Inside

From the Director ..............................................................3
2017 Statistics.................................................................4
Disease Focus – Medulloblastoma .................................6
Program Spotlight – Regional Sickle Cell Program ..........8
Meet Bryale .................................................................9
Faculty Spotlight – Daniel Pettee, DO .........................10
Meet Nathan ............................................................11
Research .................................................................12
Scholarly Publications/Presentations .............................14
Medical Education .........................................................15
Community Outreach ....................................................16
Performance Improvement .............................................18
Committee Participation, Awards & Grants ......................20
Meet Eduardo ............................................................22
Community Supporter Profile – LOPen/Mawaka Family ....23
Community Support ......................................................24
Patient/Family Support ..................................................26

Akron Children’s Hospital
Showers Family Center for Childhood Cancer and Blood Disorders
One Perkins Square, Akron, OH 44308
330-543-8580

Akron Children’s Hospital Mahoning Valley
Center for Childhood Cancer and Blood Disorders
Beeghly Campus
6505 Market Street, Building A, Boardman, OH 44512
330-746-9522

To make a referral, call the numbers above.
For more information, call 330-543-8580
or visit akronchildrens.org/cancercenter.
Throughout our 52-year history, the primary goal of the Showers Family Center for Childhood Cancer and Blood Disorders has been to provide the highest quality, family-centered care to the children of our region. I remain very proud of the quality of our services, and others have recognized the quality of our work. Once again, the American College of Surgeons Commission on Cancer accredited our program as a Pediatric Cancer Center. Four of our physicians were listed as “2017 Best Doctors” for pediatric hematology-oncology in northeast Ohio. Last year, the results of patient satisfaction surveys conducted by Press Ganey placed our hematology-oncology program in the top 10 percent of participating hospitals across the country in multiple categories, including overall satisfaction with physicians.

Our staff is continuously involved in quality improvement projects. Some of our major projects in 2017 included our lead role in a national Solutions for Patient Safety collaborative to reduce central line infections, and our efforts to shorten the time to administer intravenous antibiotics to patients with fever, improve chemotherapy safety, and provide timely vaccines to patients who’ve had hematopoietic stem cell transplants.

In 2017, we had more than 13,000 patient encounters at three outpatient locations and on our inpatient unit. Ninety-five children were diagnosed and began treatment for cancer, and 12 stem cell transplants were performed. Our staff provided long-term, comprehensive care to 176 patients with sickle cell disease and 468 patients with bleeding and clotting disorders.

We are only able to meet patient needs and improve our programs through the generosity of individuals, groups and foundations throughout the region. In 2017, we received more than $1.2 million in donations and these funds were primarily used to support our patient families and conduct research. In this report, we highlight the longstanding support of LOPen Charities and how this evolved into the first endowed chair in hematology-oncology at Akron Children’s and the fifth for the entire hospital.

Through research, we are working to improve outcomes for children with cancer and blood disorders. There were over 200 clinical trial enrollments in 2017, and tumor specimens from 35 patients were added to our growing tissue biorepository. Our staff also disseminated the results of their scholarly activities through eight presentations at national meetings and eight publications.

I encourage you to read through this year’s report to learn more about our center and how our team connects the dots to help our patients tackle the biggest challenges, achieve the best outcomes and reach a future filled with potential. I know you will be inspired by the stories of our patients and staff and everything we’ve accomplished together.

With much gratitude to all our friends,

Jeffrey D. Hord, MD
The LOPen Charities and Mawaka Family Chair in Pediatric Hematology-Oncology, Showers Family Center for Childhood Cancer and Blood Disorders
2017 STATISTICS

**Clinical Activity**

**OUTPATIENT VISITS**

- **ONCOLOGY**: 2,857 visits
- **STEM CELL TRANSPLANT**: 382 visits
- **SICKLE CELL DISEASE**: 450 visits
- **BLEEDING/CLOTTING DISORDERS**: 607 visits
- **OTHER HEMATOLOGY DISORDERS**: 880 visits
- **LABS ONLY**: 439 visits
- **OUTPATIENT INFUSION CENTERS**: 1,763 visits
- **OBSERVATION UNIT**: 60 visits
- **BEEGHLY CAMPUS CLINIC**: 1,042 visits
- **TOTAL**: 8,480 visits

**INPATIENT DAYS**

- **ONCOLOGY**: 3,101 days
- **STEM CELL TRANSPLANT**: 604 days
- **SICKLE CELL DISEASE**: 590 days
- **BLEEDING/CLOTTING DISORDERS**: 184 days
- **OTHER**: 305 days
- **BEEGHLY CAMPUS INPATIENT CONSULTS**: 29 days
- **TOTAL**: 4,813 days

**176 PATIENTS WITH SICKLE CELL DISEASE TREATED ON AN ONGOING BASIS**

**468 PATIENTS WITH BLEEDING AND CLOTTING DISORDERS FOLLOWED**

**3,366,604 UNITS OF FACTOR CONCENTRATES DISPENSED BY OUR 340B FACTOR PROGRAM**

**79 THERAPEUTIC APHERESIS PROCEDURES**

**12 STEM CELL TRANSPLANTS PERFORMED**
- 5 AUTOLOGOUS
- 7 ALLOGENEIC

**STEM CELL TRANSPLANTS PERFORMED**
- 7 AUTOLOGOUS
- 5 ALLOGENEIC

**12 STEM CELL TRANSPLANTS PERFORMED**
- 5 AUTOLOGOUS
- 7 ALLOGENEIC
New Cancer Patients

Disease Types

- **BRAIN & CENTRAL NERVOUS SYSTEM**: 26 cases
- **LEUKEMIA**: 23 cases
- **SOFT TISSUE SARCOMA**: 7 cases
- **GERM CELL TUMORS**: 6 cases
- **BONE TUMORS**: 6 cases
- **LYMPHOMA**: 5 cases
- **NEUROBLASTOMA**: 5 cases
- **THYROID CANCER**: 3 cases
- **WILMS TUMORS**: 3 cases
- **OTHER**: 11 cases
- **TOTAL**: 95 cases

New Patients by County

- **ASHLAND**: 3 cases
- **ASHTABULA**: 1 case
- **COLUMBIANA**: 7 cases
- **CRAWFORD**: 1 case
- **HOLMES**: 3 cases
- **HURON**: 4 cases
- **MAHONING**: 7 cases
- **MEDINA**: 4 cases
- **PORTAGE**: 7 cases
- **RICHLAND**: 1 case
- **STARK**: 16 cases
- **SUMMIT**: 23 cases
- **TRUMBULL**: 7 cases
- **TUSCARAWAS**: 4 cases
- **WAYNE**: 4 cases
- **OUT-OF-STATE**: 3 cases

Gender

- **MALE**: 52 cases
- **FEMALE**: 43 cases

Age Distribution

- **AGE 0-5**: 39 cases
- **AGE 6-10**: 17 cases
- **AGE 11-15**: 21 cases
- **AGE 16-20**: 15 cases
- **AGE 21 & OLDER**: 3 cases

Showers Family Center for Childhood Cancer and Blood Disorders | 2017 Report
Medulloblastoma
Erin Wright, MD and Sarah Rush, MD

Introduction and clinical presentation

Central nervous system (CNS) tumors, which consist of tumors of the brain and spinal cord, are the most common type of solid tumor in pediatric patients and the second most common type of malignancy in children overall. Medulloblastoma, a type of childhood brain tumor, occurs in approximately 1:100,000 pediatric patients. An embryonal tumor, medulloblastoma normally presents in the posterior fossa of the brain and is 10 times more common in children than adults (Image 1). This tumor type has a slight male predominance similar to other pediatric brain tumors. In general, medulloblastomas are spontaneous tumors; however, some patients may have underlying genetic syndromes.

Patients with medulloblastoma may present with headache, nausea and vomiting, especially with changing positions or first thing in the morning, as well as lethargy, or changes in balance and coordination. Tumor blockage of cerebrospinal fluid (CSF) flow causes a buildup leading to increased pressure and subsequent symptoms. On ophthalmologic evaluation, these patients may have papilledema or swelling of the optic disc consistent with increased intracranial pressure. These tumors can spread to other parts of the brain, the spinal cord and into the CSF in up to 10-40 percent of patients; however they rarely spread outside the CNS axis. Therefore, all patients should have imaging of the entire brain and spinal cord, and lumbar puncture to evaluate tumor cells in the CSF as part of the diagnosis and staging.

New classification system

Medulloblastomas were originally classified by histologic subtype based on microscopic features. Classic medulloblastoma was the most common type and correlated with standard risk disease. Desmoplastic/nodular medulloblastomas (small blue cells with pale islands) portended a favorable prognosis, while anaplastic (abnormal appearing nuclei) portended a poor prognosis. In recent years, more has become understood about the molecular features of medulloblastomas and they are now categorized into four main groups based on these molecular characteristics (Figure 1).

There are four groups of medulloblastoma with distinguishing histologic features and distinct genetic mutations. They are referred to as: WNT-activated medulloblastoma (11 percent of cases), Sonic Hedgehog (SHH-activated) medulloblastoma (28 percent of cases), group 3 medulloblastoma (28 percent of cases) and group 4 medulloblastoma (33 percent of cases). The group that a patient falls into is very important as we have learned that these groups are also associated with differences in overall outcome and risk. Some groups, such as group 3, have a higher chance of being metastatic, relapsing or not responding to therapy whereas the WNT group has been shown to have excellent overall cure rates.

<table>
<thead>
<tr>
<th>MEDULLOBLASTOMA GROUPS AND ASSOCIATED RISKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>WNT</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>Low Risk</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Standard Risk</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>High Risk</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Very High Risk</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Unknown</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Figure 1
Treatment

Initial treatment focuses on surgical resection, recognizing that the best outcomes are achieved when the tumor can be completely resected. Beyond surgical resection, adjuvant therapy has focused on a combination of radiation to the brain and spinal cord, as well as systemic chemotherapy. To determine the optimal treatment, patients are stratified into these risk groups: low risk (LR), standard risk (SR), high risk (HR), and very high risk (VHR). Risk groups are based on the degree of tumor present after surgery, the presence of metastasis, histology of tumor cells, and specific cytogenetic analysis. The intensity of therapy increases with the degree of risk.

Overall survival varies based on risk group, as well as the underlying molecular group. For low risk disease, including patients that fall into the WNT subgroup, overall survival exceeds 90 percent. Standard risk patients have an overall survival of about 80 percent (75-90 percent). The more aggressive subtypes fall under high risk and very high risk with survival rates of 50-65 percent and less than 50 percent, respectively. Infants tend to do very poorly due to the inability to receive radiation therapy, leading to outcomes closer to 30-50 percent survival, regardless of risk group.

While survival is good, morbidity from treatment can be a significant issue. Patients may have treatment-related learning difficulties, endocrine abnormalities and growth issues. Most patients have some degree of hearing loss requiring hearing aids. Therefore, current therapeutic trials are working to identify treatment for the high risk groups which will improve outcomes and minimize treatment-related side effects in the lower risk groups.

Experience at Akron Children’s Hospital

We reviewed our experience treating patients with medulloblastoma over an 11-year period from January 2005 to December 2015. During that time, 16 new cases were diagnosed, comprising about 8 percent of the total number of CNS tumors we saw during that period. This is significantly lower than the incidence of approximately 20 percent of childhood CNS tumors reported by SEER data. Similar to that data, most of our patients presented with tumors of the fourth ventricle and there was a slight male predominance (53 percent).

Of our cases, a majority (14) was standard risk, which is consistent with general data. Overall survival was 86 percent for standard risk patients (n=14) and 50 percent for high risk patients (n=2) (Figure 2). This compares to published overall survival rates for all patients with medulloblastoma (approximately 80 percent for standard risk and 50-75 percent for high risk.) A majority of these patients were diagnosed and treated prior to the more recent advent of molecular diagnostics and classification, so they cannot be classified into the current molecular groups, which may also alter the outcome data overall. Currently, all patients with medulloblastoma undergo evaluation for subgroup classification. As a member of the Children’s Oncology Group (COG), our patients are eligible for open COG clinical trials based on subgroup classification.

References

Living with a chronic illness such as sickle cell disease can present many challenges.

Akron Children’s Region VI Sickle Cell Program is one of six designated sickle cell programs in Ohio. Funded in part by a grant from the Ohio Department of Health, the program serves 14 counties in northeast Ohio.

Staff in our Sickle Cell Program provide and coordinate services for infants, children, teens and young adults with sickle cell disease and related disorders.

Each year, newborn screenings are used to identify about 400 children with sickle cell trait, sickle cell disease and other hemoglobinopathies in our region.

“Last year, we received 389 referrals from the Ohio Department of Health for abnormal newborn screens, and saw 112 infants for additional testing,” said LaTonya Lewis, program director, hemoglobinopathy counselor and outreach education coordinator for the Sickle Cell Program. “We also diagnosed 26 other patients who were not newborns with hemoglobinopathies.”

Through a monthly, comprehensive clinic, patients receive medical care, as well as all the supportive services they may need, such as hemoglobin and nutrition counseling, and education regarding how to manage their disease. The sickle cell team also includes a dedicated social worker who provides emotional support and financial counseling.

Because sickle cell patients may miss a lot of school due to illness, pain crises and hospitalizations, our outreach coordinator meets with school personnel to ensure their educational needs are met and they are not falling behind. A schoolteacher and tutors are part of the monthly clinic to help address concerns when patients are struggling in school.

“Graduation rates are lower for kids with sickle cell disease, so we do everything we can to help them stay in school,” said Lewis.

As patients transition to adulthood, our social worker also assists with career and personal counseling.

Through an active on-site erythrocytapheresis program, patients abnormal red blood cells are removed and replaced with donor red blood cells. This has been shown to be a better treatment option for sickle cell disease than regular blood transfusions.

Patients with sickle cell trait who do not require treatment are also referred to our Sickle Cell Program for genetic counseling to help them understand the risk of passing the disease to future offspring.

Lewis plays an active role in providing community education and raising awareness about sickle cell disease to the general public, at-risk groups and health care providers.

This includes coordinating the annual Mychal Clayton Sickle Cell Awareness Walk, which raises awareness and funds to support our sickle cell patients. (See page 17 for more information about our outreach efforts.)

Lewis coordinates a monthly sickle cell support group with separate activities for patients and their parents. Patients are also invited to participate in Camp Ed Bear, our annual summer camp for hematology-oncology patients, where they have an opportunity to make friends with other children who are facing similar conditions.
Eight-year-old Bryale Green of Akron loves to sing and dance, especially for her family. Her favorite musicians are Demi Lovato and Bruno Mars, but she also likes 90s girl group, TLC. Like Bryale, TLC singer Tionne Watkins, better known to her fans as T-Boz, has sickle cell disease.

Bryale was diagnosed with HGB SS, the most common form of sickle cell disease, through routine screening at birth. However, her mom, Cheyenne Talley, was referred to Akron Children’s Sickle Cell Program while she was still pregnant. Both Cheyenne and Bryale’s father have sickle cell trait, which increased the likelihood their daughter would be born with sickle cell disease.

In sickle cell patients, the red blood cells are hard, sticky and sickle-shaped, clogging the flow of blood and oxygen in the body. This may cause severe pain, damage to the organs and central nervous system, blindness, infections and stroke. Fortunately for Bryale, oral medications are successfully controlling her illness.

“She takes hydroxyurea once a day to reduce the number of pain crises,” said Cheyenne. “She also takes amoxicillin twice a day to prevent infections.”

Treatment with hydroxyurea helps the red blood cells stay round and flexible, which reduces pain crises and the need for blood transfusions. Sickle cell patients have weakened immune systems, so taking an antibiotic such as amoxicillin helps prevent routine infections that can lead to pneumonia or trigger a pain crisis.

Because her sickle cell disease is well managed, Bryale sees the team in the Showers Family Center every four months for a routine check-up.

“I love the Showers Family Center,” said Cheyenne. “They really stay on top of everything to make sure Bryale stays healthy.”

This includes Prasad Bodas, MD, her hematologist-oncologist and director of the Sickle Cell Program, and Lisa Sidebotham, RN, CPHON, a sickle cell nurse who has cared for Bryale for years.

To ensure her educational needs are met, Outreach Coordinator Mindy Aylward, BSN, RN, CPON, visited Bryale’s school to meet with her teachers.

“Often sickle cell patients miss a lot of school due to frequent illnesses, so our outreach coordinator ensures there’s a plan in place to help them keep up on assignments,” said LaTonya Lewis, program director, hemoglobinopathy counselor and outreach education coordinator for the Sickle Cell Program.

Now a third grader at Firestone Park Elementary School, Bryale thinks she might become a second grade teacher one day, or perhaps a nurse. She’s a doting big sister to Aria, her 15-month-old sister who was born with sickle cell trait.

Like her hero, T-Boz, Bryale doesn’t let her disease hold her back from the activities she enjoys. At school she loves running around with her friends in gym class and wants to take gymnastics lessons. She spent her summer vacation attending an area day camp through the YMCA and took a trip to Myrtle Beach.

Cheyenne credits her mother, Karla Talley, in helping her cope with the stress of raising a child with a chronic illness. When Bryale was first diagnosed, Cheyenne did a lot of research to help her better understand the disease.

She also offers this advice to other parents facing similar situations: “You have to stay strong. Sometimes the doctors and nurses have to prepare you for the worst, but no matter how worried you might be, stay positive for your child.”
When he was a young boy growing up in Toledo, Ohio, Dr. Daniel Pettee’s 1-year-old cousin, Grace, was diagnosed with acute lymphoblastic leukemia (ALL) – an experience that made a lasting impression on him.

“I was around 7 or 8, and I remember she had a port for chemotherapy,” he said. “I also remember my brother and I worried we might catch ALL if we kissed her.”

Today Grace is a 30-year cancer survivor. Meanwhile, Dr. Pettee’s life-long interest in childhood cancer and blood disorders led him to Akron Children’s where he’s now a pediatric hematologist-oncologist. He also serves as director of our Adolescent and Young Adult Cancer Program and director of our Solid Tumor Program.

While in medical school at Lake Erie College of Osteopathic Medicine in Erie, Pa., Dr. Pettee completed a rotation in hematology-oncology at Akron Children’s, mostly on the inpatient side with Dr. Donna Patton, Dr. Steven Kuerbitz and the now retired Dr. Mohammad Talaizadeh.

“I knew then I wanted to do my fellowship training in hematology-oncology here, so I applied,” he said.

After completing his pediatric residency at the University of Toledo Medical Center in Toledo, Ohio, Dr. Pettee began his fellowship at Akron Children’s in 2011. In 2014, he became the first Akron Children’s fellowship graduate to join our hematology-oncology faculty. While he spends the majority of his time in the Showers Family Center on our Akron campus, he also sees patients on our Beeghly campus in Boardman.

“Interacting with my patients and their families is the most rewarding part of being a pediatric hematologist-oncologist,” he said. “Knowing how much they trust you is an honor.”

He still remembers his first cancer survivor. Early on in his career, he kept a log of his patients’ victories.

Despite the successes and advances that have been made in cancer treatment, there is still much to learn regarding cancer and blood disorders.

“There are parts of hematology-oncology that are still not well known,” he said. “We often don’t know why children and adolescents get cancer or why they relapse, and not being able to give patient families good answers or treatment options is frustrating.”

He enjoys teaching medical students on our Beeghly campus and likely would have been a college biology professor had he not become a physician.

While a fellow at Akron Children’s, he met his wife, Julie, who was a hematology-oncology nurse. She’s now a nurse practitioner at the Cleveland Clinic. The couple has two young sons, Lucas and Maxwell.

Along with their shared interest in medicine, Dr. Pettee and his wife also share a love of reading. He’s currently reading the Mickey Haller series from novelist Michael Connelly, but usually prefers science fiction or fantasy. He also loves to cook and bake, and chiffon cake is his specialty.

Whether he’s serving his patients with compassionate care or serving friends and family a delicious baked treat, he’s guided by a Jesuit motto he remembers from his youth: Man for others.
You have to be tough to play center in football. You have to be really tough to play center while undergoing chemotherapy.

Nathan Atterholt did just that 17 years ago. He played football and baseball for the Hillsdale High School Falcons in Ashland County. During his sophomore year in 2001, he developed swollen lymph nodes near his collarbone and a cough that wouldn’t go away. He was referred to Akron Children’s Hospital, where he was diagnosed with Hodgkin lymphoma.

“I remember my doctor, Dr. Jeffrey Hord, saying if I was going to get cancer, this was the one to get because we know how to treat it,” said Nathan, now an optometrist who lives on a farm in Jeromesville, Ohio.

“One of the hardest questions I asked Dr. Hord is, will I still be able to play football?”

Nathan answered that himself. Starting that summer, he went through six months of chemotherapy. Though fatigued, the 6’2”, 290-pound center didn’t miss a practice or a game. He wore a special pad under his jersey to protect the port implanted in his chest for chemotherapy infusions. His only limitation was he couldn’t play both offense and defense due to fatigue.

Nathan’s performance surprised everyone. He made second team all-league that year.

“I knew at the time it was remarkable how he tolerated treatment,” said Dr. Hord, director of the Showers Family Center. Now, having a longer perspective, Dr. Hord said he finds it even more remarkable.

After football season, Nathan underwent radiation treatments. Through it all, he only missed one day of school.

“For a 15-year-old, it was a big deal to me to have a normal life,” he said. “Sports really helped me get through it because it gave me something else to focus on.”

His high school sweetheart, Amy, also helped him. Friends since 5th grade, they started dating shortly after Nathan was diagnosed. They married in 2007.

“He was a motivation to his whole team that year,” Amy recalled. Cancer also changed how Nathan approached life. He grew up fast and became more serious about academics.

After graduating high school, Nathan and Amy went to the College of Wooster, where they majored in biology. At The Ohio State University, Nathan entered the College of Optometry and Amy pursued a master’s degree in occupational therapy.

While in college, they started raising money for the American Cancer Society through its Relay for Life fundraiser. They continued fundraising after college, and eight years ago they started the Hillsdale Cancer Crusaders golf outing. As the annual event has grown, they divide proceeds between the American Cancer Society and the Showers Family Center.

Though it’s been 17 years, Nathan takes nothing for granted. As he reflected on his experience, he offered perspective to others struggling with cancer: “I would encourage everyone to keep faith: faith in your doctors and nurses, faith in God, and faith in your family and caregivers,” he said.

“You will never have to face this battle alone. I have used my experiences as a motivator to accomplish my goals personally and professionally. I still have struggles. But cancer has led me to appreciate all the gifts I have been given in life and to fully enjoy them.”

MEET NATHAN who tackled cancer 17 years ago, but never forgets
Clinical Research

Members of the Division of Hematology-Oncology are engaged in clinical and translational research. Staff physicians, nurses, advanced practice providers, pharmacists and others are members of the Children’s Oncology Group (COG), where they serve on a variety of committees.

Staff members also participate in an expanding portfolio of clinical research related to supportive care for childhood cancer patients, late effects of cancer therapy, and psychological outcomes for childhood cancer patients and family members. Our Hemostasis and Thrombosis Center is active in research related to bleeding disorders, and disorders of thrombosis and coagulation. We are also actively involved in researching white blood cell disorders, stem cell transplantation, sickle cell disease and pediatric palliative care.

Enrolling childhood cancer patients in clinical trials, a practice that has been shown to yield improved outcomes, remains a high priority.

In 2017, there were 11 enrollments in COG clinical trials to test new therapies for childhood cancer. There were 19 enrollments in non-therapeutic COG studies, including those that explore the biology of children’s cancer or the late-term effects of cancer treatment. There were an additional 185 enrollments in a variety of non-COG studies, including 135 enrollments in studies involving bleeding and clotting disorders.

Advanced Cancer Therapies Network

Established in 2013 as a clinical research collaboration with Cincinnati Children’s Hospital Medical Center, the Advanced Cancer Treatment Network (ACTN) also includes the pediatric oncology programs at Dayton Children’s Hospital and the
University of Kentucky. The ACTN provides childhood cancer patients with access to innovative pediatric cancer research therapies.

The clinical trials available through the ACTN include those sponsored by COG, as well as the Pediatric Brain Tumor Consortium, National Cancer Institute Pediatric Phase I Consortium, New Approaches to Neuroblastoma Consortium, Collaborative Ependymoma Research Network, Neurofibromatosis Clinical Consortium and other leading pediatric cancer clinical research consortia.

The collaboration has allowed Akron Children’s to open multiple phase I and II clinical trials. Sarah Rush, MD, and Steven Kuerbitz, MD, continue to work closely with researchers in Cincinnati and the other network programs to grow this exciting initiative by developing new research protocols and identifying additional areas for collaboration.

The Shannon E. Wilkes Targeted Therapy Program

Thanks to the generous support of Scott and Gail Wilkes in memory of their daughter, Akron Children’s established the Shannon E. Wilkes Targeted Therapy Program in 2014. The program enables our doctors to treat patients based on a better understanding of their individual cancer types. Targeted therapy involves molecular testing of cancer tissue to identify mutations in select genes within critical molecular pathways – pathways that drive tumor formation, growth and metastasis. Oncologists can then use this knowledge to identify drugs or other treatment modalities that block or inhibit these abnormally activated pathways. Optimally, treatment with an agent targeted to a specific molecule will kill cancer cells, while sparing the patient exposure to nonspecific, and perhaps less effective, conventional chemotherapies. This can result in improved treatment efficacy with reduced toxic side effects.

Knowledge of specific mutations can also help oncologists more accurately predict a patient’s prognosis, an important factor when choosing between more or less intensive treatment options.

Not every patient can be treated with a targeted therapy. In pediatrics, these agents are typically limited to patients with high-risk tumors, metastatic cancers, cancers that do not respond to chemotherapy or radiation treatments, and recurrent cancer.

Tumor sequence analysis is performed by Foundation Medicine, Inc. to help us better understand the genetic signature of the tumor and identify the appropriate targeted therapy treatment. Foundation Medicine has one of the largest and most robust collections of common and rare clinical tumor profiles in the world, giving us the ability to examine more than 300 genes at a time. They are also the oldest, most established company working to facilitate tumor mutation analyses. In 2017, we submitted 23 cases to Foundation Medicine.

Research is crucial to advancing targeted therapies and developing new, effective cancer treatments. To this purpose, Akron Children’s established a cancer biorepository for tumor samples. Tumor tissue is collected at the time of diagnostic biopsy or tumor resection. Tissue in excess of that required for diagnostic testing is banked for current and future research. Additionally, other biological materials, including blood, serum, and urine, are also collected. In 2017, 361 specimens from 35 patients were entered into the cancer biorepository.

Translational Research

Our translational research program explores determinants of carcinogenesis in childhood bone tumors and leukemias focusing on epigenetic events that alter gene expression patterns in cancer cells. Through analysis of tumor specimens and the use of in vitro cellular models, our investigators, in collaboration with investigators at Kent State University and Northeast Ohio Medical University, are identifying molecular pathways that drive cancer cell development, specifically those that may be targeted with drugs or manipulated by pharmacologic epigenetic reprogramming.

Currently, research is focused on epigenetic events that contribute to relapse in acute lymphoblastic leukemia and to drug resistance in osteosarcoma. The laboratory offers basic/translational research training to pediatric hematology-oncology fellows and interested residents in our Department of Pediatrics. It also provides a summer research experience for medical students.
Scholarly Publications/Presentations

Peer-Reviewed Publications


Invited Article

Book Chapters


Oral Presentations


Poster Presentations

Sampson M, Savelli S. Differing neonatal presentations of epsilon gamma delta beta thalassemia within a family. Annual Meeting of the American Society of Pediatric Hematology-Onco, Montreal, Canada, April 2017.


Pediatric Hematology-Oncology Fellowship Program

The Hematology-Oncology Fellowship Training Program was approved by the Accreditation Council for Graduate Medical Education in 2006. In July 2017, Erin Wright, MD, began her third year of training, which focuses on research. Dr. Wright conducted a clinical trial evaluating the efficacy of aromatherapy in managing chemotherapy-induced nausea and vomiting. She also performed clinical duties in both outpatient and inpatient settings. Upon completion of her fellowship, Dr. Wright will pursue a one-year fellowship in neuro-oncology at Cincinnati Children’s Hospital Medical Center.

Vanisha Patel, MD, began her second year of fellowship training, focusing on research. She is studying the presentation and length of time to diagnose brain tumors in children in northeast Ohio.

Matthew Henderson, DO, joined our fellowship program after completing a pediatric residency at the Touro College of Osteopathic Medicine in New York City. His first year of training has consisted primarily of clinical rotations in our inpatient unit and outpatient clinic.

18th Annual Alex Koufos, MD, Memorial Lecture

Stephen P. Hunger, MD, was the 2017 Koufos Lecturer. Dr. Hunger is Chief of the Division of Pediatric Oncology and Director of the Center for Childhood Cancer Research at Children’s Hospital of Philadelphia. He is a nationally renowned expert in the field of leukemia.

On Oct. 6, Dr. Hunger presented “New Developments in the Treatment of Pediatric Acute Lymphoblastic Leukemia” in the Considine Auditorium at Akron Children’s. Following the lecture, he met with our fellows and staff to discuss interesting and difficult leukemia cases.

Friends, family and patients of Dr. Koufos established the Alex Koufos, MD, Lectureship following his death in 1998. Dr. Koufos was a pediatric hematologist-oncologist at Akron Children’s from 1988 to 1998.

EDUCATIONAL PRESENTATIONS


Prasad Bodas, MD, “Grief and Loss,” Case Western Reserve University School of Medicine, Cleveland, Ohio, Sept. 2017.
School and Community Oncology Outreach Program

The School and Community Oncology Outreach Program (SCOOP) raises awareness about childhood cancer in schools and communities, while dispelling myths, misconceptions and fears through education. The staff includes Melinda Aylward, BSN, RN, CPON, hematology-oncology outreach coordinator, and schoolteacher Carla Lukens, BEd. They serve as advocates for children and families by supporting the social and academic needs of pediatric cancer patients. They help children make a smooth transition back to school after an extended absence by ensuring they complete assignments during treatment and maintain relationships with school friends.

The hematology-oncology outreach coordinator advocates for classroom accommodations for patients, including scheduling and attending meetings to establish or revisit individualized education plans (IEPs) and 504 Plans.

Through SCOOP, the Showers Family Center distributes educational materials at health fairs and community events focused on sun safety/skin cancer prevention, HPV vaccines, breast cancer prevention and cancer risks associated with tobacco use.

HEMOSTASIS AND THROMBOSIS CENTER

Outreach is a key component of the comprehensive, family-centered care provided in our Hemostasis and Thrombosis Center. Our outreach nurse educator provides ongoing education for patients, families and communities. While individual educational needs are addressed during clinic visits, we provide education for extended family and home infusion training through home visits and dinner programs in patients’ local communities. Education is also provided to school and daycare personnel, and through community health fairs.

Outreach activities held in 2017 included:

Community programs

- Hosted first “Dinner with the Doc” program in the Akron area attended by 30 patients/family members.
- Collaborated with local medical providers to present a hemophilia program for the Danville area to 25 patients/family members.
- Collaborated with the Northern Ohio Hemophilia Foundation (NOHF) to present the second annual Family Camp weekend for 37 patients/family members.

Home/self-infusion classes

- Promoted independence by training patients and/or family members to infuse IV medication at home.

  8 PATIENTS
  6 CLASSES

School and daycare presentations

- Provided education at schools and daycare centers to ensure continuity of care in the community.

  13 PRESENTATIONS
  197 ATTENDEES

Health fair displays

- Provided community and medical professional education to increase awareness of bleeding disorders.

  4 COMMUNITY EVENTS
  1 SCHOOL NURSES MEETING
  3,000 PARTICIPANTS
Survivorship Program and Young Adult Transition Clinic

Our Childhood Cancer Survivorship Program was established in 2002 to offer screening, prevention and treatment of late effects related to cancer therapy. Services are offered to any childhood cancer survivor who has been off therapy for at least two years and has recovered from any acute effects related to treatment, regardless of where they were treated.

Multidisciplinary, comprehensive clinics are held twice a month and include an oncologist, nurse practitioner, social worker, physical therapist, school liaison and/or schoolteacher, genetics counselor, dietitian, child psychologist and chaplain. Audiologists are also available, as well as subspecialists from cardiology, endocrinology, nephrology, ophthalmology, pulmonary medicine and gastroenterology. Many patients are offered neuropsychological testing to screen for potential neurocognitive deficits related to treatment. We also provide yearly follow-up for survivors who are not due for a multidisciplinary visit. We have close working relationships with many area adult subspecialists to assist our young adult survivors.

We offer education, support and access to the most up-to-date information and research to patients, parents and health care providers. Each patient receives an individualized treatment summary with plans for follow-up care, educational materials regarding their specific cancer and treatment, and general wellness information to encourage a healthy lifestyle.

The Young Adult Transition Clinic offers 18- to 25-year-olds the opportunity to discuss concerns regarding their cancer, treatment or late effects. We focus on developing the self-advocacy skills they need to navigate the adult health care system and take responsibility for their health and well-being. We also offer assistance with college and job applications.

In 2017, the survivorship program provided medical care and services to 102 patients on our Akron campus, including 16 bone marrow transplant survivors and 27 new patients. In the Mahoning Valley, we provided care to 13 survivors, including two new patients.

REGION VI SICKLE CELL PROGRAM

The sickle cell outreach education program provides education and raises awareness about sickle cell disease and sickle cell trait.

- **25 Health Fairs**
- **11,053 Attendees**
- **13 Classroom Presentations**
- **767 Students**
- **9 Teachers**
- **21 Church Mailings**
- **1,725 Congregants**
- **200 Participants**
- **13 Classroom Presentations**
- **9 Teachers**
- **767 Students**
- **11,053 Attendees**
- **25 Health Fairs**

Sickle Cell Outreach

**MYCHAL CLAYTON SICKLE CELL AWARENESS WALK**

**21 CHURCHES**

**1,725 CONGREGANTS**

**200 PARTICIPANTS**

**13 CLASSROOM PRESENTATIONS**

**767 STUDENTS**

**9 TEACHERS**

**11,053 ATTENDEES**

**25 HEALTH FAIRS**
PATIENT/FAMILY SATISFACTION

Hematology-oncology patients were surveyed in 2017 through Press Ganey, a nationally recognized organization that provides information to improve patient experience by assessing satisfaction with our care. Our division scored in the top 10 percent of participating pediatric hematology-oncology programs in the following categories:

- Overall doctor rating
- Physician communication quality
- Listening carefully to you
- Showing respect for what you say
- Spending enough time with you

Sample comments received include:

- “The care and concern for my daughter from everyone was beautiful to see and feel. Thank you.”
- “We are always impressed and very grateful for the care we receive at [Akron Children’s Hospital]. Thank you!”
- “I am very grateful for all the staff and the level of care at Children’s. For a hospital experience, it was the best ever!”
- “My son was very ill. [The provider] did everything she could to make it a good experience and to help him feel better… including personally making him some chicken noodle soup.”
- “We can’t say enough good things about our regular nurses – they have become like family – loving and supportive during these stressful times.”

REDCUCING CENTRAL LINE-ASSOCIATED BLOOD STREAM INFECTIONS

We participate in the Solutions for Patient Safety national collaborative to reduce central line-associated blood stream infections (CLA-BSI) among hospitalized hematology-oncology patients. Inpatient data submission started in November 2009. Baseline infection rates were submitted and we began staff education on central line care in December 2009. In addition to existing interventions, including a maintenance line care bundle and oral care bundle, we added an environmental care bundle in 2017 to decrease our infection rate.

The environmental care bundle includes daily patient care, daily cleaning of high-touch surfaces within patient rooms and deep-cleaning of all rooms at least every 30 days. In 2017, our infection rate once again dropped below the national average.

5-year Overall Survival Rates For Those Diagnosed in 2008-2012

<table>
<thead>
<tr>
<th>Disease</th>
<th>5-year Overall Survival Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACUTE LYMPHOCYTIC LEUKEMIA (AGES 2-10 YEARS, ALL SUBTYPES AND RISK GROUPS)</td>
<td>100%</td>
</tr>
<tr>
<td>ACUTE MYELOGENOUS LEUKEMIA</td>
<td>74%</td>
</tr>
<tr>
<td>NEUROBLASTOMA (AGES 18 MONTHS AND OLDER)</td>
<td>67%</td>
</tr>
<tr>
<td>MEDULLOBLASTOMA (AGES 5-18 YEARS)</td>
<td>67%</td>
</tr>
</tbody>
</table>

VACCINE-ELIGIBLE ONCOLOGY PATIENTS RECEIVED SEASONAL INFLUENZA VACCINE

95%
SAFE ADMINISTRATION OF CHEMOTHERAPY

Our chemotherapy administration safety initiative began in 2014 to address chemotherapy-related medical errors. The ongoing goal is to decrease the number of potentially harmful errors to below 15 percent of all chemotherapy-related errors. Errors are given a grade from A to I based on a standardized grading system, MIDAS, or Minor Incident Decision Analysis Software. Potentially harmful errors are those with a MIDAS grade of D or higher that required intervention or resulted in patient harm.

In 2017, while we saw a low number of chemotherapy errors, the percentage of errors with a grade of D or higher was stable. We will continue with our current chemotherapy safety program, which includes daily chemotherapy huddles, a two-provider review of chemotherapy orders, and delivery of chemotherapy orders to the pharmacy 48 hours before administration for additional review.

We are also developing an improved reporting process so the Chemotherapy Task Force can generate reports for review by the Quality Committee. This may lead to further initiatives to decrease error rates.

REVACCINATION OF BONE MARROW TRANSPLANT PATIENTS

Based on information and data gathered by the CDC, Infectious Disease Society of America (IDSA), and American Society of Blood and Marrow Transplantation (ASBMT), it is well known that antibody titers to vaccine-preventable diseases decline during the first four years after an allogeneic or autologous stem cell transplant. While vaccine-preventable illnesses are uncommon, they pose a particular risk to bone marrow/stem cell transplant patients. Therefore, in 2017, we developed a revaccination program for these patients based on the consensus guideline published by the CDC, IDSA and ASBMT.

Timely revaccination was defined as revaccination for all eligible post-transplant patients within two months of the recommended time. The goal is to have 100 percent of eligible patients receive timely revaccination.

PATIENTS RECEIVING TIMELY REVACCINATION

<table>
<thead>
<tr>
<th>Type of Transplant</th>
<th>Before Intervention</th>
<th>After Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allogeneic Transplants</td>
<td>18%</td>
<td>67%</td>
</tr>
<tr>
<td>Autologous Transplants</td>
<td>0%</td>
<td>75%</td>
</tr>
</tbody>
</table>

ANTIBIOTICS IN HIGH-RISK PATIENTS WITH FEVER

Since mid-2009, we have been improving systems so that febrile hematology-oncology patients with central lines, who are also at risk for serious infection, receive intravenous antibiotics within one hour of arrival at the hospital, regardless of point of entry (outpatient clinic, emergency department, inpatient unit). Our goal is to ensure that 90 percent of these patients receive IV antibiotics within one hour.

An area where we continued to struggle was in the Emergency Department on our Akron campus. In 2017, a team with members from the Emergency Department, Hematology-Oncology, Informatics, Infectious Disease and Pharmacy developed a patient alert process and provider order sets, resulting in a more uniform and streamlined process. This collaborative effort has significantly improved the timing of antibiotic administration for patients arriving at our Akron Emergency Department.
Committee Participation, Awards & Grants

Participation on national, state and regional committees

John Fargo, DO
- American Society of Pediatric Hematology-Oncology: Education Committee
- Hemostasis and Thrombosis Center Great Lakes Regional Advisory Committee

Jeffrey Hord, MD
- American Academy of Pediatrics: Section on Hematology-Oncology Executive Committee (Immediate Past Chair)
  Pediatrics in Review Editorial Board
  Oncology Supportive Care Review Group
- American Society of Pediatric Hematology-Oncology (ASPHO):
  Workforce Writing Group (Chair)
  Workforce Strategy Group
  ASPHO Nominating Committee
  ASPHO Membership Committee (Interim Chair)
- American Thrombosis and Hemostasis Network: Data Quality Committee (Chair)
- Ohio Department of Health: Bureau for Children with Medical Handicaps Medical Advisory Board
- Solutions for Patient Safety: CLA-BSI Co-Leader
  Hematology-Oncology Work Group Leader
- U.S. News and World Report: Best Children’s Hospitals Cancer Working Group (Chair)

Steven Kuerbitz, MD
- Ohio Department of Health: Stem Cell Transplantation Review Committee

Sarah Rush, MD
- EPIC National Oncology Steering Committee
- EPIC Oncology Analytics Brain Trust

Stephanie Savelli, MD
- American Academy of Pediatrics: Coagulation Disorders Review Group for the Section on Hematology-Oncology Subcommittee

Irene Boehlefeld, BSN, RN-BC, CPHON
- Northern Ohio Hemophilia Foundation Board
- FAMOHIO Board

Jeffrey Hord, MD
- American Academy of Pediatrics: Section on Hematology-Oncology Executive Committee (Immediate Past Chair)
  Pediatrics in Review Editorial Board
  Oncology Supportive Care Review Group
- American Society of Pediatric Hematology-Oncology (ASPHO):
  Workforce Writing Group (Chair)
  Workforce Strategy Group
  ASPHO Nominating Committee
  ASPHO Membership Committee (Interim Chair)
- American Thrombosis and Hemostasis Network: Data Quality Committee (Chair)
- Ohio Department of Health: Bureau for Children with Medical Handicaps Medical Advisory Board
- Solutions for Patient Safety: CLA-BSI Co-Leader
  Hematology-Oncology Work Group Leader
- U.S. News and World Report: Best Children’s Hospitals Cancer Working Group (Chair)

Steven Kuerbitz, MD
- Ohio Department of Health: Stem Cell Transplantation Review Committee

Sarah Rush, MD
- EPIC National Oncology Steering Committee
- EPIC Oncology Analytics Brain Trust

Stephanie Savelli, MD
- American Academy of Pediatrics: Coagulation Disorders Review Group for the Section on Hematology-Oncology Subcommittee

Irene Boehlefeld, BSN, RN-BC, CPHON
- Northern Ohio Hemophilia Foundation Board
- FAMOHIO Board

Ann Stratton, BSN, CNP, CPHON
- Children’s Oncology Group: Nurse Nominating Committee (Chair)
- Northeast Ohio Association of Pediatric Hematology-Oncology Nurses (Membership Chair)

JoEllen Weilnau, PharmD
- Children’s Oncology Group: Young Investigator Committee
  Pharmacy Research Committee
  Pharmacy Committee
- Pediatric Pharmacy Advocacy Group: Advocacy Committee
- American College of Clinical Pharmacy: Pediatric PRN Network
- Pediatric Blood and Marrow Transplant Consortium: Pharmacy Committee
- American Society for Blood and Marrow Transplantation: Pharmacy Committee

LaTonya Lewis
- The National African-American Male Wellness Walk Initiative
- The Akron Office of Minority Health Advisory Committee
AWARDS

Jeffrey Hord, MD; Steven Kuerbitz, MD; Donna Patton, MD; and Stephanie Savelli, MD, named a 2017 “Top Doc” in pediatric hematology-oncology in northeast Ohio.

Elizabeth Miller, RN, CNP, received the Ira Gaffin Memorial Award from FAMOHIO and a Lifetime Achievement Award from the National Hemophilia Foundation.

GRANTS

In 2017, the Showers Family Center received grants from the following sources:

- Akron Children’s Hospital Foundation
- Cincinnati Children’s Hospital Medical Center, Phase 1 Trials
- Children’s Oncology Group Clinical Trials
- Cascade Hemophilia Consortium
- Centers for Disease Control and Prevention, Hemostasis and Thrombosis Center
- Hemophilia Foundation of Michigan – Maternal and Child Health Bureau/Centers for Disease Control and Prevention
- Ohio Department of Health Sickle Cell Program
- Johns Hopkins University Agency for Healthcare Research and Quality
- My Life, Our Future Grant
When their son Eduardo’s leukemia returned in 2017, Javier and Guadalupe Canada were out of options. The couple didn’t have access to advanced pediatric cancer care where they lived in Calpulalpan, Mexico. They hoped to bring Eduardo to the United States for treatment, but were unable to get visas.

Eduardo, however, was born in the United States and is a citizen. Desperate to save their 11-year-old son, Javier and Guadalupe sent Eduardo 2,300 miles away to Akron Children’s Hospital. A doctor friend with a travel visa accompanied him. Eduardo’s aunt, who lives here, looked after him.

Eduardo was so ill he couldn’t walk. He had been treated in Mexico for acute lymphoblastic leukemia (ALL). The family stopped treatment because they were unhappy with the medical care. They tried natural remedies, but his leukemia came roaring back.

When Eduardo arrived at Akron Children’s, he became the first case for Matthew Henderson, DO, who had just started his pediatric hematology-oncology fellowship at the Showers Family Center.

Eduardo needed chemotherapy. If the treatment sent him into remission, he would then need a stem cell transplant.

“He was so sick. The initial goal, beyond the transplant, was to get his family here so they could be with him in case these were his last days on earth,” Dr. Henderson said.

Dr. Henderson, oncology social worker Heather Lanfranchi and transplant coordinator Courtney Culbertson began the arduous task of contacting embassy and U.S. Customs officials to allow Eduardo’s parents entry into the United States, while trying to find a stem cell donor. Eduardo’s 12-year-old sister, Denisse, would be the most likely match.

“We had to check the bone marrow type of his sister,” Culbertson said. “The best likely match for a patient is a full sibling. The problem was trying to test his sister while she was still across the border.”

Akron Children’s sent the family kits to collect blood cells for typing, but couldn’t get them past U.S. Customs and Border Protection.

The National Marrow Donor Program came to the hospital’s aid and helped break the customs logjam. It turned out to everyone’s relief that Denisse was a perfect match.

Meanwhile, the family and the Akron Children’s team worked non-stop to get permission for Denisse’s entry into the United States.

On Sept. 15, U.S. Customs told Lanfranchi the application was approved.

About six weeks after Eduardo arrived in Akron, his parents made the trip with Denisse. By that time, Eduardo had responded well to chemotherapy.

The family has been staying at the Ronald McDonald House of Akron. Emily Lanier, Spanish medical interpreter, has been at their side to bridge the language barrier.

“I was so happy when I saw my family,” Eduardo said through Lanier, as he snuggled with his dad at the Ronald McDonald House. “First my dad came into my room with my sister and I hugged them. Then my mom came in and I said, ‘Finally!, because I’m here with my aunt and it’s hard.”

Eduardo underwent the stem cell transplant in December. He is now in remission, but must stay close to the hospital for a while. He is monitored regularly for signs of transplant complications. His parents’ visas were extended, so they can remain in the United States with him.

“In January he’ll be one year out from transplant and able to be safely transferred to a hospital closer to home in Mexico,” said Lanfranchi.
Since 2003, funds raised by LOPen Charities have supported the Showers Family Center in numerous ways, such as providing a schoolteacher for hospitalized patients and assisting with transportation or funeral expenses for needy families. Funds have also been used to support cancer research, the expansion of our bone marrow transplant program and the creation of a special lounge for hospitalized teens.

LOPen Charities, which was started by Phil and Jen Lopez and Brad and Jen Croce, began with an annual golf tournament that included a live and silent auction. After supporting Akron Children’s for many years through LOPen Charities events, the Mawaka family began collaborating with LOPen in 2016, and helped expand Rockin’ FORE the Kids into a weekend-long charitable event that includes music, fine dining, an auction and golf.

Scott and Julie Mawaka, Phil and Jen Lopez, and Brad and Jen Croce recently made a $1 million commitment to the Showers Family Center to establish The LOPen Charities and Mawaka Family Chair in Pediatric Hematology-Oncology to recognize the leadership of Jeffrey Hord, MD, director of the Showers Family Center. Funds raised in 2018 through 2020 will go toward the $1 million commitment for the endowed chair.

This commitment marks nearly $2 million that LOPen Charities will raise for the Showers Family Center by 2020. The endowed chair will enable Dr. Hord to advance patient care and education by providing funds for patient care initiatives, including facility improvements, patient family support, staff education and new equipment.

The Akron Children's Hospital Foundation has committed to raise an additional $500,000 for the endowed chair, making it a planned $1.5 million endowment.

"The support of generous foundations, corporations and individuals is absolutely essential to provide world-class care and support to the children and families of our region who are battling cancer and blood disorders. It’s inspiring to see how the generosity of the Lopez, Mawaka and Croce families has already benefited the patients we treat," said Dr. Hord. “This new significant commitment will allow us to continue to provide exceptional care to children facing cancer and blood disorders far into the future.”

“After supporting the Showers Family Center for more than a decade, we felt this was the right time to make a big commitment,” said Phil Lopez. “Northeast Ohio families are so fortunate to have this resource right in their backyard, and we’re happy to have a part in it.”

“The Mawaka family had supported Akron Children’s for many years through LOPen Charities events, and after partnering with them in 2016, realized the opportunity to create the endowed chair,” said Scott Mawaka. “We are proud to be a part of this incredible achievement honoring Dr. Hord.”

At Akron Children’s, endowed chairs support the advancement of patient care, research and education programs. Established through philanthropic support, an endowed chair provides an annual source of income to enable the chair holder to pursue innovative programs and efforts.

“I am proud of the level and quality of care that is represented by people like Dr. Jeff Hord and his phenomenal team,” said Bill Considine, CEO Emeritus of Akron Children’s. “It’s hard to capture the appreciation in words of what this endowed chair will mean to Akron Children’s Hospital. It’s going to touch countless lives.”
Your support of the Showers Family Center is vital to providing the world-class care families receive when they come to Akron Children’s Hospital.

In 2017, donors gave more than $1.2 million to support our patient families battling cancer and blood disorders and to conduct research that will improve future outcomes for our kids.

Thank you – we could not do this without your support. We hope you will continue to ensure bright futures for our patients by making a donation today using the enclosed envelope or online at akronchildrens.org/donate.

Thanks to the following who provided significant support in 2017:

**Fundraising Events**
- Alicia Cooper Memorial Event
- Andrianna’s Army 5K
- Anonymous
- Dancing for the Kids
- East Coast Martial Arts
- Giant Eagle Campaign
- Go4TheGoal/Lace Up Campaign
- Hillsdale Cancer Crusaders
- Kent State University Flash-A-Thon
- Kylie Rose Run
- LOPen Charities Golf/Rockin’ Fore The Kids
- Mike Dunaway Memorial Fundraiser
- Mychal Clayton Sickle Cell Walk
- Ohio Lions Walk
- Project Ed Bear
- Stow-Munroe Falls Booster Club
- Team Trevor

**Major Donors**
- Individual, Corporate and Foundation Gifts
- Greater than $250
  - Mr. Nicholas G. Accordinio
  - Ace American Insurance Co.
  - Mr. John R. Adams and Dr. Sarah A. Tellalian-Adams
  - Advanced Health Media
  - Akron Community Foundation
  - Akron Summit Community Action
  - Alicia Cooper Memorial
  - Alliance Data
  - Anonymous
  - Aon Foundation
  - Mr. and Mrs. Stanley L. Apple
  - Archbishop Hoban High School
  - Mr. Kenneth Babby
  - Barclays
  - Barry F. Fish, MD LLC
  - Beck Family Foundation
  - Mr. and Mrs. Carl T. Bell
  - Mr. and Mrs. Timothy J. Bentivegna
  - Mr. and Mrs. Nathaniel P. Berry II
  - Dr. and Mrs. Michael T. Bigham
  - Mrs. Frances Y. Bittle
  - BNP Paribas
  - Dr. and Mrs. Vinayak D. Bodas
  - Mr. and Mrs. Matthew J. Bohlefeld
  - Bridgestone Americas Tire Operations LLC
  - Brimfield Junior Leos
  - Ms. Susan M. Browse
  - CareSource Management Group
  - Cedar Point
  - Centene Management Company LLC
  - Charisma Community Connection
  - Mr. and Mrs. Joseph C. Chen
  - Dr. Tsulee Chen and Mr. John Christopher Evans
  - Ciriello Carr Funeral Homes
  - Citi Business Services
  - Dr. Bruce H. Cohen and Mrs. Anna Frabotta
  - Community Foundation of the Chattahoochee Valley Inc.
  - Mr. and Mrs. James T. Cooper
  - Credit Agricole Corporate & Investment Bank
  - Ms. Janet Dauber
  - Mr. Siddharth David
  - DC Construction Associates Inc.
  - Mr. and Mrs. Ken Deininger
  - Deloitte & Touche LLP
  - Delta Sigma Theta Sorority
  - Dennis Taylor Insurance Agency
  - Mr. and Mrs. Gary W. Diefendorff
  - Dinn, Hochman & Potter LLC
  - Mr. and Mrs. Robert A. Dotterer
  - Ms. Debra J. Dunaway
  - East Coast Martial Arts Inc.
  - Ms. Tiffany A. Edwards
  - Elk & Elk Co. Ltd.
  - Mr. and Mrs. Douglas S. Elliott
  - Mr. Brandt M. Evans
  - Factory Mutual Insurance Foundation
  - Mr. and Mrs. Christopher Fashinpaar
  - FedEx Custom Critical Corporate Headquarters
  - Fidelity Charitable Gift Fund
  - Dr. and Mrs. John A. Fink
  - FirstEnergy Foundation
  - FirstEnergy Young Professionals Club
  - First National Bank of Pennsylvania
  - Mr. Jon Fiume
  - Mr. Michael R. Flory
  - FM Global
  - Fraternal Order of Eagles 141
  - Fraternal Order of Eagles 2223
  - Mr. and Mrs. Eric S. Frey
  - Mrs. Judith K. Frost
  - Mr. David R. Fulton
  - George H. Deuble Foundation
  - Giant Eagle Corporate
  - Go4TheGoal
  - Goldman Sachs & Company LLC
  - Good Intentions Foundation Inc.
  - Goodyear Tire & Rubber Co.
  - Corporate Headquarters
  - Mr. and Mrs. William J. Granchi
  - Mr. and Mrs. John Groce
  - Guardian Life Insurance Company of America
  - Mr. Gary L. Gustafson
  - Hanna, Campbell & Powell LLP
  - Mr. Tom W. Hardin
  - Hasenstab Architects Inc.
  - Healthy Communities Healthy Youth
  - Mr. and Mrs. James P. Hermetet
  - Dr. and Mrs. Gregory Hill
  - Mrs. Judy C. Hill
  - Hillsdale Cancer Crusaders
  - Dr. Jeffrey and Dr. Patricia M. Hord
  - Mr. Gerald L. Indorf
  - InfoCision Management Corporation
  - Ironman Foundation Inc.
Mr. and Mrs. Eric M. Jacobs
Dr. and Mrs. Ahmad K. Jadallah
Jones & Wenner Insurance Agency Inc.
Mr. and Mrs. George Karvounides
Mr. and Mrs. Philip S. Kaufmann
Kent City School District
Kent State University
Flash-A-Thon
Mrs. Barbara Kerscher
Mr. Robert D. Kerscher
Dr. and Mrs. Joseph M. Kirk
Mrs. Cynthia Knight
Kovatch Castings
Mr. and Mrs. Douglas Krapf
Mrs. Paul J. Kruder
Kura Financial Inc.
La Famiglia Management & Distribution Company
Mr. and Mrs. Matthew A. LaFountain
Mrs. Barbara Latchic
Leave A Legacy
Mr. Scott W. Lindsay
Mr. and Mrs. J. J. W. Liu
Louisville Eagles Athletic Club Inc.
Lowenthal & Abrams PC
Lubrizol Foundation
M. Conley Company
Mr. and Mrs. Richard A. Malson II
Dr. and Mrs. Larry D. Markley
Mary Bailey Chambers Trust
McKinley Aerie 2370 FOE
McKinley Eagle Riders 2370
McKinley Eagles Charity Fund Inc.
Mellion Orthodontics
Merrill Lynch
Mr. and Mrs. Scott Metzler
Mobile Cause Inc.
Mr. and Mrs. Robert S. Mueller
MUFG Foundation
MUFG Union Bank
Mr. and Mrs. Joseph Musitano Jr.
Natixis North America LLC
Nemer Enterprises LLC
Mr. and Mrs. Charles A. Neubert
Mr. and Mrs. Al Newyear
Mr. Mark A. Nolan
North Ridgeville Dental Clinic LLC
Northern Ohio Golf Charities Foundation
Northwestern Mutual – Akron Office
Northwestern Mutual Foundation
Ohio Bath Solutions LLC
Ohio Hematopoietic Stem Cell Transplant Consortium
Ohio Lions Inc. MD13
OMNOVA Solutions Foundation
Mr. and Mrs. Thomas R. Orthel
Pappas Construction Company Inc.
Mr. and Mrs. Mark Q. Partin
Dr. Donna Felice Patton and Mr. Bill Lawther
Mr. and Mrs. Dave L. Pellegreni
Perlmutter Communications Inc.
Mr. Michael Peterson and Ms. Julie Raymond
Mr. and Mrs. Richard A. PiekarSKI
PNC Bank NA Corporate Office
Project Ed Bear Inc.
Quaker Steak & Lube
Ms. Joanna Rainney
Mr. Jeffrey Rand
Rinehardt Law Firm Ltd.
Mr. and Mrs. Timothy A. Ritter
Mr. and Mrs. Richard Rockich
Roth Contractors Inc.
Rough Rider Football
Mr. and Mrs. Brad M. Ruth
Saleen Club of America Inc.
Schultz & Pogue LLP
Schwab Charitable Fund
Mr. and Mrs. Matthew D. Schwabauer
Scott & Julie Mawaka Charitable Foundation Inc.
SelbertKeck Insurance
Sharon G. Nusbaum Trust Agreement DTD
Mr. and Mrs. David M. Showers
Showers Family Foundation Inc.
Signet Jewelers
Mrs. Elizabeth L. Smith
Mr. and Mrs. Eric P. Smith
Mr. and Mrs. Richey Smith
St. Baldrick’s Foundation
St. Hilary Parish
Dr. Lisa D. Stanford
Mr. and Mrs. Shawn C. Starcher
Stealth Biotherapeutics Inc.
Mr. and Mrs. Jonathan M. Steingass
Stephen A. Comunale Jr.
Family Cancer Foundation
Streetsboro Police Association
Rachel D. Martinez Theken, DVM
T & J Handyman Services
Thirty-One
Mr. and Mrs. James S. Thompson
Thomson Reuters
Toast Life Foundation
Mr. and Mrs. Michael P. Trapani
Trevor Weigand Charitable Foundation
Mr. and Mrs. Antonios P. Tsarouhas
Mr. and Mrs. James E. Tweddle
UBS Business Solutions
Urban Ounce of Prevention Services Inc.
Wadsworth Youth Baseball and Softball Association
Walter W. Born Foundation
Ms. Beverly Warren
Wells Fargo Advisors
Wells Fargo Bank
Western Reserve Hospital
Mr. and Mrs. James E. Wilkes
Mr. and Mrs. Scott J. Wilkes
Wishes Can Happen Inc.
Women’s Board of Akron Children’s Hospital
Dr. and Mrs. Dennis J. Wright
Young Living
YourCause LLC Trustee
A wide variety of support activities are offered to our patients and families throughout the year. Here are some of the activities that took place during 2017.

• The 7th Annual Prom-to-Remember was held in April at the Ritz-Carlton in Cleveland. The event is organized by The Unforgettable Prom Foundation Inc., which is dedicated to helping families and their teens with cancer.

• Camp Ed Bear was held in June at Camp Carl in Ravenna. The weekend camp for hematology-oncology patients is made possible through the generosity of Project Ed Bear.

• Family dinners were provided monthly to families of hospitalized patients, funded in part by The Littlest Heroes.

• Five family luncheons were provided by Project Ed Bear and Comunale Fund.

• The 6th Annual Mahoning Valley Hematology-Oncology Awareness Celebration was held Sept. 16 at Stambaugh Stadium and included a Youngstown State University football game.

• The 30th Hematology-Oncology Survivors Celebration was held at Canal Park on Aug. 11 and included an Akron Rubber Ducks baseball game and fireworks.

• The Mychal Clayton Sickle Cell Walk was held Sept. 16 at Lock 3 in Akron.

• The Northern Ohio Hemophilia Foundation Hemophilia Walk was held Sept. 9 at the Akron Zoo.

• The 6th Annual Mahoning Valley Holiday Celebration was held Dec. 13 at Embassy Banquet Centre. A total of 100 patients and their family members enjoyed dinner, a visit from Santa, DJ and photo booth.

• The Akron Hematology-Oncology Holiday Celebration took place on Dec. 14 at Tangier Party Center in Akron. The event was sponsored by Wishes Can Happen and included crafts, cookies, a visit from Santa and opportunities for family photographs.

• Akron Children’s Division of Hematology-Oncology offered massages, yoga and weekly social hours for patient families. These services were made possible, in part, through a grant from CureSearch.

• Santa’s Workshop was held at Akron Children’s in December. Through funds provided by Wishes Can Happen, patients purchased gifts for their families.
• In December, holiday stockings supplied by Project Ed Bear were distributed to patients.

• There were 100 hematology-oncology patient families who rode the Cuyahoga Valley Scenic Railroad’s Polar Express in December.

• Throughout the year, Flashes of Hope came to Akron Children’s to take portraits of patients and their families.

• Teen support groups for patients with an oncology diagnosis met once a month on our Akron and Beeghly campuses.

• The NEOMED Buddy Program matched patients with medical students from Northeast Ohio Medical University who provided support and participated in activities with our patients, such as bowling and movie night.

• Project Outrun visited the Showers Family Center seven times throughout the year and worked with 45 patients to design their own custom pair of Nike shoes to help them “outrun” their illness.

About Akron Children’s Hospital

Akron Children’s Hospital is ranked among the best pediatric hospitals by U.S. News & World Report, but it’s our compassionate approach to treatment that makes us truly exceptional. To ensure families have convenient access to care, we have two hospital campuses in northeast Ohio and 60+ primary, specialty and urgent care locations. We collaborate with many community partners to bring our neonatal and pediatric expertise to patients in their healthcare facilities. Through our Children’s Home Care and School Health programs, our nurses treat kids where they live and learn. With more than 1 million patient visits in 2017, we’ve been leading the way to healthier futures for children through quality patient care, education, advocacy, community service and medical discovery since 1890. Learn more at akronchildrens.org.