

Shriners Hospitals for Children Past, Present, and Future

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Introduction

Shriners Hospitals for Children (SHC), previously Shriners Hospitals for Crippled Children, from its beginning in 1922, has provided care to over 1.4 million children. The history of this great organization, from its inception to the present, is an intriguing story. Since it is approaching its centennial, POSNA, with whom Shriners has always had a close relationship, requested an article summarizing its history, contributions, and future. The authors are pleased and honored to provide this information.

Early Years 1919-1927

Although the Shriners' fraternity (The Ancient Arabic Order of Nobles of the Mystic Shrine (AAONMS), was founded in 1872 as an outgrowth of Masonry, it wasn't until 1919 that the charitable mission concept of helping children began. In that year, Freeland Kendrick, the Imperial Potentate of the AAONMS made a visit to the Scottish Rite Hospital for Crippled Children in Atlanta, GA (Figure 1). He became aware of the overwhelming needs of children with crippling diseases in North America. He proposed establishing "The Mystic Shriners Peace Memorial for Friendless, Orphaned and Crippled Children." The resolution never came to a vote.

In June 1920, at the Imperial Session in Portland, OR, he changed his resolution to one establishing "Shriners Hospital for Crippled Children" to be supported by a \$2 yearly assessment from each Shriner. Conservative Shriners expressed doubts about the Shrine assuming this kind of responsibility. Prospects for approval were dimming when Noble Forrest Adair of Yaarab Temple in

Atlanta, GA, who had been instrumental in beginning the Scottish Rite Hospital in Atlanta in 1915, rose to speak. During his speech, he stated, "I was lying in bed yesterday morning about 4 o'clock . . . and some poor fellow who had strayed from the rest of the band . . . stood down there under the window for 25 minutes playing 'I Am Forever Blowing Bubbles.'" He said that when he awoke later, "I thought of the wandering minstrel and I wondered if there were not a deep significance in the tune that he was playing for Shriners, 'I Am Forever Blowing Bubbles.'" He noted, "while we have spent money for songs and spent money for bands, it's time for the Shrine to spend money for humanity."



Figure 1.
Freeland Kendrick

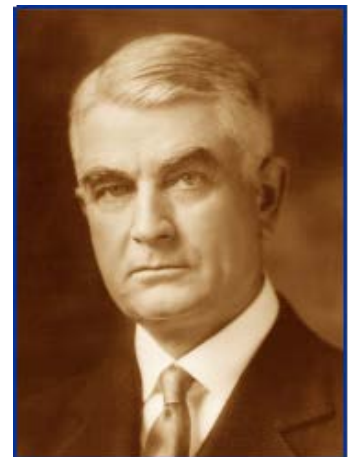


Figure 2.
William J. Mayo, MD

He indicated that he would gladly reimburse any Shriner the \$2 assessment if they really objected to paying it. He sat down to thunderous applause. The whole tone of the

session had changed. The resolution passed unanimously!

A committee was organized and charged with determining a site for the central or first hospital. After months of deliberation, the committee concluded that there should be a network of hospitals throughout North America, not just one hospital focusing on orthopaedically crippled children. This recommendation came from none other than William J. Mayo, MD, from Rochester, MN, a Shriner (Figure 2). It was an idea that appealed to Shriners, who liked to do things in a big and colorful way. The proposal was passed in 1921. Shriners Hospitals for Crippled Children had begun.

First Hospitals 1922-1927

The cornerstone for the first hospital in Shreveport, LA, was placed in early 1922 (Figure 3). Thirteen more hospitals were added in quick succession from 1922 to 1927. Their locations and opening years are presented in Figure 4.

The first patient to be admitted to the Shreveport Hospital in 1922 was a little girl with a club foot who learned to walk on the top or dorsum of her foot. The first patient admitted to the Twin Cities Hospital in 1923 was a Black Foot Indian child with poliomyelitis. Many more children with polio were admitted to the hospitals.

Later Hospitals 1928-1997

After 1927, seven additional hospitals were added (Figure 5). The Winnipeg Hospital was closed in 1977 due to healthcare reform in Canada. The newest hospital location was from a decision to move the San Francisco Hospital to Sacramento in 1997 during the period of hospital rebuilding or major renovation.

The initial rules for acceptance were that a child must be from a family unable to pay for orthopaedic treatment or be under the age of 14 years (This was later raised to 18 years of age).



Figure 3. Laying of the cornerstone for the Shreveport Hospital

1922	1925
Shreveport	Salt Lake City
1923	Montreal
Honolulu	Springfield
Twin Cities	1926
San Francisco	Chicago
1924	Philadelphia
Portland	Lexington
St. Louis	1927
Spokane	Greenville

Figure 4. Thirteen hospitals were added from 1922-1927.

Clinical Program Development

The major focus of SHC has been in pediatric orthopaedics from its inception to today. As patient volumes increased, services lines have expanded to cover additional pediatric surgical subspecialty needs.

Pediatric Orthopaedic Program

The scope of our pediatric orthopaedic programs has changed over almost 100 years of the existence of SHC. Certain conditions such as poliomyelitis and osteomyelitis are no longer dominant diagnoses due to the development of immunizations and antibiotics. Orthopaedic research continues to change our scope of practice. Today spinal deformities, neuromuscular disorders, limb length inequalities, hip and foot deformities, and other diagnoses predominate. Our changes mirror what has occurred in our specialty in North America and other developed nations worldwide. Other less fortunate countries have a different distribution of diagnoses. This has led to the development of our outreach programs to assist these children and to provide educational programs for their care providers.



Orthopaedic Research

From 1950 to 1960, donations and funds for the orthopaedic care of children increased rapidly. At the same time, the waiting lists of new patients for admission to Shriners Hospitals began to decline due to the polio vaccine and the development of new antibiotics. This surplus of money resulted in the Shrine leadership looking for other ways to help children. The hospitals had always been engaged in clinical research, and in the early 1960s, the Shrine aggressively entered the structured

1945	1967
Mexico City	Erie
1952	1985
Houston	Tampa
Los Angeles	1997
Winnipeg – Closed 1977	Sacramento – Moved from San Francisco

Figure 5. Seven additional hospitals were added between 1928-1997.

research field and began earmarking funds for research projects. By 1967, Shriners was spending \$20,000 annually on orthopaedic research. The commitment to research has dramatically increased over the years. By 1977, that amount had grown to \$223,000, and by 1980, it was \$2 million. Today the commitment is approximately \$37 million annually (2020). Since the beginning of the research program, \$392 million has been spent on research projects. The mechanism of deciding who receives the grant funding is modeled after the NIH process. SHC has Marc Lalande, PhD, as Vice President of Research Programs, as well as a Research Advisory Board to guide and coordinate clinical and basic research. Their efforts result in multiple national and international presentations, as well as publications from our hospitals each year. In 2020, the best basic science research awards were received by Michelle Welborn, MD (Portland, OR), at IMAST, SRS, and POSNA. Dr. Welborn’s research (Shrine funded) was on the CXM biomarker to measure the velocity of bone growth. Kelsey Davidson, MD (Chicago, IL), received the MacKeith Press Promising Career Award at AACPDM. Dr. Davidson’s research (partially Shrine funded) was on Botulinum toxin A and osteopenia in experimental animals. There are also many collaborative efforts with our academic partners as well as other institutions. For example, there are two major studies in collaboration with Georgia Tech University, including the use of exoskeletons in spinal cord injury patients and development of a research database. We also have numerous study groups within

SHC. These include spine, cerebral palsy, brachial plexus, osteogenesis imperfecta, and burns. A new basic science genomics research facility was opened in Tampa, FL, earlier this year.

Burn Programs

The expansion of the orthopaedic work was not enough for Shriners. By early 1960, they had sufficient funds to further expand their philanthropy. The only question was, “What unmet need could they fill?” A special committee was established to explore areas of need. It was determined that the treatment of seriously burned children was inadequate and limited. A proposal was brought before the Imperial Session in Toronto, ON, in 1962 to “construct, establish, and operate one or more hospitals for the care and treatment of curable crippled children afflicted with acutely dangerous burns, and for research, activities, and training programs related thereto . . .” The resolution was passed with a unanimous vote. Shriners Burns Hospitals had begun.



On November 1, 1963, a seven-bed wing was opened in the John Sealy Hospital on the campus of the University of Texas Medical Branch in Galveston, TX, as an interim center.

Similar interim centers followed in Cincinnati, OH, and Boston, MA. Between 1966 and 1968, three 30-bed hospitals (Boston, MA; Cincinnati, OH; and Galveston, TX) were built in these locations. In 1997, a fourth center was opened in the new Northern California Hospital in Sacramento in conjunction with the move of the San Francisco Hospital to this location (Figure 6).

All four of the burn hospitals have very productive basic science and clinical research programs designed to better understand and manage acute burns and inhalation

Burn Hospitals
1963
3 interim facilities
1966
Galveston
1968
Boston
Cincinnati
1997
Northern California

Figure 6. Four burn hospitals were added 1963-1997.

Spinal Cord Injury Hospitals
1980
Philadelphia
1984
Chicago
1997
San Francisco

Figure 7. Three hospitals designated as spinal cord injury hospitals were added 1980-1984.

injuries. The combination of excellent clinical care and innovative research has had a major impact on the outcomes of children with severe burns throughout the world.

Spinal Cord Injury Program

In the late 1970s, the Shrine leadership, encouraged by Howard H. Steel, MD, then the Chief of Staff of the Philadelphia Hospital, identified a need for centers that would focus on providing rehabilitative care for children and adolescents suffering from spinal cord injuries. There were none in existence in North America that

focused on this age group. The first unit was opened in 1980 at the Philadelphia Hospital. In 1984, two more units were added, one in Chicago and the other in San Francisco, which was moved to Sacramento in 1997 and is now known as the Northern California Hospital (Figure 7). It is the only facility in which all three service lines (orthopaedics, burns, and SCI) are available.

Cleft Palate and Lip Program

The Cleft Palate and Lip Program is the latest addition to the SHC service line. It represents a combined otolaryngology and plastic surgery endeavor at our hospitals with academic affiliates. Thus far, it has been a significant success and these programs continue to grow. There are currently nine hospitals offering cleft lip and palate services.

Additional Services

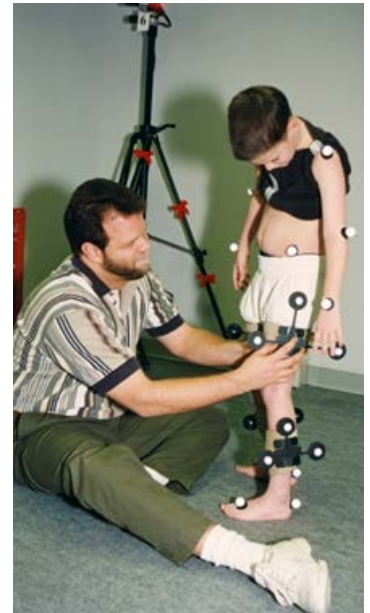
To complement the care to the children, many hospitals have in-house orthotics and prosthetics laboratories (Figure 8) and movement analysis laboratories (Figure 9). The system of 22 hospitals was now complete.

Present Years 1986-2020

Winston Churchill once stated, “To improve is to change, so to be perfect is to have changed often.” Significant changes have been made to the SHC system during the period 1986-2020. In 1997, the decision was made to relocate the San Francisco Hospital to Sacramento and name it the Northern California hospital. It was also decided to add burns and spinal cord injury to the services provided. It was also equipped with a basic science research laboratory.

Director of Medical Affairs/ Chief Medical Officer

In 1986, Newton C. McCollough III, MD (Figure 10), was selected as the first, full-time Director of Medical Affairs. Prior to that, Carroll B. Larson, MD (University of Iowa), and Frank H. Stelling, MD (Greenville, NC), served in a part-time capacity based at their home institutions. Dr. McCollough recognized that to be truly



Figures 8 and 9. Many hospitals have in-house orthotic and prosthetics laboratories, as well as movement analysis laboratories.

effective, the hospitals needed medical staff whose primary focus was Shriners Hospitals.

This meant the recruitment of full-time surgeons for most of the orthopaedic hospitals. Many also recruited full-time anesthesiologists. In our burn hospitals, it was felt that it was important for our burn surgeons to continue with their commitment to the associated adult burn centers at the various affiliated academic institutions. Dr. McCollough retired in 2000 but has been followed by other very successful pediatric orthopaedic surgeons as Chief Medical Officer and Vice President Medical Affairs (Figure 11).



Figure 10. Newton C. McCollough III, MD

Hospital/Service Chiefs of Staff

Many of the past and present Shrine surgeons are recognized as national and international leaders in their respective fields and have held leadership positions in or-

thopaedic and burn organizations. These include the presidencies of the AOA (2), AAOS (1), POSNA (10), SRS (4), ABA (12), and other organizations (Figure 12).

In 1996, after 7 years of discussion, the name was officially changed to “Shriners Hospitals for Children (SHC)” The word “crippled” was removed as it was no longer felt to be an appropriate term to use for the children treated in the hospitals. In reality, it carried a negative connotation which was felt to detract from the fact that children that come to Shriners Hospitals for care are being helped to realize their full potential despite whatever “disability” they may have. This was about that same time a strategic plan was developed which clearly indicated the ongoing commitment to not only high-quality patient care but also teaching and research. It continued the same mission of providing this care at no cost to the family.

Hospital Information System

In 1999, as a result of the two Institute of Medicine Reports, To Err is Human and Crossing the Quality Chasm, a major commitment of \$40 million was made to design and implement a hospital information system. William F. Bria II, MD, an internationally respected expert in medical informatics, was hired in 2006 as the first Chief Medical Informatics Officer to guide and direct the effective utilization of the information system with the ultimate goal of improving the care of children in the 22 hospitals. He was eventually succeeded by Richard Paula, MD, who continues in that position. He is assigned to the Medical Affairs Division. Current responsibilities include dissemination and coordination of medical information throughout SHC such as telehealth, COVID-19 monitoring, assessment of new technology purchases, and others.

Quality & Safety

Recognizing the critical importance of system-wide patient safety and performance improvement, Don Lighter, MD, a highly respected expert in this area, was hired initially as the Corporate Director of Quality & Performance, later changed to the Corporate Medical Director

Director of Medical Affairs/Chief Medical Officer
1986-2000
Newton C. McCollough III, MD
2000-2012
Peter F. Armstrong, MD
2013-2019
Ken Guidera, MD
2019-2020
George H. Thompson, MD – Interim
2020-Present
Francis Farley, MD

Figure 11. Many successful pediatric orthopaedic surgeons have followed Dr. Newton McCollough as Director of Medical Affairs/Chief Medical Officer.

of Quality & Safety. In this capacity, he had oversight of the medical management program as Shriners transitioned from a charitable organization to one which bills for services. He worked with all aspects of physician engagement, including the development of clinical guidelines, measurement systems, compensation programs, and integrated care/case/quality management.

Academic Mission

A strong part of the mission will always be the sharing of knowledge and experience with others through teaching, presentations, and publications. Most of the hospitals are affiliated with major children’s hospitals and universities. They provide education and training to physicians from various disciplines at various levels. Several allied health professionals also receive training in the hospitals. These relationships are a cornerstone of SHC academic mission.

Outreach Programs

In some instances, the hospitals cover huge geographic areas. To help bring the services closer to the patients, outreach clinics were begun. These currently exist in

Figure 12. Many past and present Shrine surgeons are recognized as national and international leaders in their respective fields and have held leadership positions in orthopaedic and burn organizations. The current Chiefs of Staff are listed at right.

other states, including Alaska and other countries such as Mexico, Cyprus, Guatemala, the South Pacific, and other locales. These were then supplemented by the establishment of telehealth services initiated by Peter F. Armstrong, MD, during the time he was Chief of Staff of the Intermountain (later changed to the Salt Lake City) Hospital.

The focus of SHC has always been to ensure that the hospitals have the equipment and resources necessary to provide the very best care for the children who come there.

Status of Billing for Services

However, with the significantly increasing cost of providing healthcare and the operational costs of maintaining 22 hospitals, the leadership began to carefully analyze the options available to them to address this issue. Among the options considered was closing several of the hospitals. For local Shriners, who were passionate about their hospital and the care provided to “their” children, the idea of closing hospitals was not well received.

In July 2009, a major, transforming decision was made to accept both private and government insurance for services provided in the hospitals. Charity care and financial assistance programs were implemented to fulfill the commitment of “providing care to children with neuromusculoskeletal conditions, burn injuries, and certain other special healthcare needs regardless of the families’ ability to pay.”

Change in Hospital Designations and Locations

In 2019, SHC decided that it was important that each hospital match the American College of Surgeons (ACS) facility designations. For specialty hospitals

Current Chiefs of Staff (As of Jan. 1, 2021)	
Boston	Rob Sheridan, MD – Interim
Chicago	Purnendu Gupta, MD
Cincinnati	Petra Warner, MD
Erie	Tim Ward, MD
Greenville, SC	Mike Wattenbarger, MD
Honolulu	Jonathan Pellett, MD - Interim
Lexington	Henry “Chip” Iwinski, MD
Mexico City	Felipe Haces, MD
Montreal	Jean Ouellet, MD - Interim
Pasadena	Bob Cho, MD
Philadelphia	Scott Kozin, MD
Portland	Robert “Matt” Bernstein, MD
Sacramento	Michelle James, MD – Orthopaedics, David Greenhalgh, MD – Burns
Salt Lake City	Kristen Carroll, MD
Shreveport	Cary Mielke, MD
Spokane	Glen Baird, MD
Springfield	Jim Mooney, MD
St. Louis	Scott Luhmann, MD
Tampa	Maureen Maciel, MD
Texas	Bill Phillips, MD – Orthopaedics, Steve Wolf, MD – Burns
Twin Cities	Purnendu Gupta, MD - Advisor

these include centers of excellence, inpatient hospitals, ambulatory surgical centers, and clinics. This designation and reorganization process is now underway. It will make each facility more efficient and lower costs while still providing excellent care. It also matches the current shift to outpatient services that is occurring across North America. At this time, the transition of the Erie and Tampa hospitals to clinics has been completed. The Houston Hospital has been merged with Galveston Burn Hospital to create the new Texas Hospital. The Cincinnati Burn Hospital, Cincinnati, OH, has merged with the Dayton Children's Hospital in Dayton, OH, and will be operational in early 2021.

2020 Covid-19 Pandemic

This has been a difficult year for SHC, just as it has for all pediatric facilities in North America. It has been even more challenging as SHC has 22 hospitals in 18 states, one Canadian Province (Montreal) and one in Mexico (Mexico City). Patient safety has been challenging, elective surgery drastically reduced, and outreach clinics cancelled. Fortunately, it has dramatically increased our use and efficiency of telehealth to maintain communication with patients and families. SHC has survived along with all other pediatric programs and is anxious to return to more normal activities.

The Future

The story so far has been one of 98 years of progression of our system to the point that we are recognized, as previously stated, as being among the leaders in the world of pediatric orthopaedics, pediatric burns, and pediatric spinal cord injury. In fact, in 2020 five of our programs were rated in the top 50 pediatric orthopaedic programs in the United States by *U.S. News and World Report*. This included University of California-Davis/SHC Northern California #8, St. Louis Children's Hospital/SHC St. Louis #12, Primary Children's Hospital/SHC Salt Lake City #37, University of Pittsburgh Medical Center/SHC Erie #45 and Doernbecher Children's Hospital/SHC Portland #50. We anticipate more programs being ranked next year due to changes in reporting. Overall, there is tremendous potential for further

enhancement at SHC, but the system faces some very significant challenges. The cost of healthcare has skyrocketed! The fact that we are dealing with increasingly complex patients and performing increasingly complex procedures, has driven up the operating costs for our hospitals. At the same time, healthcare has rapidly progressed from inpatient services to outpatient services. The way we manage conditions has changed with intense efforts to minimize the length of stay in the hospital. In addition, insurance providers have defined what qualifies as an "inpatient facility." That has resulted in a dramatic reduction in the utilization of beds in many of the hospitals. Because of these and other factors, further changes to the system are anticipated. This includes further redesignation of our hospitals.

As is clearly established in the Mission & Vision Statements, Shriners Hospitals for Children looks forward to the next 100 years of serving children!

Mission Statement of Shriners Hospitals for Children

- Provide the **highest quality care** to children with neuromusculoskeletal conditions, burn injuries, and other special healthcare needs within a compassionate, family-centered, and collaborative care environment.
- Provide for the **education** of physicians and other healthcare professionals.
- Conduct **research** to discover new knowledge that improves the quality of care and quality of life of children and families.

This mission is carried out without regard to race, color, creed, sex or sect, disability, national origin, or ability of a patient or family to pay.

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2. Shimberg, Elaine Fantle, *A Heritage of Helping*, published by Shriners Hospitals for Children 1996