Surgeons research better ways to treat trauma

Orthopaedic Surgeons at Campbell Clinic and Le Bonheur Children’s are caring for an increasing number of pediatric trauma victims – and using their work to publish trauma-related research and develop disaster preparedness plans for the orthopaedic community.

Volumes have increased, partly, because of Le Bonheur Children’s new Level 1 pediatric trauma designation by the American College of Surgeons. The hospital is the only Level 1 trauma center in a 400-mile radius.

Studying Trauma

Orthopaedists have published several studies on trauma-related orthopaedic injuries in recent months – and continue to develop new areas of investigation. Their studies include:

**Published:**

- Use of Taylor Spatial Frame in Pediatric Orthopedic Surgery: Sawyer, Warner, Kelly. COP vol 22 # 2 pp. 131-141 March/April 2011

Ongoing trauma-related research in areas of:

- Traumatic atlanto-occipital dislocation
- Gunshot wound associated spinal and extremity fractures
- Femur fracture results with Pavlik harness treatment
- Pediatric spinal fractures
- Fat emboli syndrome following long bone fractures
- Obesity and traumatic lower extremity long-bone fractures
- Environmental and temporal factors affecting pediatric orthopedic injuries
- Media and social media and other collateral ligament anatomy

Treating Trauma

In 2011, Le Bonheur received a Level 1 designation from the American College of Surgeons. Since then, trauma cases have increased significantly at Le Bonheur Children’s.

**Blaine Mabry: Trauma**

Fifteen-year-old Blaine Mabry of Savannah, Tenn., was rushed to Le Bonheur Children’s via helicopter last September after a 20-foot fall from a homemade zip line in his backyard.

Blaine landed on his left side, and when he tried to stand up, the pain was unbearable. Blaine’s mother, Tammy, was alerted by one of his friends and rushed to his son’s side as they waited for paramedics to arrive.

“We worried he would go into shock,” said Tammy. “His pain was so bad he was covered in sweat. He kept telling me to pray.”

Blaine had an open fracture to his left femur and a broken left wrist. Once at Le Bonheur, doctors told the family Blaine would need immediate surgery to repair the fractures.

Blaine underwent six surgeries at Le Bonheur – operations that included external fixation and rodding of his left femur and resetting and casting of his left wrist.

“Blaine had a severe open fracture with a great deal of contamination,” said Le Bonheur and Campbell Clinic Pediatric Orthopaedic Surgeon James Beaty, MD.

Blaine returned home after a three-week stay at Le Bonheur, but a serious infection at the fracture site brought him back to the hospital only weeks later. This time, Blaine underwent another three operations to clean his wound, and he was placed on several antibiotics.

“We knew it was serious. He could lose his leg,” said Tammy. Tammy was amazed by Blaine’s positive attitude throughout the ordeal. Even if he had to get a prosthetic leg, Blaine said, he would walk again.

As the infection started to heal, Blaine was sent home after three weeks, where he continued physical therapy. Within one month, Blaine was able to walk with the help of crutches.

Today, Blaine is doing well, says Tammy. He still walks with a slight limp and continues to see Beaty every two months to monitor his progress. A freshman in high school, Blaine was most excited to return to school.

“We are so amazed by his recovery and his determination to get better after his accident,” said Tammy. “We are so grateful to Le Bonheur and Dr. Beaty.”
Nurse practitioners present research, expertise

Nurse practitioners with Le Bonheur Children’s Hospital are sharing their research about easing patient anxiety and preventing post-operative constipation with fellow clinicians.

In May, Leslie N. Rhodes, PNP-BC, and Donna C. Scott, PNP-BC, presented posters at the 2012 Pediatric Orthopaedic Practitioners Society meeting in Denver. Rhodes presented “Anxiety in Posterior Spinal Fusion Surgery for Patients with Adolescent Idiopathic Scoliosis,” which demonstrates the benefits of a pre-hospitalization tour in easing the anxiety of patients and parents. Scott presented “Post-operative Constipation in Pediatric Orthopaedics: A Pilot Study Comparing Miralax to Mineral Oil,” which will use a pediatric-friendly modality of pudding and ice cream to determine whether Miralax or mineral oil is more effective in preventing constipation in post-op patients. Rhodes and Scott partnered together on both studies and also presented these posters at the April Sigma Theta Tau Nursing Conference at University of Memphis.

The pair led a session titled “Office Orthopaedics: What to Do for the Child with a Foot Problem” in November at Le Bonheur’s Pediatric Orthopaedics: Common Conditions and Injuries of the Lower Extremity in Children and Adolescents conference. Rhodes also facilitated a roundtable discussion on pediatric sports medicine at the 2012 Pediatric Orthopaedic Practitioner’s Society Annual Conference held in conjunction with the Pediatric Orthopaedic Society of North America’s annual conference.

Pending IRB approval, Scott is implementing a study that aims to find effective interventions for impacting musculoskeletal disorders related to childhood obesity.

Orthopaedic surgeons at Campbell Clinic and Le Bonheur Children’s sit on national orthopaedic committees. They include:

Jeffrey R. Sawyer, MD
American Academy of Orthopaedic Surgeons (AAOS): Board review
Pediatric Orthopaedic Surgeons of North America (POSNA): Practice Management Committee, Membership Committee
Chest Wall and Spine Deformity Study Group

William Warner, MD
POSNA Trauma and Prevention Committee
Clinical Orthopedic Society, Board of Directors, president-elect

Derek Kelly, MD
POSNA, Trauma and Prevention Committee
POSNA, Media and Public Relations Committee
International Perthes Study Group, IRB Committee

James Beaty, MD
Orthopaedic Research and Education Foundation, Board of Directors
Journal of Bone and Joint Surgery, Board of Trustees

continued from on page 1

Surgeons Aid in Disaster Preparedness

Pediatric Orthopaedic Surgeons Derek Kelly, MD, and William Warner, MD, are part of a national effort to increase disaster preparedness in the field of pediatric orthopaedics. Kelly and Warner sit on the Pediatric Orthopaedic Society of North America (POSNA) committee on Trauma and Prevention — a group that focuses on improving the treatment and prevention of orthopaedic injuries in children through education and leadership.

In response to numerous natural and terrorist disasters in the past decade, Warner and Kelly helped lead the committee through two major educational endeavors — a short review at the POSNA annual meeting on the current state of disaster response in pediatric orthopaedics and a review paper with other committee members that focused on improving awareness of issues surrounding pediatric orthopaedic disaster response and encouraged increased participation in disasters.

“We know that children are particularly exposed in times of crisis and sometimes lack basic survival skills,” Kelly said. “We want to make sure we equip the pediatric orthopaedic community to care for these children in times of disaster.”

Kelly was part of a nine-person team from Le Bonheur who provided disaster relief in Haiti following the 2010 earthquake. The team, stationed near Port Au Prince, treated several cases of crush injuries, open fractures and amputations.

Beaty receives POSNA's Distinguished Achievement Award

Pediatric Orthopaedic Surgeon James Beaty, MD, recently received the 2012 Distinguished Achievement Award from the Pediatric Orthopaedic Society of North America (POSNA).

Beaty, who is the award’s 25th recipient, was awarded at POSNA’s annual meeting on May 17 in Denver. Past recipients include Stuart Weinstein, MD, Vern Tolo, MD, Newt McCullough, MD, Mercer Rang, MD, Walter Blount, MD, and Robert Salter, MD, among others. Former Campbell Clinic physician Alvin J. Ingram, MD, received the Distinguished Achievement Award in 1990.

Winners are awarded based on their leadership and achievements in the field of pediatric orthopaedics.
Team approach promotes good outcomes

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cientific staff members in Le Bonheur’s orthopaedic operating suites foster an environment of patient care that emphasizes teamwork, reducing the risk of adverse outcomes, surgical site infection, delayed post-operative pain medication and even patient anxiety. nurse anesthetist Charlene Benz and OR nurses Cheryl Perkins and Leslie Blain agree that planning, communication and flexibility are the cornerstones of their team dynamic.

“Our surgical team members are constantly seeking to improve and find better, safer and more efficient ways to do things,” said Jeffrey Sawyer, MD. “Examples of their efforts include patient padding and protection during surgery, the administration of antibo-

Taryn Krier: Spinal fusion

Thirteen-year-old competitive swimmer Taryn Krier placed third out of 80 competitors at a recent Memphis-area 50-meter backstroke contest. And she was the only swimmer who underwent spinal fusion surgery seven months prior.

Taryn was 7 years old when her pediatrician detected a slight curve in her spine. An X-ray to see whether Taryn had pneumonia revealed the scoliosis.

“I knew that one of my students wore a brace for scoliosis. I asked her who her doctor was. That’s when I found out about Dr. Warner,” said Taryn’s mom, Theresa Krier of Bartlett, Tenn.

The Kriers instantly loved Pediatric Orthopaedic Surgeon Dr. William Warner’s approach to care and how he treated Taryn with respect. Warner continued to monitor Taryn’s curve four the next four years. At age 11, Taryn was placed in a brace, which she wore for six months.

“Despite Taryn diligently wearing the brace, her curve continued to progress,” said Warner.

By summer 2011, the Kriers knew surgery was inevitable. Taryn’s curve had progressed another 20 degrees since her initial visit with Warner. The 53-degree curvature made sleeping very uncomfortable for Taryn.

Taryn underwent spinal fusion surgery on Sept. 2, 2011. Warner placed two rods and 19 screws to help strengthen her spine.

“She went back to light swimming only seven weeks after surgery. The first night in her bed, she told me ‘Mom it doesn’t hurt to lay down anymore.’ That reassured us we chose the right path for Taryn,” said Theresa.

Taryn continues to swim competitively – her favorite activity. She continues to see Warner every three months in her first year after surgery and will be able to reduce those visits to once every six months after September.

“She’s my hero,” said Theresa. “We worried she wouldn’t be able to swim anymore because of scoliosis. The difference between before and after surgery is huge. We’re so blessed to have Le Bonheur.”

Pediatric team adds new member

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ormer Campbell Clinic resident David Spence, MD, is returning to Le Bonheur and Campbell Clinic as an attending physician.

He recently completed his fellowship in pediatric orthopaedics at Boston Children’s Hospital and served as an orthopaedic surgery resident at Campbell Clinic. Spence graduated from The University of Tennessee College of Medicine, and his areas of special interest include the role of hip surveillance in children with cerebral palsy and theling term outcome of patients with avascular necrosis following slipped capital femoral epiphysis.

“We are happy to have David returning from his fellowship in Boston to join Campbell Clinic and Le Bonheur,” said Campbell Clinic Orthopaedic Surgeon James Beatty, MD. “David will be a great addition to our community and provide excellent care to children and families with pediatric orthopaedic needs.”

Added Spence, “It is an honor for me to return to my hometown and join the staff of Campbell Clinic, which has a rich history as a world leader in the field of orthopaedic surgery. Moreover, I look forward to being part of the pediatric orthopaedic team at Le Bonheur Children’s and continuing to give back to the hospital that fought so valiantly for my son.”

Spence and his wife, Brittany, serve on Le Bonheur’s Family Partners Council and established a fund and sibling playroom in memory of their son, Forrest. The Forrest Spence Fund assists with the non-medical needs of critically or chronically ill children and their families.