

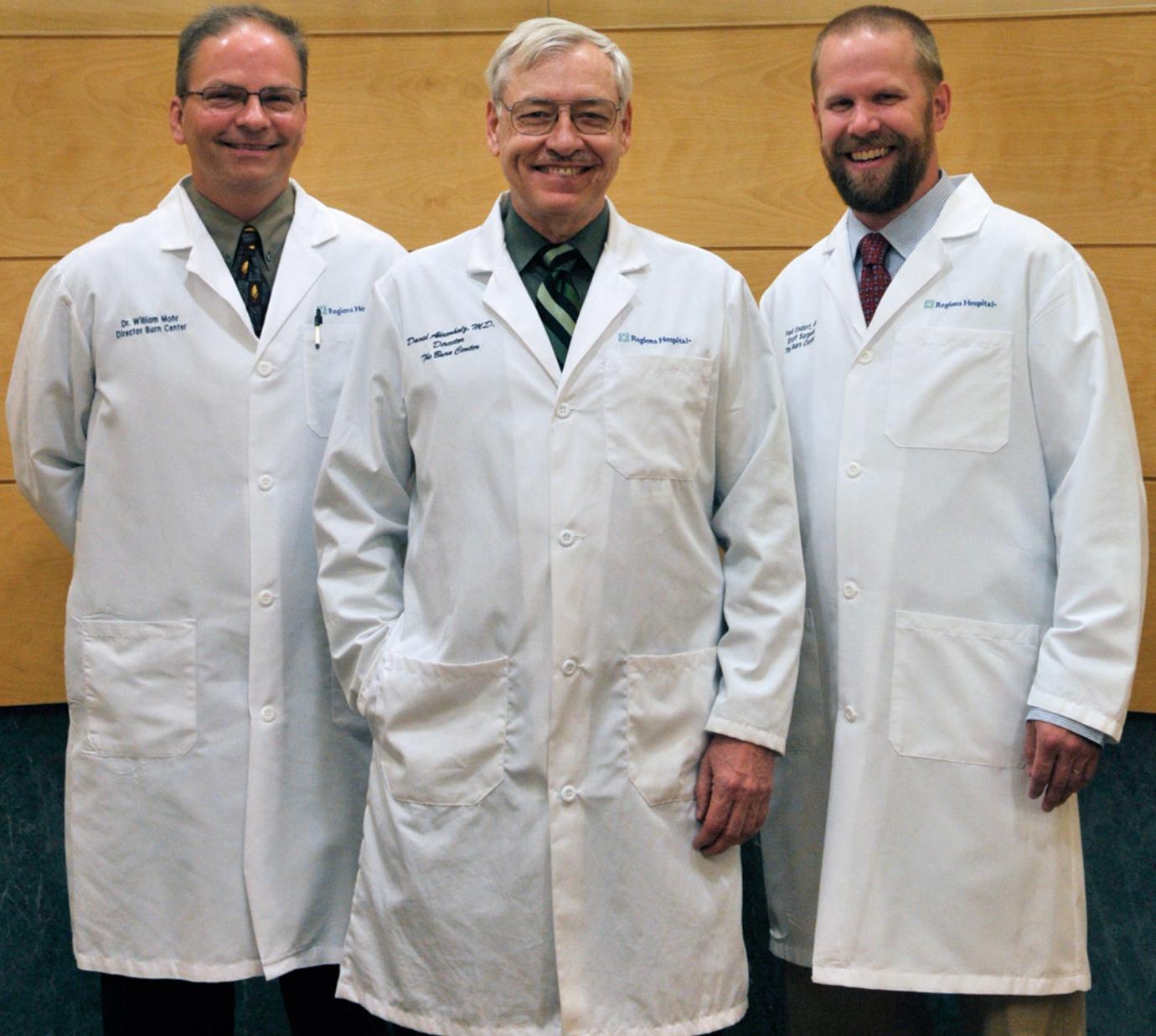
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Regions Hospital Proud History of Burn Care and Innovation

The Burn Center



Regions HOSPITAL

Proud History of Burn Care and Innovation

BURNS ARE DEVASTATING injuries with risks that are distinct from those of traditional trauma injuries. For most trauma patients, survival is determined in the first few days following an injury. For burn patients, the mortality risk is unchanged until half of the burn is healed. This can take as many as 12 weeks for those with massive burns. Patient survival depends upon the vigilance and dedication of an entire team of burn care professionals. Together, the Regions Hospital team possesses more than 150 years of experience.

The Burn Center at Regions Hospital was one of the first dozen burn programs in the nation and celebrates its 50th anniversary this year. When the American Burn Association (ABA) and the American College of Surgeons Committee on Trauma decided to create verification for burn centers in 1995, the center at Regions was one of the original eight to pass the rigorous process that first year. Regions has maintained continuous verification since that time and has also become a destination for out-of-state burn patients. The Burn Center is seven minutes away from the airfield in St. Paul, Minn., and patients arriving at Regions are met by a dedicated burn team.

The burn team consists of physicians, nurses, dietitians, therapists, pharmacists, social workers, child life specialists and counselors. This multidisciplinary team provides treatment in the newly renovated, 18-bed facility at Regions. They work together to care for patients from admission through psychosocial reintegration, and in some cases, they even



The burn center includes therapy space dedicated only to burn patients. The space is steps away from the inpatient unit.

maintain lifelong contact with patients and their families.

“In the burn center, input from every team member matters,” explains Mark Johnston, Burn Program Coordinator. “On daily rounds, we solicit discussion from all disciplines, and every opinion is valued. It is truly a team approach that’s resulted in a very low nurse turnover rate and incredible camaraderie within the overall team.”

“The dedication of the Burn Center staff is the heart of who we are and what we do,”

adds David Ahrenholz, MD, Co-Director of the Regions Hospital Burn Center and President-Elect of the ABA. “We are proud of the history of burn care and innovation our team provides.”

Unique Care

Regions was one of the first burn programs to dedicate rehabilitation therapy space within the burn center. At many hospitals, patients must leave the burn unit for therapy in an outpatient setting that serves a variety of patients. Regions offers

comprehensive care in a 17,000-square-foot center that even includes two sleeping rooms for family members.

“Burn patients are distinct from other patients who might need therapy after surgery; their bandages and appearance are more stigmatizing,” explains William Mohr III, MD, Co-Director of the Regions Hospital Burn Center. “It’s hard enough to concentrate on the therapy itself, so having a designated therapy space — only steps away from their rooms — where they can feel safe is a great benefit to our patients.”

Another benefit for burn patients and their families is talking to someone who has been in their situation.

“We feel it is critically important for patients to talk with someone who has lived through burn recovery and can address sensitive issues like coping with public reaction to appearance,” says Dr. Ahrenholz.

The staff at the Regions Hospital Burn Center includes a burn counselor who screens for nightmares and hypervigilance, which is common in burn patients and can lead to post-traumatic stress disorder (PTSD). The rate of PTSD among civilian burn patients is as high as that seen in military personnel. Long-term follow-up is provided by several therapists who specialize in PTSD recovery, including a former burn patient.

The Burn Center at Regions also offers psychosocial programs, such as individual and family camps for kids. It sponsors families to attend the annual World Burn Congress as well. Other psychosocial programs offered include: Survivors Offering Assistance in Recovery (SOAR), Behavioral and Enhancement Skills Training (BEST), and Sexual Concerns and Intimacy Needs (SCIN). These programs address community integration, the stigma associated with the injuries, and personal relationships. Support groups for those with thermal burns and electrical injuries also meet regularly.

“Unlike thermal burns and other traumas, low voltage electrical injuries may leave few, if any, marks on a patient,” Dr. Ahrenholz explains. “Our brain runs on electricity generated in tiny chemical packets lasting 15 milliseconds, and our nerves are designed for electricity flowing



A dedicated burn therapist prepares a plaster mold that mirrors the patient’s face. A transparent facial orthotic (TFO) mask specific to the patient will be made from the mold. The TFO allows for better monitoring of the scar remodeling process, which results in a better cosmetic outcome for the patient.

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in only one direction. When we sustain an electrical injury, the current is continuous, and the flow of electricity through the nerves is reversed. It’s like hooking the wires up backward to your car battery. The spectrum of resulting symptoms is incredibly complex and includes neuropathic pain, short-term memory loss and frontal lobe symptoms.

“These patients can suffer from anxiety, panic attacks, depression, nightmares and problems sleeping. We provide ongoing medical follow-up and social support for these patients, and our electrical burn injury support groups are key to their recovery.”

Advanced Treatments for Scarring

The process for healing after a burn injury is affected by multiple factors. Those factors include: the age and genetic makeup of the patient, the depth of the initial burn and how quickly the burns heal, and the thickness of the skin grafts and how stable they remain. The battle for functional and cosmetic outcomes



PHOTOS COURTESY OF REGIONS HOSPITAL

The patient, Chris, wore a TFO for 22 hours a day and took it off only for bathing and eating. The minimal scarring seen here can be attributed to the TFO and her dedication to wearing it.

after a burn injury goes on for a year in adults, but can persist in children until the growth period has ended.

“Scars can have a significant impact on quality of life,” Dr. Ahrenholz says, “especially facial scars.”

Regions set out to improve facial burn scar outcomes by developing a transparent facial orthotic (TFO) mask that allowed the team to control the pressure applied to the face. The opaque masks available didn’t enable visual monitoring of scar development, but the transparent mask allows the team to view where pressure is needed.

“With the TFO mask, we can ensure continuous mask pressure, and scar tissue will decrease in thickness,” Dr. Mohr says. “But if the patient stops wearing the mask or it isn’t adjusted to maintain the needed pressure, blood flow to the scar will increase and the inflammatory process will be prolonged.”

Scarring can also be a concern at the donor site.

“Resurfacing a burn means creating a skin graft using a donor site that is subject to its own scarring process,” he adds. “Our challenge is to achieve the best possible skin graft while minimizing disruption to the donor sites.”

Regions was one of 12 national centers to participate in the first clinical trial for a bioengineered dermal substitute and the first burn unit in the upper Midwest to use cultured epidermal cells. Epidermal cells were not an ideal solution, but until dermal substitutes became commercially available, expertise with epidermal cells meant the difference between life and death for some burn patients. Even with dermal substitutes commercially available, many centers refrain from using them because they are labor intensive and have a steep learning curve. Regions Hospital’s Burn Center regularly and successfully uses dermal substitutes to achieve shorter hospital stays and better functional outcomes.

The Regions Hospital Burn Center also has an exemplary 7 percent surgical revision rate for hand grafts in children. The next lowest rate reported in the country is 20 percent. The burn surgeons at Regions attribute their success to the use of a contact

casting technique and the skill of their burn therapists. The cast goes on at the end of the operation, keeping the hand flat until the scar matures in six to eight weeks. Then, therapists work with patients to maintain range of motion.

Innovative Protocols

In the first 24 hours following a burn injury, IV fluids are critical to prevent burn shock, but administering the correct fluid amounts can be a challenge. Providing too little fluid is lethal, and too much fluid can create its own set of complications, including pulmonary failure and abdominal compartment syndrome (ACS), formerly reported in almost a third of major burn patients. The strategy for monitoring and administering fluids at the Regions Burn Center utilizes the team member with the most contact with the patient — the nurse — to adjust fluid volumes based on described parameters. This nurse-driven resuscitation protocol has become a model for other burn centers and has virtually eliminated ACS in burn patients at Regions.

Regions has also pioneered frostbite treatment protocols. The Burn Center is a global leader in the use of thrombolytic agents to treat frostbitten extremities. Interarterial therapy is key to delivering the highest safe concentration of the agent directly to the area of clot, and angiography confirms return of the blood flow. When treatment is initiated within the first 24 hours, approximately 80 percent

of amputations can be prevented. This treatment protocol has been adopted by several burn centers nationally.

Education and Prevention

Noting the only good burn is the one you prevent, the burn team at Regions Hospital partners with schools and community organizations to provide burn education and prevention information. An interactive website for children and their parents, campfire safety education in state parks, and educational videos have helped achieve some of their goals.

“Twenty years ago, the ABA reported 2 million burns a year,” Dr. Mohr says. “Today, around half a million people seek treatment from burns annually. We are making progress with prevention strategies to reduce major injuries and fatalities.”

“The more burns — especially severe burns — we can prevent, the better,” states Dr. Ahrenholz. “My focus as ABA President will be burn prevention education for the general public, as well as education for incoming patients and their families. We not only want to continue to research the best care for burns; we want to slow the pace of burn injuries overall.”

Burn surgeons and staff are available 24/7 for consultations and transfers at 1-800-922-BURN. For more information about burn prevention or to obtain copies of burn treatment protocols, contact Mark Johnston at 651-254-1562. Regions Hospital is part of the HealthPartners Family of Care. ■



Members of the Regions Hospital Burn Center team