancy tax fund. It's been interesting to see the growth. Recently, we've had Asia Society come onboard, and Buffalo Soldiers has moved in, too. There are also a lot of expansions going on.

We are in a five-year contract for funding from the hotel occupancy tax through 2018. The hotel tax is state legislated and flows through the city—it isn't technically city funds. Unfortunately, Houston ranks last compared to other large cities with per capita funding of \$7.27. This means that out of every dollar collected, seven cents goes to support the arts. The average of the 10 largest cities is \$19 per capita and the highest is \$37, which is in Seattle and Portland. Different cities fund their arts programs differently. Four of them are through a hotel tax, and four are through a sin or sales tax, and then others have strong corporate support.

Q What are some of the goals you hope to accomplish in this role?

A | My goal is for the Museum District to be front and center in the conversations that are going on; whether it is Hermann Park and their 20-year plan, with the Medical Center growth, and in regard to what Midtown is doing with their cultural designation. We're in this dynamic corridor and I'd like for us to be a unifier and help all of these groups. We're in the Museum Park Super Neighborhood Association, in South Main Alliance and Rice University. If we can help unify the messages and what, as a whole, the area would like to accomplish, then we'll be better prepared for our city's growth.

Q | Tell me about your impression of Houston.

A I've been in Houston for almost nine years now. Up north, and maybe it was because we were in a rust belt area, if you threw an idea on the table, you'd get all the reasons why you couldn't, shouldn't, won't, don't—all the negatives. Here, you throw an idea on the table and people say, 'Oh, let me help you.' I have a funny story about that. Early on, we had an idea to recruit a high-profile person as a chair for a special event. Staff was a little hesitant about it. They said, 'How would we get to this person?' That conversation was on a Wednesday. That Friday night, I'm out at an opening reception, and I said to someone, 'How do we get to this high-profile person?' They said, 'Oh, you call so-and-so.' At the time, I was doing the breakfast meeting speaking circuit and someone asked me what I liked about Houston. I told that story and afterward, a woman came up to me and said, 'Now if that doesn't work out for you, my husband was his fraternity brother. You just call me.'

So that's what I've found. If you come in and embrace Houston, it embraces you. Also, the food and the arts are fabulous. When I was researching coming here, that was one of the things I looked at. Houston, Boston, Los Angeles, New York and Pittsburgh are the only five cities in the country that have resident symphonies, operas, ballet—and then of course the visual arts and the theater arts are exceptional.

What does a normal day look like in this role?

A | When you're running an organization, a normal day is usually pretty chaotic. You wear a lot of hats. You switch them on and off very quickly. This is a much different pace. It's really nice to have time to consider things and have time to write well. What's very important to me is to get out to our members, talk to people. If we're a presence, then we're involved in the conversations that all of our institutions need to know about.

Q What are your thoughts about how we can better integrate the arts into the TMC?

A | So, in these conversations about connectivity, there are perceived boundaries, and the question is, 'How do we break those barriers?' Whether it's visually, whether it's pedestrian, whether it's just a perception of a boundary. I think the bike share program is a good start. If we can get a message out that we are working together and that there is opportunity to get from one

place to another without getting in a car, I think that will go a long way toward that.

Another thing is just simple exposure. The Convention and Visitor's Bureau is working on an app for the Super Bowl that will hopefully launch in December. The hope is that it will do virtual 360-degree tours that patients and families can easily access.

Q How does the Museum District manage the programming of the 19 museums? Are their exhibits coordinated, or do they compete for the same audience?

A That is a good question, and I would say the competition is minimal. There are 6.5 million visitors to the Museum District every year; that is such a big pool that I don't see it as a competitive effort. We all distribute information for each other. We come together on Museum Experience days. The Museum District itself produces an educators open house each fall, which brings teachers into five different locations in the district to learn about what all these programs are and what kind of outreach opportunities they have. Combined, the visual arts groups have 1.7 million outreach participants every year—that includes programs in the neighborhoods and schoolchildren that come for free tours or activities. Each program has such a unique focus, so every experience is going to be different.

Q Any closing thoughts?

A It's an exciting job with an incredible group of institutions and leaders. You're never bored. There's always a different group of folks to talk to, and I like being in the mix of knowing what the possibilities are for the future of the whole area. I like that the Museum District and all of these other planning organizations, membership organizations and neighborhood groups are talking to each other and looking at the future together. The Museum District is in the heart of all of this and I consider it the anchor of the area. I hope we can be a unifying factor and work closely with the TMC to expand experiences for everyone.

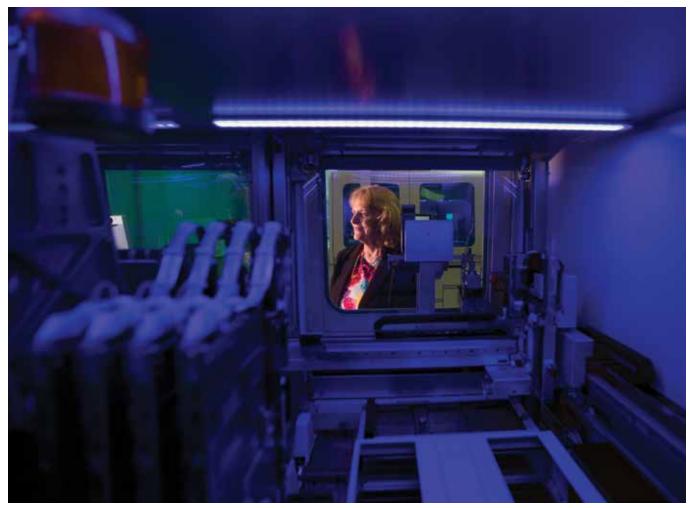
66 If you come in and embrace Houston, it embraces you. 99



Just Add Blood

While the threat of the Zika virus raises national concern, The Gulf Coast Regional Blood Center participates in a new clinical trial to ensure the safety of the local blood supply

By Shanley Chien



Susan Rossmann, M.D., operates a polymerase chain reaction machine to demonstrate how the samples are run.

Ever since news of the mosquitoborne Zika virus pandemic across Brazil made headlines in early 2015 and affected individuals traveled stateside, there's been widespread concern around public health and the safety of travelers.

According to the U.S. Centers for Disease Control and Prevention (CDC), as of mid-June there had been 618 travel-associated cases of Zika—11 of which were sexually transmitted—reported in the country, and 1,114 cases across the U.S. territories of American Samoa, Puerto Rico and the U.S. Virgin Islands. Although there are no known locally acquired infections here in the United States, officials are encouraging

increased security measures to protect people from the virus. The CDC has since issued travel advisories for pregnant women, warning against traveling to those regions with active transmission of Zika, and the U.S. Department of Defense has offered to voluntarily relocate pregnant employees and their families out of affected areas. Many independent organizations are also proactively implementing safety

measures of their own.

While Zika can be passed along by mosquitoes, sexual activity and pregnancy, the virus can also be transmitted through blood transfusions, which has raised anxiety among blood donation centers. Because most people who have been infected with the virus don't show any visible symptoms, it's impossible to tell if a blood donor carries the virus without conducting

laboratory screenings and tests.
This has prompted The Gulf Coast
Regional Blood Center to participate
in an Investigational New Drug (IND)
Application protocol to test all of the
blood donations in its inventory for the
Zika virus.

As one of the few blood centers in the country to participate in the clinical trial approved by the U.S. Food and Drug Administration (FDA), The Blood Center used Roche Molecular Systems' cobas Zika test to screen for the virus. So far, the screening process has been successful and has not detected any cases of Zika in The Blood Center's blood supply, but health officials are still on high alert.

"We have been concerned about the possibility for Zika in the area because we are warm and we have mosquitoes," said Susan Rossmann, M.D., chief medical officer of The Blood Center. "When the possibility came up of not being able to collect [blood] if there is Zika in the area, which is what the FDA says, we thought, 'Well, what are the alternatives?' Testing is one of the alternatives."

"As a leader in diagnostics, Roche is committed to providing testing solutions for the world's most challenging healthcare emergencies," Uwe Oberlaender, head of Roche Molecular Systems, said in a statement. "With the collaboration of the FDA on this IND, we are able to further expand our commitment to help keep the blood supply safe."

The Zika virus spreads through the Aedes aegypti mosquito, which is a species that is also responsible for transmitting dengue fever, chikungunya and

AS THE PRIMARY SUPPLIER OF BLOOD IN THE LOCAL AREA, PROVIDING BLOOD
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OF THE BLOOD SUPPLY IS OF UTMOST IMPORTANCE FOR THE BLOOD CENTER.

yellow fever. At the time of press, there were six travel-associated cases of Zika in Houston, according to the Houston Health Department, but over recent years there's been evidence of locally acquired dengue and chikungunya, as well.

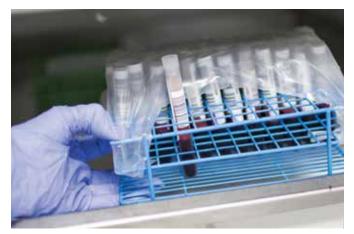
"We want to be highly vigilant by doing things like testing in our case," Rossmann said. "Obviously, our first goal is to keep the blood supply safe. Of course, if somebody has contracted Zika and doesn't know it, we would be able to keep it out of the blood supply. Beyond that, it will be of interest, if there is Zika in the community, to see where it is and possibly how it spreads, how people get Zika, etc."

As the primary supplier of blood in the local area, providing blood donations for more than 170 hospitals and health care facilities across 26 counties in the Texas Gulf Coast region, maintaining the integrity of the blood supply is of the utmost importance for The Blood Center.

"Sometimes when people hear blood and a virus in the same sentence, they naturally connect them," Rossmann said. "We're doing this to be very proactive, but there's no reason at this time to think there is any Zika in the American blood supply."

Using Roche's in vitro nucleic acid screening test, The Blood Center is able to apply small amounts of human blood donor samples to the assay. Once the blood sample supply is prepared, it goes through a fully automated polymerase chain reaction process that amplifies the pieces of the Zika virus RNA to make thousands to millions of copies to determine whether or not the blood is infected.

"There is a humongous amount that we don't know. We do know that a lot of people who have Zika [...] don't have any symptoms or signs, and that's what is worrisome for us," Rossmann added. "When people go to give blood, they are





Sometimes when people hear blood and a virus in the same sentence, they naturally connect them. We're doing this to be very proactive, but there's no reason at this time to think there is any Zika in the American blood supply.

— SUSAN ROSSMANN, M.D.

Chief Medical Officer of The Gulf Coast Regional Blood Center

normally healthy and well. It's the first question we ask them, but if they could have something and still feel well, that would be a concern for us and that's why we're doing the test."

The blood testing is currently part of The Blood Center's ongoing protocol and has been integrated into its standardized blood-testing process. Rossmann said she and her team plan to continue testing through the summertime, when mosquitoes are at their peak.

"We don't know yet over the mosquito season what Zika is going to do both in the Houston area and in the country. That's going to determine what kind of response we will have," Rossmann said. "We'll just have to see what the situation looks like if we start seeing cases that are spread by mosquitoes in our region. The testing should protect the blood supply in that situation, but it certainly would lead us to want to continue to do the testing."

In addition to the blood testing, The Blood Center is also deferring people

who have recently traveled to Mexico, the Caribbean and Central and South America within the past 28 days, as well as women who have had sexual contact with someone who has been infected with the Zika virus.

As part of The Blood Center's protocol, it is working with local health

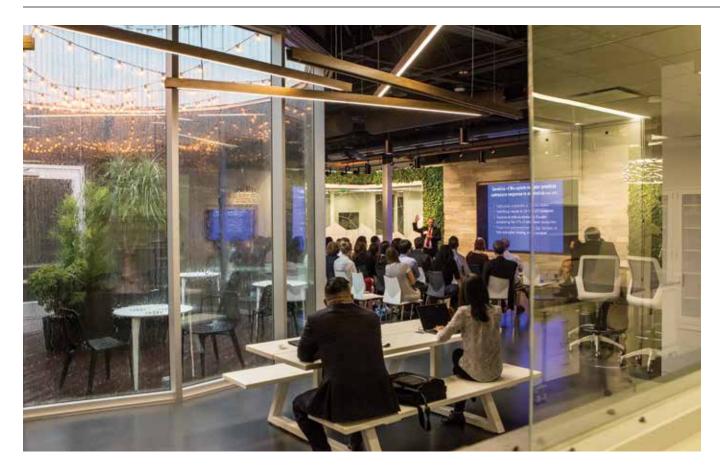
departments by sharing epidemiological information and reporting its findings to health officials. Should any positive cases arise, Rossmann and her team will notify those donors to ensure they are aware of the infection and can seek proper treatment.



Personalizing Psychiatry

Data-driven health care aims to intercept major depressive disorder diagnoses with more targeted treatments

By Christine Hall



Providing patients with the best health care is a goal for many physicians, and one of the ways they are trying to achieve that goal is through personalized medicine.

This area of medicine is gaining traction, particularly in oncology, with the examination of genomes and phenotypes, but some Texas Medical Center researchers and doctors think that same method can also be tailored to patients in other areas, like psychiatry.

Using genes and phenotypes, the ultimate goal is to develop therapies that can intervene in earlier stages of illness, enabling physicians to provide modified disease courses and improve prognoses.

Treatments like these may be developing just in time: The World Health Organization estimates that by 2030, major depressive disorders will rank first in global disease burden, as measured in Disability Adjusted Life

Years, mainly because depression can affect anyone and often co-exists with other illnesses.

Focus on the pathway

Thought to be genetic, conditions like bipolar disorder also need a certain environment in order to manifest, said Consuelo Walss-Bass, Ph.D., associate professor of psychiatry and director of the Psychiatric Genetics Program at McGovern Medical School at The

University of Texas Health Science Center at Houston (UTHealth).

Because it is not yet known how individual genes can be used to alter brain function, her research involves understanding how cellular pathways are disrupted by mutations within these genes, in combination with environmental stressors. As part of this, Walss-Bass' work involves looking at high-risk populations: Children who are the offspring of parents with

those disorders is stressful."

bipolar disorder or depression.

"It's not just that you inherit a set of genes, but the environment plays an important role in modulating genes," she said. "Living with a parent with

Studying children at risk, but who have not yet developed the disorder, is an important angle for Walss-Bass' research team, headed by Jair Soares, M.D., Ph.D., professor and Pat R. Rutherford Jr. Chair in the Department of Psychiatry and Behavioral Sciences

and executive director of the UTHealth Harris County Psychiatric Center.

Full onset of schizophrenia, depression and bipolar disorder often occurs in late teens or early 20s, which is why most studies of these disorders are on adults, Walss-Bass said. In addition. most studies of individuals with these disorders take place after the person has been ill for some time. Therefore, when looking at brain alterations imaging, cognition—it's difficult to know whether any disturbances are from the burden of the disease, or the effectiveness of the medication, or are, in fact, alterations that led to development of the disorder.

"That is why we are studying highrisk children who have not yet become ill, because we know they have inherited some of the genes. It is not one, two or three, it may be as many as 20 or 30," she added. "We want to study the subtle alterations caused by mutations within these genes because it is the combination of them that leads to the





Left to right: Guy Seabrook, Ph.D., Consuelo Walss-Bass, Ph.D., Lynda Chin, M.D.





It is difficult to make an exact match of a medication to a brain target. Once you have a medication that is specific, you then need a molecular target that the medicine hits.

- THOMAS KOSTEN M.D.

Jay H. Waggoner Endowed Chair in the Menninger Department of Psychiatry and Behavioral Sciences and Professor of Neuroscience, Pharmacology, Immunology and Pathology and Co-Director of the Dan Duncan Institute for Clinical and Translational Research at Baylor College of Medicine

disorder, and we can identify alterations caused by these genes before onset of the disorder."

Walss-Bass was one of four experts providing insight for "Science First:
The Future of Personalized Medicine in Psychiatry," an education event hosted by Johnson & Johnson Innovation
June 1 at its JLABS @ TMC facility, and moderated by Guy Seabrook, Ph.D., vice president of neuroscience innovation for Johnson & Johnson Innovation.

Finding a gene

Jimmy Lloyd Holder Jr., M.D., Ph.D., assistant professor of pediatrics in the section of neurology at Baylor College of Medicine, started in this area looking at a specific gene called SHANK3, found in those with autism, through a collaboration with Huda Zoghbi, M.D., director of the Jan and Dan Duncan Neurological Research Institute at Texas Children's Hospital and professor of molecular and human genetics, pediatrics, neurology and neuroscience at Baylor.

"I was interested in the loss-offunction mutations that cause autism spectrum disorder," Holder said. "Collaborating with Dr. Zoghbi, she had a research project to understand what happens when you have too much of the gene."

When studying the abnormalities of mice, the researchers found multiple behavior abnormalities that, when put together, looked like a manic phenotype. Working with the Miraca Medical Genetics Lab at Baylor College of Medicine, they were able to identify individuals who make too much of the SHANK3 gene.

In developing treatments for these individuals, they tried two different drugs usually given to humans for bipolar disorder. Lithium, a drug that has been used for 30 or 40 years, had no effect on the abnormality of the SHANK3 gene. The second, valproic acid, was found to rescue all of the

behavior abnormalities, including increased sensitivity to amphetamines, Holder said.

"That was unique, and it made us think more about how the treatment is to always try the standard medicine, but by studying the mice, we began to see the pharmacogenetics," he added. "Then we began to understand the genetic cause of their disorders could lead to very specific treatments. From our example, we tested drugs that had been on the market for a very long time, but a priori we wouldn't know if these patients are more likely to respond to Depakote than lithium. It was only with the sort-of basic science that it came to light."

His team is also trying to understand what the genetic abnormities are that lead to neuropsychiatric disorders, like bipolar disorder. In the long term, that could be beneficial in diagnosing and tailoring treatment based on genetic changes or mutations of the SHANK3 gene to individuals that predispose them to bipolar. That, he said, could not only lead to earlier diagnoses, but also earlier treatment with the correct medication.

Targeting a drug

Finding the correct medication takes some work, especially when medications for psychiatric disorders don't just target one receptor or neurotransmitter system.

"Medicines ideally have a fairly clear single mechanism, but in psychiatry, most of the medications have a dozen mechanisms," said Thomas Kosten, M.D., Jay H. Waggoner Endowed Chair in the Menninger Department of Psychiatry and Behavioral Sciences, and professor of neuroscience, pharmacology, immunology and pathology and co-director of the Dan Duncan Institute for Clinical and Translational Research at Baylor.

"It is difficult to make an exact match of a medication to a brain target. Once you have a medication that is specific, you then need a molecular target that the medicine hits," he added.

When that does happen, Kosten said, the patient will say, "Thank you," and the patient will get better, as opposed to, "I took this medication, got a bunch of side effects and I'm no better than I was to begin with, so thank you very much, but I won't take any medication for my disorder anymore."

Kosten's research focuses on substance abuse disorders in which there are dozens of mechanisms, but the disease is clearer in terms of knowing what the brain targets are, the receptor targets, what genetic polymorphisms are in the gene for the receptor, what the function of the polymorphism is and why the medication works on those who have that particular variant of the gene and the receptor.

To him, personalized medicine means selecting subgroups of patients for a specific medication with a specific target in order for that medication to be most effective. Otherwise, the medication isn't likely to do anything.

"Drug companies don't like that message," Kosten said. "No one will buy a new medication if it won't work for 70 percent of those who take it, but if it works for 30 percent of the whole population with that disorder, and you can ID that group ahead of time, those patients will be quite convinced that your medication is worthwhile and doing something."

Putting a plan in action

In order for all of this to come together, Seabrook said it will take tools, technology and buy-in from key stakeholders.

In addition, it will take a lot of data and sophisticated analytics to understand how personalized medicine can work in a real-world setting, said Lynda Chin, M.D., vice chancellor and chief innovation officer of The University of Texas System.

To bring all of that together, she is working on building a digital health infrastructure that includes a cloud-based data interchange on a dedicated health care communication service network with added security and privacy, integrated with a cognitive analytic cloud, so that data from diverse sources can be gathered, securely, for analyses.

"From a care delivery perspective, we need to capture expertise and make sure that knowledge is shared," she said. "We also have to show patients that it will improve their outcome when they give us their data."

We tested drugs that had been on the market for a very long time, but a priori we wouldn't know if these patients are more likely to respond to Depakote than lithium. It was only with the sort of basic science that it came to light.

— JIMMY LLOYD HOLDER JR., M.D., PH.D.

Assistant Professor of Pediatrics in the Section of Neurology at

Baylor College of Medicine





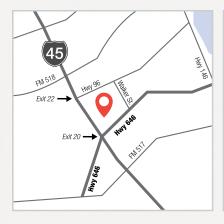
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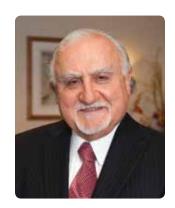
WILLIAM BRIEN, M.D., has been appointed interim president for CHI St. Luke's Health-Baylor St. Luke's Medical Center (Baylor St. Luke's). Brien also serves as vice president of Medical Operations and chief clinical officer at Baylor St. Luke's. As interim president, Brien will oversee the hospital's operational performance and support the joint venture between CHI St. Luke's Health and Baylor College of Medicine.



SCOTT ROSENFELD, M.D., orthopedic surgeon at Texas Children's Hospital, has been elected to serve on the Pediatric Orthopaedic Society of North America (POSNA) Board of Directors as a Junior Member-at-Large for the term 2016-2018. Rosenfeld is director of the Texas Children's Hip Prevention Program, which is a multidisciplinary program focused on the care of hip problems in patients from birth through adulthood. He also is an assistant professor in the Department of Orthopedic Surgery at Baylor College of Medicine.



DENISE CASTILLO-RHODES, M.B.A., executive vice president and chief financial officer of the Texas Medical Center, has been named Nonprofit Businesswoman of the Year by the Houston Business Journal. In addition to overseeing accounting and finance for the largest medical complex in the world, Castillo-Rhodes mentors young women at the University of St. Thomas and has traveled on mission trips to countries like Ghana and Guatemala to help build medical clinics. She serves on the board of directors of the University of St. Thomas, the American Red Cross Greater Houston Area Chapter and is the 2015-2016 chair of the American Heart Association's Go Red for Women campaign.



PHILIP A. SALEM, M.D., oncologist and director emeritus of cancer research at Baylor St. Luke's Medical Center, was honored in April by the president of Mexico for his lifelong commitment to cancer care worldwide. Among numerous additional accolades, Salem was recognized for establishing a program for Mexican oncologists to train in Houston and for helping Mexico build a scientific bridge in cancer research with the U.S.



FRANK G. MOODY, M.D., professor at the John P. and Kathrine G. McGovern Medical School at The University of Texas Health Science Center at Houston (UTHealth), was presented with the 2016 ASA Medallion for Advancement of Surgical Care at the American Surgical Association's annual meeting in recognition of his seminal contributions to surgery. Moody, who helped battle obesity in the 1970s by promoting weight loss surgery, was one of the first bariatric surgeons in Houston.



CHRISTIAN SCHAAF, M.D., PH.D., assistant professor at Baylor College of Medicine's Department of Molecular and Human Genetics, is the recipient of the inaugural Donald Seldin-Holly Smith Award for Pioneering Research from the American Society for Clinical Investigation. Schaaf was honored at the ASCI annual meeting and will deliver a scientific talk at the society's 2017 annual meeting. His research focuses on understanding the genetic and molecular basis of human cognitive and behavioral disorders.



CHRISTOPHER T. RAY, PH.D., has been appointed as the new dean of the College of Health Sciences at Texas Women's University, effective mid-July. Previously, Ray was the associate dean for research at the University of Texas at Arlington (UTA) College of Nursing and Health Innovation. His current research involves geriatric health and finding ways to reduce the risk of falls, increase bone density and lessen the impact of chronic disease. Ray holds a doctorate degree in movement studies from the University of Georgia, and earned both a master's (in human performance and sport studies) and bachelor's degree (in exercise science) from the University of Tennessee, Knoxville.



DORIS A. TAYLOR, PH.D., director of Regenerative Medicine Research and the Center for Cell and Organ Biotechnology at the Texas Heart Institute, was recently honored by the Mississippi University for Women Alumni Association Board and received a MUW Distinguished Alumni Achievement Award. Taylor, who also holds graduate faculty appointments at Texas A&M University and Rice University, is a dedicated educator with close to 30 years of experience teaching and mentoring undergraduates, graduate and medical students, as well as post-doctoral, engineering, cardiology and surgery fellows.



MAKING MEMORIES THAT LAST A LIFETIME

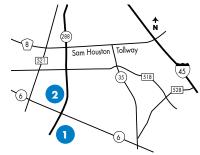
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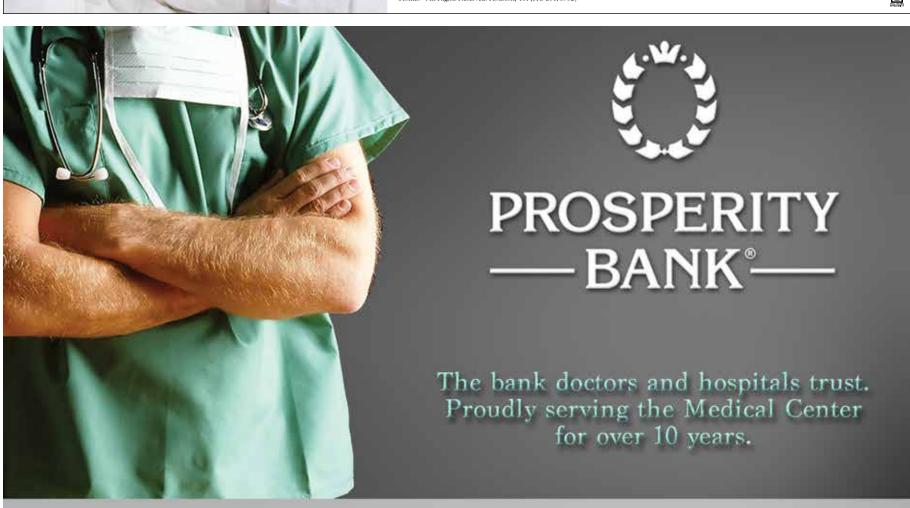






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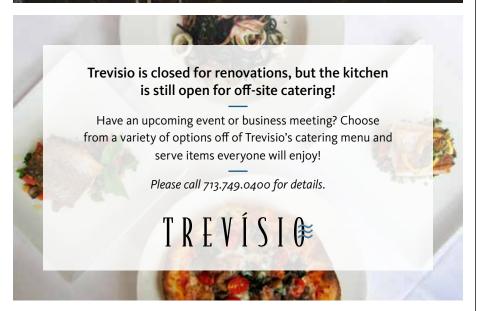


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July 2016

7 TIRR Memorial Hermann Artwork Unveiling with Artist Jared Dunten

Thursday, 5:30 – 7:30 p.m. TIRR Memorial Hermann 1333 Moursund

tirrcommunications@ memorialhermann.org 713-242-2581

AFA Summer Music Conservatory – Symphony Orchestra

Friday, 11 a.m.
Crain Garden at Dunn Tower
(Houston Methodist)
6565 Fannin St.
cacobb@HoustonMethodist.org

713-394-6088

Summer Jazz Workshop – Trinity Episcopal Church Campus

Friday, 1 p.m.
Crain Garden at Dunn Tower
6565 Fannin St.
cacobb@HoustonMethodist.org
713-394-6088

11-15 Faces of Innovation: Global Teen Medical Summit 2016

Monday – Friday, 9 a.m. – 5 p.m. The Health Museum 1515 Hermann Dr. 713-521-1515 Rice University Farmers Market

Tuesdays, 3:30 – 6:30 p.m. Rice University Parking Lot Entrance 13B 5600 Greenbriar Dr. ricefm@rice.edu

16 UTMB BNGAP Academic Medicine Career Development Southeast Texas Regional Conference

Saturday, 8 a.m. – 5 p.m. Jennie Sealy Hospital Education Center 600 Texas Ave., Galveston, TX bngap.org 409-772-3558



JULY: CLEFT AND CRANIOFACIAL AWARENESS AND PREVENTION MONTH

Commonly known as a cleft lip and palate, millions of people around the world are born with the congenital condition that affects the upper lip and soft palate of the mouth, which can impact a child's appearance, speech, teeth, eating, hearing and ability to develop socially.

The cause of cleft lip and palate is still unknown in spite of it being one of the most common birth anomalies in the world, affecting one in every 700 babies born in North America annually. July is nationally recognized as Cleft and Craniofacial Awareness and Prevention month to bring awareness to the condition and promote further research.

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