



MD Anderson
Children's Cancer Hospital
FY21 Year in Review

Pediatrics by the numbers

One advantage of receiving treatment at MD Anderson Children’s Cancer Hospital is that patients are more than just a number. We offer a personalized setting that caters to the unique needs of children, adolescents and young adults — while still having access to the resources of a major, comprehensive cancer center. But that’s not to say we don’t have some impressive numbers of our own. Here’s a breakdown of some stats from Fiscal Year 2021:



TEXAS
1,613
PATIENTS

U.S., OUTSIDE OF TEXAS
349
PATIENTS

INTERNATIONAL
47
PATIENTS

377
NEW PATIENTS



1,270
CONSULT VISITS



10,220
FOLLOW-UP VISITS



5,746
INPATIENT DAYS

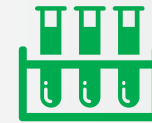


2,107



TOTAL TELEHEALTH VISITS

VIDEO VISITS 1,665
PHONE VISITS 442

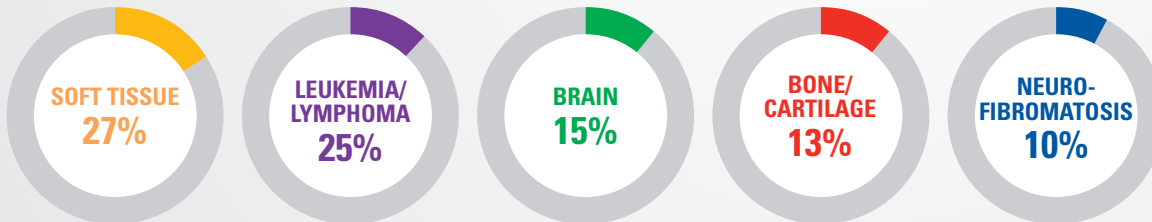


\$6,329,550

TOTAL RESEARCH GRANT DOLLARS

FEDERAL	\$2,505,150
PRIVATE INDUSTRY	\$1,380,088
CPRIT	\$1,782,785
FOUNDATION	\$661,527

TOP 5 NEOPLASMS



On the cover: Six-year-old Christian shows off his synthesis piece featuring many of the techniques he learned as a student in our Pediatric Education and Creative Arts Program: weaving, collage, mixed media, linework and other design concepts.



Richard Gorlick, M.D.
Division Head



Lisa Hafemeister, M.H.A., F.A.C.H.E.
Executive Director and
Division Administrator

During a challenging year of COVID-19 safety precautions, the arrival of the first vaccines and an unexpected winter storm that caused electrical and water outages for several days, our Pediatrics Division stands proud of the accomplishments we achieved. As a team, we helped patients and their families as they experienced one of the worst challenges of all — cancer.

The University of Texas MD Anderson Children's Cancer Hospital's multipronged approach included the continued limitation of visitors accompanying patients, using proper personal protective equipment and participating in institutional efforts to provide patients and staff with up-to-date data about the impact of the virus. Rodrigo Mejia, M.D., professor of Pediatrics – Patient Care and medical director of the Pediatric Intensive Care Unit (PICU), was the third person at MD Anderson to receive a COVID-19 vaccine. He shared information about vaccine safety with media outlets serving Spanish-speaking audiences. The Ride-Out Team remained at the Texas Medical Center campus to support patients and vital research during the February 2021 winter storm that caused outages for days in Southeast Texas.

We are proud of many patient care programmatic accomplishments in Fiscal Year 2021, including achieving an elevated status for the PICU, launching a Pediatric Hospitalist Program to more efficiently manage inpatient admissions, and working with institutional leadership to allow eligible patients as young as eight to have lab tests and select diagnostic studies performed at MD Anderson's League City location.

Pediatrics' clinical research program flourished as physician-scientists launched more than a dozen clinical trials that are among 60 studies accepting pediatric, teen and young adult patients at MD Anderson. Clinical investigators examined agents that work differently than established therapies and may have fewer side effects. Promising results were seen in a menin inhibitor for aggressive leukemias and radioimmunotherapy approaches in neuroblastoma central nervous system/leptomeningeal metastases. Other exciting trials feature stem cell transplantation and cellular therapies for blood disorders and regenerative purposes. Our research enterprise had a phenomenal year that included 56 published manuscripts, 11 of which were accepted in journals with an impact factor of 10, while also submitting competitive grant applications. Of the published manuscripts, thirteen were funded, including three grants from National Institutes of Health that will provide \$6 million to support discoveries in the next five years. In Fiscal Year 2021, a leading sarcoma foundation recognized an esteemed senior faculty member for scientific accomplishments achieved throughout her career.

The division's educational performance earned high marks in FY21. Accomplishments include the launch of "Ask the Expert," an educational event where referring

community practice and academic medicine providers were invited to a virtual presentation to learn about clinical trials available to patients diagnosed with aggressive leukemias. The Southern Association of Colleges and Schools awarded the Pediatric Education and Creative Arts Program a five-year reaccreditation. Our Pediatric Hematology/Oncology Fellowship Program earned continued accreditation from the Accreditation Council for Graduate Medical Education, and four fellows graduated from the program. Additionally, research trainees and junior faculty achieved significant milestones. One trainee earned a prestigious Odyssey Fellowship, which supports his investigation of targets in osteosarcoma lung metastases; two graduate school trainees won stipends to support their education; and junior faculty members published manuscripts in high-impact journals as first authors. Donations allowed the Adolescent and Young Adult Oncology Program to award \$46,400 in scholarships to help 31 students complete their education.

Philanthropy assisted division leadership in recognizing the strides and pandemic-induced burdens of employees. In May 2021, three Exemplary and five Citations for Excellence awards were presented to staff at the inaugural Barbara and Jerry King Pediatrics Heroes virtual awards ceremony. Jerry King is the founder and chairman of King Aerospace Corporation, and his wife, Barbara King, worked for many years as a neonatal intensive care unit nurse. Prior to the pandemic, the Kings toured MD Anderson Children's Cancer Hospital and were motivated to establish a staff recognition endowment after seeing the great care our employees demonstrated. The division's Wellness Program led other initiatives for employees, including 66 live-streamed sessions focused on creative expression, mindfulness, spiritual well-being, nutrition and exercise. When possible, inpatient nurses participated by logging on via donated tablets stored at nurses' stations. The Arts in Medicine (AIM) team recorded singing telegrams that were distributed to staff to provide cheer during Employee Appreciation Month in May. The Faris Foundation committed \$250,000 to support the AIM Program, resulting in the renaming of an employee position to the Faris Foundation Music Therapist. The foundation also furnished supplies for activities throughout the year, including a "Let there be gold" theme for Childhood Cancer Awareness Month in September.

The Division of Pediatrics' dedication to care for our patients and workforce made it possible to have a productive year despite the challenges experienced in FY21. We could not have achieved this level of success without our charitable donors, guidance from our MD Anderson Children's Cancer Hospital Advisory Board, amazing faculty and incredible team members. More than ever, we look forward to leading the way in advancing cancer treatment, research and education as we stand united in our commitment to end cancer for children, adolescents and young adults.

Sincerely,

Richard Gorlick, M.D.
Division Head

Lisa Hafemeister, M.H.A., F.A.C.H.E.
Executive Director and Division Administrator



New clinical services in League City

The MD Anderson Children’s Cancer Hospital team worked with institutional leaders to plan and open new pediatric-focused clinical services at MD Anderson League City. As of Sept. 7, 2021, some patients as young as eight years old can be seen at the facility for laboratory testing and diagnostic imaging. To meet future demand, plans are in the works to expand at the site with a pediatric outpatient clinic.



PICU opens for managing complex cases

The Pediatric Intensive Services Center was redesignated as a Pediatric Intensive Care Unit (PICU) in September 2020 after a two-year process that saw the recruitment of additional intensivists and added clinical capabilities. The unit serves patients as young as six months through young adulthood as they undergo complex therapies that might require more monitoring and support than patients on a general floor. Rodrigo Mejia, M.D., professor of Pediatrics – Patient Care, serves as the PICU medical director, and Patricia Amado, R.N., M.S., C.N.L., is the PICU nurse manager.



Inpatient setting adds Hospitalist Program

In response to an increased number of inpatients requiring help with a variety of acute and chronic conditions, MD Anderson Children’s Cancer Hospital launched a Hospitalist Program under the direction of Rachna Sheth, M.D., assistant professor of Pediatrics – Patient Care. In collaboration with each patient’s primary oncologist, Sheth and team manage admissions, provide general medical care and order labs and diagnostic work for patients.



Madelyn Garcia recently celebrated her fourth birthday — and the fact that she's in remission after participating in the menin inhibitor SNDX-5613 clinical trial.

Pediatric researchers seek alternatives for refractory and treatment-resistant cancers

The Pediatric Clinical Trials Program continues to provide a powerful armamentarium of therapies to young patients with cancer, with 60 active studies launched in our division and multiple departments at MD Anderson— plus 15 more in the pipeline — exploring new treatments for various forms of cancer. Jonathan Gill, M.D., associate professor of Pediatrics – Patient Care and program director, has facilitated an increasing number of industry-sponsored trials based on mutations seen in rare leukemias, as well as targeted therapies delivering treatment directly to tumors.

Branko Cuglievan, M.D., assistant professor of Pediatrics – Patient Care and Leukemia/Lymphoma section chief ad interim, is collaborating on a Phase I/II trial for leukemia patients (infants to adults) with the mixed lineage leukemia/ KMT2A gene rearrangement or the nucleophosmin 1 mutation. The study is evaluating the novel menin inhibitor SNDX-5613, a small molecule agent which investigators believe is a promising therapy for resistant leukemia. Read the story on page 6 to meet a young patient named Dominick who is currently participating in this trial.

Douglas Harrison, M.D., associate professor of Pediatrics – Patient Care and our pediatric medical director, was principal investigator of a Phase II/III study for patients with neuroblastoma metastases that examined intracerebroventricular radioimmunotherapy using I¹³¹-omburtamab. The monoclonal antibody attaches to the surface of neuroblastoma cells and delivers short-range radiation to the cancer while reducing impact to healthy cells and the surrounding microenvironment. Investigators believe the iodine radiation damages the cancer cells' DNA to help control the disease.

Pediatric faculty lead the field in immunotherapy management and safety

The Pediatric Stem Cell Transplantation and Cellular Therapy (SCT-CT) Program continues to lead the international oncology community when it comes to safely administering immunotherapy to young patients. Groups from across the globe, including MD Anderson's CAR T Cell Therapy-Associated Toxicity (CARTOX) Program, participated in a panel that offered consensus recommendations for the “diagnosis, grading and management of toxicities from immunotherapies in children, adolescents and young adults with cancer.” The manuscript was published in the Feb. 19, 2021 issue of Nature Reviews Clinical Oncology with the program's inaugural fellow, Dristhi Ragoonanan, M.B.B.S., as first author.

In 2019, SCT-CT Program faculty, led by Kris Mahadeo, M.D., M.P.H., associate professor of Pediatrics – Patient Care and SCT-CT section chief, published the first consensus paper on the subject. The American Society of Transplantation and Cellular Therapy incorporated the group's suggestions into the official grading system of cytokine release syndrome and immune cell-associated neurotoxicity syndrome. In the 2021 paper, the team updated guidelines, addressing biospecific T cell engagers and immune checkpoint inhibitors. Authors explored questions about post-chimeric antigen receptor (CAR) T cell therapy disease surveillance, re-immunization, infectious prophylaxis and immune reconstitution. The paper went on to highlight the importance of baseline organ assessment and the use of age-appropriate criteria when assessing vital signs, laboratory values and cognition. These consensus recommendations can now be adapted to support pediatric and AYA patients at other health care institutions.

*These are just a few of the research accomplishments from our faculty. **Learn more** about our clinical and research faculty.*

Clinical trial offers young leukemia patient a bright future

“We were told there was nothing else for us to try in Florida. But MD Anderson offered us a chance to beat the leukemia.”

Dominick Nino was an otherwise healthy kid when he first complained to his mom about sore feet and bruising in his lower legs. They both attributed the symptoms to playing soccer and tried some home remedies — but things continued to get worse. A trip to the emergency room revealed it was leukemia.

“We were shocked,” his mom, Yesica Nino, recalls.

The community hospital in Naples, Florida transferred Dominick to a larger hospital in Fort Myers that had more experience treating pediatric cancer patients. After several regimens of chemotherapy, his disease proved stubborn. April DePombo, D.O., his primary oncologist in Florida, completed her fellowship at MD Anderson Children’s Cancer Hospital. She recommended that Dominick travel to Houston for access to the latest clinical trial therapies.

“We had already consulted with some doctors at MD Anderson prior to the referral, so Dominick and I got on a medical flight there as soon as possible,” Yesica says. “When we arrived in September, we learned so much about his leukemia and the mutations that make it unique.”

Dominick has acute myeloid leukemia (AML). Under the care of David McCall, M.D., assistant professor of Pediatrics – Patient Care, Dominick enrolled in a clinical trial that addresses the MLL and FLT3 genetic hallmarks of his form of leukemia. He is currently in remission.

The trial Dominick is part of explores the effectiveness of a menin inhibitor called SNDX-5613. Branko Cuglievan, M.D., assistant professor of Pediatrics – Patient Care, leads the study’s pediatric arm. To advance new therapies like this, researchers must first perform a tremendous amount of work in the laboratory to prove that the concept has the potential to help patients. This highly technical work is expensive and time-consuming, but philanthropy can play an important role in facilitating and accelerating the drug development process.

“Major research funding is typically done through government-supported grants,” Cuglievan explains. “However, when talented researchers only have early-stage data to support a new idea, obtaining grant support is challenging. Philanthropy allows promising projects to mature and acquire additional data before becoming a blockbuster that sustains itself with competitive grants.”

Next for Dominick is a stem cell transplant. His sister, Bianca, will be his donor.

“We were told there was nothing else for us to try in Florida,” Yesica says. “But MD Anderson offered us a chance to beat the leukemia. To everyone who is doing this kind of research and donating to this kind of research, thank you. It is so important to our family.”



When Dominick Nino’s form of leukemia proved difficult to treat, his family traveled from Florida to MD Anderson for expert care and access to the latest clinical trials.

15th Annual Houston Santa’s Elves

Help Santa deliver a sleigh full of hope



Santa’s Elves deliver again

Thank you to Santa’s Elves for another successful winter fundraiser. The group is a long-standing supporter of MD Anderson Children’s Cancer Hospital and was able to raise a total of \$268,220 for pediatric sarcoma research — science that explores a type of cancer that affects many of our Adolescent and Young Adult (AYA) patients. Paige, Michael and Patrick Fertitta generously provided a \$100,000 match incentive to encourage gifts. We are thankful to all who participated!

Our Pediatric Support Programs are essential to successfully address the mental and social health needs of our young patients. The support teams are also determined to ease the cancer burden on pediatric patients and their families while still following social distance safety measures.



Our teachers share books with patients that encourage them to share their emotions — using their impressions of color to help open up conversations.

Education and Creative Arts Program

The Education and Creative Arts Program, whose masters-prepared teachers work with pre-K through 12th grade inpatients in the classroom and at their bedside, helps patients remain at or above grade level as they go through cancer treatment. “The School,” as it is often called, was recently awarded a five-year reaccreditation by the Southern Association of Colleges and Schools. School staff introduced Reading with a Twist, which features weekly virtual literacy sessions combined with interactive art activities. The group held the first annual celebration of the Early Childhood Program with five fun-filled days: Music Monday, Tasty Tuesday, Work Together Wednesday, Artsy Thursday and Family Friday.



Visual arts programming provides patients with an outlet for their emotions, ideas and creative development.

Arts in Medicine

The Arts in Medicine (AIM) team connects with patients and their families both in person and online in a variety of arts-based programs and services. This includes music therapy, bedside art sessions and collaborative community arts projects. Thanks to philanthropic support from The Faris Foundation, the AIM team was able to provide art-filled boxes to navigate safety measures during the onset of the COVID-19 pandemic, while still providing materials for patients to explore their creativity. Employees hosted a virtual talent show for patients, collaborated with the Houston Symphony on nearly 100 virtual visits and delivered more than 400 singing telegrams as part of staff wellness efforts.



The annual Teddy Bear Clinic gives pediatric patients the chance to roleplay by being clinical workers. Thanks to Bennett's Bears, each participating patient had their own cuddly "patient" to care for.

Child Life

The Child, Adolescent and Young Adult Life Program — known simply as Child Life — serves patients' psychological needs by preparing them for exams, surgeries and other medical procedures while working with families to recognize special milestones like birthdays, graduations and holidays. This past year, the Child Life team presented its Teddy Bear Clinic in a truly innovative way, creating an artistic cart that integrated a CT scan, pharmacy and surgical bay. Kids received bears courtesy of longtime donor Bennett's Bears, so they could perform some of the same medical services they receive. Marking milestones, such as honoring lives lost, is also part of Child Life's commitment to families and our pediatric community. For the first time, a virtual memorial service provided a touching moment of remembrance while prioritizing social distancing. The program included music, recognition of each patient with a candle lighting, sibling acknowledgement and other family activities.

Camps and Special Events

Our Camps and Special Events programming virtually changed its address last year from MD Anderson Children's Cancer Hospital to Zoom, which gave patients, siblings and families an opportunity to interact no matter where they were in the world. The program provided three engagement opportunities over the summer: Camp Family Night, Camp H-Town for younger kids and Camp AOK for teens. These camps typically take place in person at various campsites, but during the pandemic, the team provided an array of fun on a virtual platform.

Activities included game shows, arts and crafts, guest speakers and much more. Each camper received a box of goodies and played a Houston-themed version of Wheel of Fortune, which fostered friendly competition between patient teams and camp advisors. Other fun included a live demonstration from chef Macey Maples on how to make bobotie, a spicy South African casserole. She answered questions about her training and career goals and encouraged campers to pursue their vocational dreams. Brenna Huckaby, two-time Paralympic gold medalist, shared her experience as a cancer survivor who broke barriers to accomplish her goals. When she was younger, Brenna attended one of the MD Anderson Children's Cancer Hospital camps and special event ski trips, which inspired her to dream big.

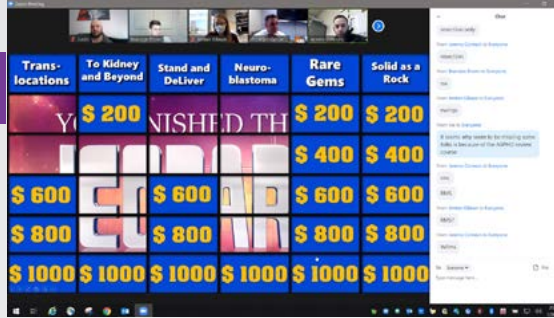
Online connections bring AYA patients together

The division's Adolescent and Young Adult (AYA) Oncology Program provided care to almost 900 patients across 1,500 visits last year. The program awarded \$46,400 in 31 scholarships to patients seeking higher education and helped more than 200 patients preserve their fertility options prior to treatment. MD Anderson Children's Cancer Hospital hosted the 11th Annual Texas Adolescent and Young Adult Conference as an entirely virtual experience for the first time, engaging over 440 attendees with expert speakers and patient panelists from around the world.

Despite the challenge of fostering connection in a socially distanced world, the AYA team successfully created a virtual infrastructure that provided many opportunities for patients to interact with each other and support personnel. In FY21, the program achieved more than 1,550 logins to 160 online activities ranging in nature from support groups, arts and crafts, music therapy sessions (supported by The Faris Foundation), cooking classes, book club meetups (with books donated by author and speaker Brené Brown), and educational sessions on survivorship guilt and advance care planning. Kendra Scott, the Austin-based jeweler and friend of MD Anderson Children's Cancer Hospital, also provided a special weblink for participants to select gems that were later returned to them as custom-made jewelry.



These Young Adult Advisory Council (YAAC) members had a message to share following a socially distanced MD Anderson Boot Walk to End Cancer® with members of their own family. YAAC is one of four councils that help MD Anderson Children's Cancer Hospital meet the unique needs of young cancer patients.



Solid Tumor Jeopardy proved to be a fun and productive way to educate faculty and fellows on a variety of clinical issues.



2021 fellowship graduates were (left to right): Usman Baig, M.B.B.S. (advanced), Sumit Gupta, M.D., Avis Harden, M.D., and Drishti Ragoonanan, M.B.B.S.

Preparing future generations of oncology leaders

The three-year Pediatric Hematology/Oncology Fellowship Program earned continued accreditation from the Accreditation Council for Graduate Medical Education (ACGME) in January 2021, and the division added a critical care rotation for trainees in the UTHealth Critical Care Medicine Fellowship.

As going virtual became the “new normal” in FY21, Priti Tewari, M.D., associate professor of Pediatrics – Patient Care and Fellowship Program director, worked with MD Anderson Information Systems staff and division leadership to make the formal education more flexible, innovative and effective. Pediatric faculty enjoyed the challenge of teaching and presenting clinical situations using additional visual and interactive techniques. One of the more popular online activities was “Solid Tumor Jeopardy,” introduced by Jonathan Gill, M.D., associate professor of Pediatrics – Patient Care and director of the Pediatric Clinical and Translational Research Program. Participants

were quizzed and supported each other on camera through patient scenarios involving translocations and issues with the kidneys, liver and other organ malignancies. “We are so proud of the creative and supportive learning environment our faculty developed to continue delivering high quality training,” Tewari says.

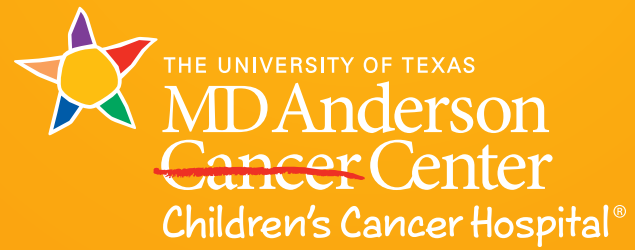
The division held a hybrid in-person/online ceremony honoring four fellows who graduated in June 2021. Accomplishments during their training included presenting to the MD Anderson Children’s Cancer Hospital Advisory Board about COVID-19 rates and preventive efforts, becoming a co-awardee of a foundation grant supporting the investigation of brain cancer treatment options and publishing papers in Neuro-Oncology and Frontiers in Oncology. The graduates started their fellowship journey prior to the pandemic and were also able to give in-person poster presentations, lead talks at annual meetings and facilitate critical care conferences focused on best practices for responding to complications that occur in patients undergoing transplantation and cellular therapies.

More than 70 doctors applied to join the July 2021 incoming class, and for the first time,

Pediatric chief fellows participated in the selection of applicants. Four candidates were ultimately admitted. Tewari said a benefit of online interviews is that it saves time and travel expenses for many of the applicants. “Of note, probably half of the candidates we interviewed had never been to Houston,” she recalled.

The division also has three one-year medical fellowship programs. Sajad Khazal, M.B.Ch.B., assistant professor of Pediatrics – Patient Care, directs the Pediatric Stem Cell Transplantation and Cellular Therapy Fellowship Program. Karen Moody, M.D., associate professor of Pediatrics – Patient Care, directs the Pediatric Hospice and Palliative Medicine Fellowship Program.

Please support pediatric research, patient programming and education efforts at MD Anderson Children’s Cancer Hospital.
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