



PHYSICIAN REPORT

FALL 2019



> REGINALD WASHINGTON, MD, FAAP, FACC, FAHA
Chief Medical Officer

Rocky Mountain
Hospital for
Children

720-754-4100

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A Note from Dr. Washington

Welcome to the fall issue of the Rocky Mountain Hospital for Children (RMHC) Physician Report. With this issue we are proud to showcase our teams, new treatments, new programs and recent hospital awards.

The RMHC Little Hearts at Home program works with emergency medical service organizations to give patient-specific training so that they are better prepared to care for pediatric cardiac patients in the event

emergency services are needed after the patient returns home.

Another team focused on keeping our patients safe during their treatment plan is our Child Life Specialists. RMHC Child Life Specialists offer developmentally appropriate activities to help kids cope with the ins and outs of their medical care. They help normalize the hospital environment and reduce the impact of illness and hospitalization.

Finally, our pediatric spine specialists, Jaren Riley, MD,

presents a review of the latest data on the natural history of idiopathic scoliosis and current and new treatment options. Together our teams continually raise the bar in patient care and unlock barriers to new pediatric treatment options.



Reginald Washington, MD, FAAP, FACC, FAHA,
Chief Medical Officer

Little Hearts at Home Program Debut

Enhancing out-of-hospital pediatric care through first responder education

The Rocky Mountain Hospital for Children (RMHC) Little Hearts at Home program is a new service to provide support to pediatric, postoperative cardiac surgery patients and their families. The program helps in the event that emergency services are needed after returning home following surgery.

HOW IT WORKS

Before a child returns home from the hospital following cardiac surgery, the local emergency medical service (EMS) organization—serving the community in which the child resides—is provided with patient-specific education and training. This way EMS is better prepared to care for the child in the event ambulance services are needed after they return home. As part of the program, the child's home address is “flagged” in the 911-dispatch system. This allows ambulance dispatchers to provide responding EMS personnel with patient-specific medical information prior to arrival.

FIRST RESPONDER EDUCATION

- The local EMS agency is provided with an informational binder containing medical information pertinent to taking care of the child outside of the hospital. This includes a demographics sheet with the child's name, home address, photo, medical condition, medication list, allergies and other pertinent medical information (e.g., oxygen saturation range, IV fluid administration considerations). This allows the responding ambulance personnel to review the child's medical information prior to arrival.
- First responder education is provided by RMHC pediatric intensive care unit (PICU) physicians, pediatric cardiologists, pediatric cardiac surgeons and pediatric nurses. It includes classroom education and simulation-based training with a pediatric manikin to further enhance the educational experience. Providing this education is invaluable to first responders, as they receive limited training on the child's unique condition and will be better prepared to care for the child as needed.



Parents give consent prior to the child becoming a part of the program. For more information about this program, call **720-754-4061**.



SCOLIOSIS Update

BY: JAREN RILEY, MD

The diagnosis and classification of scoliosis have remained static for years. Thankfully, more data on the natural history of idiopathic scoliosis has added to our understanding of its long-term effects on patients, and enhanced our ability to counsel patients on treatment. Additionally, there is good evidence to support the use of more varied treatment options.

Limiting this discussion mainly to the topic of adolescent idiopathic scoliosis, natural history studies have focused on outcomes such as progressive deformity and pain, as well as the psychological distress caused by the deformity, including its effect on body image. Traditional interpretation of long-term follow-up studies indicated that, measured at skeletal maturity, curves smaller than 40° remained stable and painless, curves between 40° and 50° were unpredictable but still only as painful as controls, and curves greater than 50° predictably worsened but still didn't correlate highly with significant pain. Additional data and longer follow-up contradicts these teachings. Curves greater than 40° predictably worsen at approximately 0.5° per year, and are correlated with more



> Jaren Riley, MD
Orthopedic Spine Surgeon
Rocky Mountain Pediatric OrthoONE
303-861-2663

back pain compared to control groups. There is also documentation of significant psychological distress caused by the deformity in 19% of these patients.

These outcomes signify that more aggressive management is indicated. Treatment encompasses both nonoperative and operative interventions. Nonoperative options include

- observation, physical therapy and chiropractic care combined with proprioceptive training, bracing and casting.

Physical therapy is effective for treating much of the pain associated with scoliosis. Emphasis is placed on core, postural and periscapular strengthening. Evidence shows it is not effective, however, at preventing curve progression, much less decreasing the curve magnitude.

Newer strategies that combine chiropractic manipulation and proprioceptive

- posturing are gaining popularity among patients and families, but evidence does not support the claim that they are effective. In 2013, the randomized, controlled BrAIST (Bracing in Adolescent Idiopathic Scoliosis Trial) study confirmed for the first time that bracing curves between 25° and 40° for > more than 18 hours per day reduced curve progression and decreased the treatment group's risk of surgery by 50% compared to the control group. Subsequent studies have also established that bracing younger patients with smaller curves is most effective. This emphasizes the importance of early detection and diagnosis, followed by early, appropriate intervention.

A SURGICAL SOLUTION?

- If these methods fail to control the scoliosis, surgical treatment may be necessary. Posterior spinal fusion, especially selective thoracic fusions (fusions involving only a main thoracic curve), have excellent long-term outcomes. Patients can safely participate in sports, experi-

- ence pain profiles similar to controls and have low reoperation rates. This is an excellent option for large curves near skeletal maturity. However, very young patients with considerable growth remaining have always posed a challenge for surgical management.

Fusion is inappropriate, as the spine must be allowed to grow substantially to promote full development of the thoracic cage and enable full lung development. Traditional growth rod surgery is fraught with complications, including high infection rates, and too many secondary surgeries for rod expansions. Magnetic growth rods, manipulated by external remote controls, have successfully resulted in curve control, fewer surgeries and fewer infections. Once implanted, the rods maintain a straighter spine, and the rods can be expanded in the office painlessly, and without sedation or surgery.

The search continues for the "holy grail," a surgical treatment that would allow

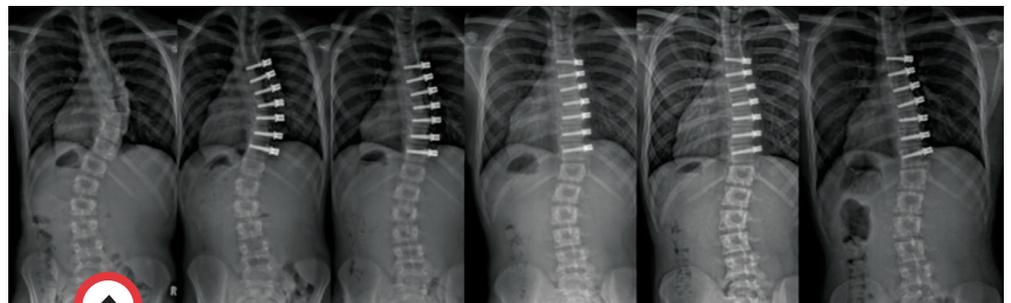


FIGURE 1.
VBT

us to correct the scoliosis without fusion. One step in that direction is the development of vertebral body tethering (VBT). With VBT, a tether (rope) is implanted on the convex (longer) side of the spinal curvature, stopping its growth, while allowing the concave (longer) side of the curve to continue to grow. This directs the growth of the spine toward a straighter orientation. It's a slow, growth-modulated-process. The goal is to produce a spine straight enough to remain independently stable, but still mobile. There is no long-term data to show the efficacy of this method, but it holds great potential.

Progressive scoliosis is a deforming, painful disease. Correct interpretation of the data suggests early detection, aggressive treatment and newer surgical techniques can greatly improve the patient's outcomes compared to the natural history.



FIGURE 2.
Progressive idiopathic scoliosis

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Thank you for making us the region's favorite hospital once again.

Our community has named us their favorite hospital for the **third year in a row**. We are humbled to be such an important part of the Denver community. We're excited to continue earning your trust as we improve the lives of each child and every family we serve. Together with you, we are **#AmazingTogether**. For more information, visit us at **WeAreAmazingTogether.com**.



RMHC Patient Feedback Score: 4.7 out of 5.0

Thank you to our medical teams for taking time to raise the bar in patient care. One way we monitor our progress is through patient feedback sent to us via online sites. For the last quarter, we are thrilled to share that with nearly 175 feedback records, we have an overall score of 4.7 out of 5.0. In comparison, the competitive benchmark for our category is 3.1 out of 5. And, for the last year, our average rating has been 4.9 out of 5.0.

Here's one Google review a patient left online: **"We were in Colorado on a family trip when our daughter became very ill. We brought her here and the staff was SO very friendly, thorough and positive. My daughter needed a prescription and (not being from the area) the nurse was so kind and called in the Rx for us. I could not have asked for a better experience. It can be scary bringing your child to any hospital but the staff (from the X-ray tech to the doctor) were AMAZING!"**

Support Preparing Pediatric Patients for Success in the Hospital and Following Discharge

At Rocky Mountain Hospital for Children (RMHC), our Certified Child Life Specialists are educated and clinically trained in the developmental impact of illness and injury for pediatric patients. Their role on our campus improves patient and family care, satisfaction and overall experience.

Across the health care industry, Certified Child Life Specialists help infants, children, youth, adolescents and families cope with the stress and uncertainty of acute and chronic illness, injury, trauma, disability, loss and bereavement. Child Life Specialists provide evidence-based developmentally and psychologically appropriate interventions including therapeutic play, preparation for procedures, coping skills and education to reduce fear, anxiety and pain.

A STRONG OUTREACH

At RMHC, Child Life Specialists work with patients in: Pediatrics, PICU, Peri-Op services, Outpatient Infusion Center, Hematology/Oncology and other units if a referral is made. Child Life Specialists offer support, distraction, education and developmentally appropriate activities to encourage expression, promote coping and facilitate development. These therapeutic interventions help normalize the hospital environment and reduce the impact of illness and hospitalization.

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RESEARCH-BASED SESSIONS

Experience-based evidence shows children who are appropriately prepared and informed about medical treatments have a more positive experience with health care and develop better coping skills than children who are unprepared. However, children often arrive at peri-op services without an understanding of why they have come to the hospital. This happens because parents are hesitant to tell their children about a procedure because they fear the information will increase anxiety.

At RMHC, Child Life Specialists step in as needed to use age-appropriate discussion tools to educate patients about medical processes which in turn helps to reduce patient—and family—*anxiety and improve compliance.*

The primary goal of preparation is to reduce the fear and anxiety experienced by a child who is undergoing a medical procedure and to promote his or her long-term coping and adjustment to future health care challenges. The long-term implications of negative medical experiences, including ineffective preparation, can be profound; post-traumatic stress, increased fears and decreased cooperative behavior. Participation in a preparation program has been shown to significantly reduce the negative psychological sequelae experienced by children both im-

mediately before and after the procedure and for up to a month later.*

Child Life Specialists often engage patients and families prior to a hospital visit. This preoperative program includes a hospital tour, medical play and an opportunity to build rapport with a Child Life Specialist.

LEARNING FROM HOME

We understand that many patients travel from great distances and are not able to attend preoperative teaching in person. With that in mind, RMHC created preop videos that can be viewed on the RMHC website. These segments are created from the patient perspective and address preoperative standard operating procedures, provide a tour and help families know how to plan for procedure day. The videos are geared toward different developmental stages and can be excellent teaching tools for patients and families.

The RMHC Child Life team invites physicians and clinic involvement in the promotion of our pediatric preoperative program. We ask that you encourage any incoming procedural pediatric patient to sign up for a perioperative tour by:

- Visiting RockyMountainHospitalforChildren.com/calendar
- Calling: 720-754-7717
- E-mailing: RMHC.ChildLife@HCAHealthcare.com

To provide comprehensive care for our patients at RMHC, we must address the whole child. By treating all aspects of the child's needs; emotionally, psychologically, physically and medically, we can be amazing together. #AMAZINGTOGETHER

*Koller, D. Preparing Children and Adolescents for Medical Procedures, www.childlife.org

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