

# Insights

Spring 2018

An Update From the Division of Pediatric Orthopaedic Surgery



## Division Faculty

**W. Timothy Ward, MD**

*Division Chief*

**Patrick Bosch, MD**

**Ozgur Dede, MD**

**John Fowler, MD**

**Robert Goitz, MD**

**Jan Grudziak, MD, PhD**

**Stephen A. Mendelson, MD**

**Z. Deniz Olgun, MD**

## Children's Hospital and Shriners Hospitals for Children – Erie: Partners in Orthopaedic Care

Since 2010, Children's Hospital of Pittsburgh of UPMC has been in partnership with Shriners Hospitals for Children – Erie to provide orthopaedic surgery care for its patients.

**W. Timothy Ward, MD**, pediatric orthopaedic surgery division chief at Children's Hospital, serves as the current medical director of the orthopaedic surgery service at Shriners Hospitals for Children – Erie, while **Ozgur Dede, MD**, is the associate medical director. Dr. Ward took over the role of medical director when former director and Children's Hospital orthopaedic surgeon James W. Roach, MD, retired in 2015.

"Since the inception of the partnership, it has been a win-win for both of our organizations and the patients who we see. We are helping Shriners Hospitals to fulfill its mission of providing exceptional orthopaedic care to families at essentially no cost to them. Patients and families benefit because they do not have to travel far from home to receive the care they need, and Children's Hospital is able to expand its geographic reach with the partnership," says Dr. Ward.

Physicians from the Children's Hospital Pediatric Orthopaedic Division staff the outpatient clinics and perform ambulatory surgery cases on site in Erie. "We try to provide as much care as possible in Erie at Shriners Hospitals, with only the complex, inpatient procedures occurring at Children's Hospital in Pittsburgh, but it's a seamless transition for the patients and their families. We see them in Erie, and the same surgeons manage their case in Pittsburgh," says Dr. Ward.

Patients at Shriners Hospitals for Children – Erie also are able to tap into and be enrolled in research projects that are ongoing at Children's Hospital. Dr. Ward, an expert in adolescent idiopathic scoliosis, routinely enrolls appropriate patients from Erie into his database of scoliosis patients, which feeds many of his investigations into the condition. This aspect of the partnership is likely to grow over time much as the clinical care work between the two organizations has over the last decade.



**W. Timothy Ward, MD**



**Ozgur Dede, MD**

Affiliated with the University of Pittsburgh School of Medicine and ranked among the nation's best children's hospitals by *U.S. News & World Report*.

## The Spine Center at Children's Hospital: Comprehensive Care for Complex Cases

Launched in the early part of 2017, the Spine Center at Children's Hospital of Pittsburgh of UPMC provides comprehensive, multi-disciplinary care for children with scoliosis and kyphosis. The center is designed so that all the services patients and families need are available on site within the clinic. This centralization cuts down on the need for follow-up appointments or visits to other providers for services such as physical therapy and bracing. The introduction of the EOS™ imaging system is also a benefit to clinicians and patients in the Spine Center (see Page 3 for additional details).

"We've integrated orthotics, physical therapy, and other services within the center to streamline our patient care and become more efficient. This benefits us as providers in a number of ways, not the least of which is the amount of time we can allot to see each patient who visits the center," says Dr. Ward.

Patients and families benefit in many ways, as well, from the services at the Spine Center. The treating physician can interact directly with the orthotist or physical therapist while the patient is there, so if an adjustment to a brace is needed, for example, it can be handled directly and immediately in a face-to-face manner.

Physical therapy (PT) is an integral component to the treatment and management of scoliosis and kyphosis, and it is integrated into patient care at the Spine Center. Physical therapists who staff the center are specially trained in the Schroth Method, a therapy



**EOS™ Imaging System**

technique which involves an individualized exercise plan for every patient that is based on a number of factors including the degree and type of curvature in their spine.

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### Spine Center Physicians



**W. Timothy Ward, MD**



**Patrick Peter Bosch, MD**



**Stephen A. Mendelson, MD**

### Conditions Treated at the Spine Center

#### Scoliosis

- Adolescent idiopathic scoliosis
- Early onset scoliosis
- Congenital scoliosis

#### Kyphosis

- Postural kyphosis
- Scheuermann's kyphosis
- Congenital kyphosis

## Comprehensive Care for Complex Cases (Continued from Page 2)

### The EOS Imaging System: Benefits for Patients and Families

In 2017, the Division of Pediatric Orthopaedic Surgery began using the EOS imaging system in the Spine Center. The EOS system allows for the capture of full-body, 3D images to facilitate diagnosis, treatment, and ongoing monitoring of such conditions as scoliosis, where changes over time and alignment can be tracked and analyzed.

The system also dramatically decreases the amount of radiation exposure to patients. "Scoliosis patients may need to get five or six x-rays a year, and depending on the age of the child and the details of their case, this process could last many years and subject them to significantly more radiation than the average person gets in a

lifetime. With the EOS system, we can still obtain the same number of scans as we typically would, but the microdose technique employed with the system reduces radiation exposure by approximately 80 percent," says Dr. Ward. This reduction in radiation exposure is meaningful to everyone involved — the child, their parents, and their health care providers.

Dr. Ward also explains that the system and its software have the capability to create 3D printed models of anatomy, such as a spine or spinal segment, from the captured x-rays. "We've not started using EOS scans yet to created 3D models, but we're discussing the capabilities now and how our clinical practice might benefit from this technology in the future."

## Recent Publications

**Below is a selection of recent publications from the Division.**

1. Ward WT, Friel NA, Kenkre TS, Brooks MM, Londina JA, Roach JW. SRS-22r Scores in Nonoperated Adolescent Idiopathic Scoliosis Patients With Curves Greater Than Forty Degrees. *Spine (Phila Pa 1976)*. 2017; 42(16): 1233-1240.
2. Hotchkiss WR, Schwend RM, Bosch PP, Edgar HJ, Young BN. Defining the Differences in Transverse Plane Trajectories for Thoracic Pedicle Screw Insertion: Anatomic Versus Medial. *Spine Deform.* 2016; 4(1): 22-26.
3. Franklin CC, Bosch PP, Grudziak JS, Dede O, Ramirez RN, Mendelson SA, Ward WT, Brooks M, Kenkre T, Lubahn JD, Deeney VF, Roach JW. Does a Weekly Didactic Conference Improve Resident Performance on the Pediatric Domain of the Orthopaedic In-Training Examination? *J Pediatr Orthop.* 2017; 37(2): 149-153.
4. Demirkiran G, Dede O, Karadeniz E, Olgun D, Ayvaz M, Yazici M. Anterior and Posterior Vertebral Column Resection Versus Posterior-only Technique: A Comparison of Clinical Outcomes and Complications in Congenital Kyphoscoliosis. *Clin Spine Surg.* 2017; 30(7): 285-290.
5. Natarajan V, Bosch P, Dede O, Deeney V, Mendelson S, Ward T, Brooks M, Kenkre T, Roach J. Is There Value in Having Radiology Provide a Second Reading in Pediatric Orthopaedic Clinic? *J Pediatr Orthop.* 2017; 37(4): e292-e295.
6. Natarajan V, Abebe E, Dunlap J, Bosch P, Dede O, Ward WT, Roach J. Outcomes of Pediatric Fractures Managed With Closed Reduction by Orthopaedic Residents in the Emergency Department. *J Pediatr Orthop.* 2017; 37(4): e243-e245.

## About the Division of Pediatric Orthopaedic Surgery

Led by Division Chief **W. Timothy Ward, MD**, the Children's Hospital of Pittsburgh of UPMC Division of Pediatric Orthopaedic Surgery specializes in conditions related to the musculoskeletal system, and includes inflammatory, congenital, developmental, neoplastic, and metabolic disorders. The Spine Center at Children's

Hospital is a multidisciplinary program designed to provide comprehensive care for children with scoliosis and kyphosis from diagnosis through treatment and therapy. The Division offers 24-hour coverage for trauma and other orthopaedic injuries through the Children's Hospital Emergency Department.

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## CME Course for Physicians

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for physicians are available by visiting  
[UPMCPhysicianResources.com/Pediatrics](http://UPMCPhysicianResources.com/Pediatrics).



## About Children's Hospital of Pittsburgh of UPMC

Regionally, nationally, and globally, Children's Hospital of Pittsburgh of UPMC is a leader in the treatment of childhood conditions and diseases, a pioneer in the development of new and improved therapies, and a top educator of the next generation of pediatricians and pediatric subspecialists. With generous community support, Children's Hospital has fulfilled this mission since its founding in 1890. Children's is named consistently to several elite lists of pediatric hospitals, including ranking No. 9 in the prestigious *U.S. News & World Report* annual Honor Roll of America's Best Children's Hospitals for 2017-2018 and ranking 10th among children's hospitals and schools of medicine in funding for pediatric research provided by the National Institutes of Health (FY2016).