

The mission of the [Division of Pediatric Pulmonology and Sleep Medicine](#) is to deliver outstanding and compassionate clinical care for pediatric patients with respiratory illness and become recognized regionally and nationally for clinical care and innovative scientific and qualitative research, all while remaining committed to the training of future pediatric health professionals.

Under the direction of the Chief of Pulmonology and Sleep Medicine, Andrew Gelfand, M.D., the division’s 13 physicians and other associated health care professionals comprise a team that works together to form a truly multidisciplinary program. Our overarching goal is to help develop programs in pulmonology and sleep medicine that are highly respected and help lead the nation in clinical care and research. We also strive to recruit and sustain an excellent and diverse division of faculty committed to the mission of the division. Achievement of these goals will be done through the efforts of our 11 full-time and two part-time members of the Division of Pulmonology and Sleep Medicine. Each are dedicated to furthering the field of pediatric pulmonology and help create niches of expertise within the specialty. As our division is somewhat small for the volume of patients that we see, one of our major focuses over the next few years will continue to be growth. We are excited that we added one new faculty member this past year and are actively recruiting more physicians to join us.



**Andrew Gelfand, M.D.**  
Associate Professor, Division Chief

The Division provides care to infants, children, and young adults with a wide spectrum of respiratory illnesses, including disorders of respiratory control, the chest wall, respiratory muscles, airway, and parenchyma. More specifically, we have programs to treat patients with asthma, high-risk asthma, cystic fibrosis (CF), technology-dependent patients who require chronic ventilation, neuromuscular disorders, bronchopulmonary dysplasia, primary ciliary dyskinesia, e-cigarette, or vaping, product associated lung injury (EVALI), hereditary hemorrhagic telangiectasia, and sleep disordered breathing. Additionally, we participate in multidisciplinary clinics to help in the management of patients with aerodigestive disorders, sickle cell disease, high-risk asthma, and patients with chronic mechanical ventilatory needs. Last year, we were excited about starting a long COVID pulmonary clinic as well as an interventional bronchoscopy program.

- Inpatients are treated at the Children’s Health locations of Children’s Medical Center Dallas and Our Children’s House.
- Pulmonary outpatients are treated at Children’s Health Specialty Center, both in Dallas and Cityville locations, and our location at Texas Health Resources/UT Southwestern Frisco has relocated to the Children’s Medical Center Plano campus.
- Chronically ventilated patients are seen at the Cityville location of Children’s Health for outpatient services.
- A large sleep program, with 24 beds divided between Dallas and Plano, also provides rooms for outpatient visits. Our Plano Sleep lab was relocated last year and with the expansion of beds, we are proud to have the largest pediatric sleep lab in the country.
- We participate in a variety of multidisciplinary clinics to help improve the care delivered to our patients. Some of these clinics include cystic fibrosis, high-risk asthma, sickle cell, neuromuscular, sleep, hereditary hemorrhagic telangiectasia, and chronically ventilated children.
- In April of 2021, we became an accredited center for patients with primary ciliary dyskinesia.
- In 2022, the Division of Pulmonology and Sleep Medicine was successful in helping to recruit a pediatric cardiologist to help start a pulmonary hypertension program. Although pulmonology is presently very supportive of this program, we are still actively recruiting a pediatric pulmonologist to be part of this new program.
- We are leading the charge to improve safe sleep practices for infants within the hospital system.
- We continue to work on creating management pathways for patients diagnosed with EVALI as well as for other at-risk patients causing lung injury through inhalation.

- Secondary to the pandemic, we have developed a robust telehealth program for our patients. We plan to continue using telehealth to improve access to care, especially for our patients with transportation difficulties and for those living greater than 50 miles away.
- Also, secondary to the pandemic, we started a post-COVID clinic for those patients with long-term respiratory effects of the SARS-COV-2 virus. This clinic will have a multidisciplinary approach, including physical therapy.
- We are excited about starting an interventional bronchoscopy program. We hope to further develop this program and to become a major teaching center to train other pediatric pulmonologists with these skills.
- Our full-time physical therapist in our clinic has helped start innovative therapies for many of our complex populations of patients, including CF and high-risk asthma.

The research endeavors within the Division reflect the varied interests and expertise of the faculty. This includes multicenter drug trials within the Cystic Fibrosis Foundation and Therapeutics Development Network investigating modulator therapies in infants and young children, as well as the effects of modulator therapies on sleep and upper airway pathology. Also, within sleep research, there is ongoing work on sudden infant death syndrome and sleep positioning. In addition, we have continued to leverage our expertise to study e-cigarette use in adolescents. With the development of a comprehensive high-risk asthma program, the Division has also been able to undertake more research on near-fatal asthma and engage in drug studies related to severe asthma. To promote better care for all of our patients, the Division as a whole has been engaged in quality improvement endeavors related to social determinants of health as well as promoting vaccine uptake in children.

Division faculty are committed to the education and training of medical students, residents, and fellows. The Pediatric Pulmonology Fellowship Program prepares pediatricians to be experts in pulmonary medicine through a combination of educational activities, clinical experience, competencies such as bronchoscopy and pulmonary function testing, and assessment methods.

*After forming an institution-wide safe sleep task force, under the leadership of Dr. Michelle Caraballo, Children's Medical Center achieved Cribs for Kids® gold-level hospital certification, a designation never before applied for or achieved by Children's Health. We are the first major children's hospital and only fifth hospital in all of Texas to achieve gold certification.*

## Faculty

The Division has 11 full-time and two part-time faculty members and four fellows, all with varied interests in clinical and translational research. Dr. Esra Caylan joined the division in 2022.

### **Esra Caylan, M.D.**

Assistant Professor



### **M.D.**

Cerrahpasa Medical Faculty and Hospital, Istanbul, Turkey, 2010

### **Postdoctoral Training**

Residency, Pediatrics

Metropolitan Hospital Center, New York, NY 2012-2014

Fellowship, Pediatric Pulmonology

Maria Fareri Children's Hospital at Westchester Medical Center, Valhalla, NY 2014 – 2017

### **Interests**

Interventional Bronchoscopy, Neuromuscular disease, Fellowship education

## Honors / Awards

### **Best Pediatric Specialists in Dallas, *D Magazine***

- Andrew Gelfand
- Tanya Martinez-Fernandez
- Yadira Rivera-Sanchez

### **Texas Super Doctors, *Texas Monthly***

- Andrew Gelfand
- Elisa Basora-Rovira (Rising Stars)

### **Andrew Gelfand**

- Best Doctors in Collin County – D Magazine
- America's Most Honored Doctors

### **Preeti Sharma**

- Outstanding Care Partnership Award – Cystic Fibrosis Foundation, North Texas Chapter

## Invited Lectures

### **Afolabi Folashade**

- Pediatric Grand Rounds UT Southwestern, Dallas, TX, May 2022
  - Moderator

### **Devika Rao**

- Pediatric Pulmonary Grand Rounds, Icahn School of Medicine at Mt. Sinai, New York, NY, January 2022
  - *“Clinical manifestations and Management of EVALI”*

### **Andrew Gelfand**

- Our Children’s House Schwartz Rounds, Dallas, TX, May 2022
  - *“Looking Backwards as We Move Forward”*

### **Michelle Caraballo**

- Plano Independent School District Head Start Program, Plano, TX, February 2022
  - *“The importance of sleep and how to achieve healthy sleep in toddlers.”*

### **Preeti Sharma**

- North American Cystic Fibrosis Conference, Philadelphia, PA, November 2022
  - *“Blurred Lines: The Complexity of Homelessness and Chronic Illness Management”*
- North American Cystic Fibrosis Conference (NACFC), Philadelphia, PA, November 2022
  - *“Separation Anxiety: Family Dilemma in CF Care Clinical Discipline”*

## **Conference Presentations**

### **American Thoracic Society International Conference, San Francisco, CA, May 2022**

#### **Roa D**

Scientific Symposium Chair, *“The Ongoing Epidemic of Adolescent Vaping: The latest Evidence on Prevention, Pulmonary Harms and Treatment.”*

#### **Folashade A**

Scientific Symposium Co-Chair, *“The Ongoing Epidemic of Adolescent Vaping: The latest Evidence on Prevention, Pulmonary Harms and Treatment.”*

Lee H, Weerakoon SM, Abdallah B, Messiah SE, **Rao DR**

Poster Presentation, *“The Association Between Vape Shop Density and E-cigarette, or Vaping, Product-Use Associated Lung Injury in Adolescents.”*

### **Other Conferences**

#### **Texas Public Health Association Annual Education Conference, Virtual, May 2022**

Lee H, Weerakoon SM, Abdallah B, Messiah SE, **Rao DR**

Poster Presentation, *“Relationship Between Neighborhood Characteristics and EVALI (e-cigarette, or vaping, product use-associated lung injury) among North Texas Adolescents: An Ecological Study.”*

Xie L, **Gelfand A**, Mathew MS, Atem F, Nimisha S, Delclos G, Messiah S

Oral Presentation, *“Adverse Drug Events Related to Common Asthma Medications in Hospitalized Children, United States 2000-2016: Incidence Trends, Risk Factors and Healthcare Outcomes.”*

## Media Appearances/Interviews

### Michelle Caraballo

- Interview for Health & Wellness Library on childrens.com, March 2022
  - *"Is melatonin safe for kids?"*
- Interview for verywellfamily.com, April 2022
  - *"When to Worry About Your Child's Snoring."*
- UTSW Pregnancy Blog, Your Pregnancy Matters, June 2022
  - *"What a new study tells us about SIDS and safe infant sleep practices."*
- KRLD radio interview, June 2022
  - *"Ask the expert: Melatonin use in children."*
- Interview for NBC5, July 2022
  - *"Adjusting Sleep Schedules for Back to School."*
- Interview for WBAP News Radio, November 4, 2022
  - *"Adjusting Sleep Schedules for Daylight Saving."*

### Kubra Melike Bozkanat

- Healio News Interview, October 2022
  - ["Effects on physical activity linger for children after severe COVID-19"](#)
- Children's Research Library,
  - ["Path to Recovery for Pediatric Long COVID Patients"](#)
- UTHealth Houston New, October 2022
  - ["Substantial proportion of ethnically diverse children from low-resource backgrounds report long-term COVID-19 complications"](#)
- The Washington Post,
  - ["Experience and innovation take pediatric care to the next level"](#)

### Devika Rao

- Quoted in interview with NBCDFW, January 2022
  - [New Report Gives Texas 'F' Grade for Tobacco Control Efforts – NBC 5 Dallas-Fort Worth \(nbcdfw.com\)](#)

### Preeti Sharma

- Dallas Morning News Interview, September 2022
  - *"Flu and COVID"*
- KRLD Radio, September 2022
  - *"Flu Season"*
- Interviewed by CBS 11 News Dallas, October 2022
  - *"Flu Season Approaching"*
- NBC5 DFW interview, October 2022
  - *"Flu season, Children and Vaccines"*
- Spectrum News Interview, October 2022
  - *"Approaching flu season"*
- CBS Evening News Interview, October 2022
  - *"RSV"*

## **Education and Training**

The Division of Pediatric Pulmonology and Sleep Medicine provides educational opportunities for medical students and pediatric residents in addition to our accredited fellowship program.

### **Medical Students**

A full curriculum based on the core competencies as published by the Council on Medical Student Education in Pediatrics is taught through bedside clinical supervision and daily rounds in addition to various didactic sessions and interactive case-based discussions facilitated by faculty in nearly all divisions in the Department of Pediatrics. The entire curriculum is reviewed on an ongoing basis through feedback from UT Southwestern Medical School faculty, national regulatory agencies, and students themselves. Students rotating through the core clerkship continue to outpace national averages on standardized assessments.

Medical students participate in outpatient specialty clinics staffed by members of the Division of Pediatric Pulmonology and Sleep Medicine faculty. During clinic sessions, medical students receive individualized, one-on-one teaching by the faculty. Third-year medical students participate in the inpatient pulmonary service. As part of their rotation and under the supervision of the Division faculty, they are assigned to obtain the history, complete the physical exam, and present their patients during daily rounds.

### **Residents**

The evaluation of children with respiratory problems is an integral component of the practice of pediatric medicine. Respiratory symptoms and problems are the most common reason for childhood physician encounters and are the number one cause of school absenteeism and hospital admission. Hence, it is essential that the pediatric resident becomes familiar with the recognition, diagnosis, and care of respiratory diseases. The overall goal of the Pediatric Pulmonology and Sleep Medicine rotation is to provide residents with intensive exposure to a broad spectrum of pulmonary disorders in order to highlight principles of diagnosis and management and the respective roles played by the pediatrician and pulmonary subspecialist, as well as other disciplines, in the management of often very complex patients.

The Pediatric Inpatient Pulmonary rotation has been designed for second- and third-year pediatric residents. Goals are aimed at gaining experience in the daily management of children with known, as well as presumptive, pulmonary disorders. Expectations include the demonstration of medical knowledge, comprehension of pathophysiology, development of differential diagnoses, and development of increased independence in the formulation of management plans. In addition, residents should maintain an overall awareness of the high acuity of the patients on the inpatient service, which in turn helps improve critical thinking.

The Pediatric Pulmonary Outpatient rotation is designed for first-year residents. It exposes residents to different areas within pediatric pulmonary medicine, including, but not limited to, general pulmonary medicine and sleep medicine, multidisciplinary clinics such as CF, aerodigestive, and neuromuscular disease clinics, as well as pulmonary function testing and patients being evaluated as part of the consult service. The goal of this rotation is for first-year residents to gain understanding in the multiple areas within pulmonary medicine and medical knowledge in common diagnoses seen in outpatient pulmonary medicine.

The Pediatric pulmonary elective is designed for second- and third-year residents to gain exposure to specific areas within pulmonary medicine. It is tailored to the specific interests and future career goals of the participating resident. This rotation can include a combination of outpatient and consult service exposure and allows for the resident to have an active participation in the development of the rotation.

Yadira Rivera-Sanchez, M.D., directs the Pediatric Pulmonology and Sleep Medicine Resident Education Program.

### **Fellows**

Under the direction of Dr. Tanya Martinez as Pediatric Pulmonology Fellowship Director and Dr. Preeti Sharma as the Associate Director, the mission of our Accreditation Council for Graduate Medical Education- accredited Pulmonology Fellowship training is to prepare future generations of postgraduate pediatricians to

become expert clinicians and join a diverse workforce in our field. By providing training that combines high-quality education and research, we aim to produce culturally competent, compassionate, and clinically skilled lifelong learners. It is our goal that training in our large academic and research institution provides comprehensive clinical exposure and education in pediatric pulmonology. Contact with a diverse patient population and thus broad pathology in pediatric pulmonary medicine at Children's Health leads to the development of strong clinical acumen. UT Southwestern Medical Center offers opportunities in clinical, basic, and/or translational research and medical education. Consequently, our graduates are prepared to join national or international academic, public, or private pediatric pulmonology practices to further develop their individual interests.

#### Program Aims:

1. Provide a high-quality three-year curriculum that will prepare postgraduate pediatricians with the clinical skills to diagnose and manage a range of common and rare pediatric pulmonary diseases.
2. Train compassionate, clinically skilled, culturally competent, and lifelong learners through exposure to a dynamic, diverse, and growing multicultural population.
3. Educate fellows to independently practice and become excellent leaders of clinical care teams that will provide comprehensive, safe, high-quality, family-centered patient care in pediatric pulmonology.
4. Prepare trainees for academic careers by delivering fulfilling experiences and education on research development, quality improvement, and patient safety.
5. Develop individualized learning plans with fellows that drive educational opportunities to stimulate, prepare, and help achieve career goals.
6. Promote strategies that lead to wellness and resilience within the fellowship program.
7. Enable trainees to qualify and successfully complete requirements for board certification in pediatric pulmonology.

The mission of our accredited Pulmonology Fellowship Training Program is to prepare postgraduate pediatricians to be experts in pulmonary medicine. Training is through a combination of educational activities, competencies, and assessment methods, including patient care, guided reading, and discussion with regards to organization, business planning, and management of the pediatric pulmonary service and research methodology.

## Clinical Research

The Division's research efforts focus on areas of clinical expertise within the faculty. The division is primarily clinically oriented, but investigator-initiated research from within our division is a long-term goal. However, mentioned below are some of the grants and projects in which members of the division are currently participating.

- Dr. [Preeti Sharma](#)'s research continues to incorporate clinical drug trials through the Cystic Fibrosis Foundation and the Therapeutics Development Network, studying cystic fibrosis transmembrane conductance regulator (CFTR) modulator therapies in infants and young children, infection control and prevention, as well as the role of highly effective modulator therapy in ongoing CF care. With this, she has also expanded her focus to adherence research and has been closely working with the Success with Therapies Research Consortium of the CF Foundation. Dr. Sharma has been investigating more patient- and family-centered care models and how that affects outcomes and adherence, such as adherence coaching in adolescents and young adults with CF. In addition to her drug trials and qualitative research endeavors, she has continued her focus on quality improvement. Dr. Sharma has continued the focus on access to care by continuing to understand the impact of social determinants of health on chronic illness and has worked to understand this in the context of the COVID-19 pandemic. Additionally, she has led an effort to improve sweat chloride testing and assure that patients with advanced CF lung disease are carefully monitored within the guidelines of the CF Foundation. In an effort to understand substance abuse in teens, Dr. Sharma has initiated substance abuse screening in the CF clinic to understand the patterns of

usage in teens with CF. She has continued to innovate in quality improvement (QI) endeavors based on improving clinical care and outcomes. CF research endeavors have continued to increase in number, and Dr. Sharma and her team members have received national recognition from the CF Foundation and other research collaborative groups that they have continued to participate in. Not only has the CF center participated in numerous research and QI studies, but they have also been the lead sites for multicenter QI endeavors that have influenced care across the Cystic Fibrosis Foundation Care Network System.

In addition to her research work in CF, Dr. Sharma has led the pulmonary division in QI endeavors to improve care for children with other pulmonary illnesses. Through her work with physical therapy, she was able to spearhead work aimed at improving referrals for children with severe lung disease to physical therapy to improve lung function and quality of life. She has initiated the next divisional QI endeavor aimed at improving the transition of care to adult medicine for teenage asthmatics.

- Dr. [Devika Rao](#), spearheaded research on the pulmonary harms of e-cigarettes in 2019. She published her findings on her EVALI cohort in the form of a case series in 2020 in Pediatrics and has since continued to study EVALI. Dr. Rao has submitted a follow-up manuscript to Pediatrics on the clinical manifestations of EVALI before and after the COVID-19 pandemic and is mentoring a medical student, Harin Lee, on a neighborhood analysis of vape shop density and EVALI cases in the Dallas–Fort Worth area. Future planned studies include performing an analysis on health disparities with respect to EVALI in the Hispanic versus non-Hispanic population; performing a cross-sectional study on vaping habits in adolescent e-cigarette users during the COVID-19 pandemic (CoVAPE study, Institutional Review Boards (IRB) approval obtained); and working on a cross-sectional cohort study on pulmonary function and vaping habits in three groups of adolescents: former e-cigarette users, current e-cigarette users, and never users (IRB approval pending and funding provided by the Children’s Foundation in the amount of \$80,000). Dr. Rao is additionally working on submitting a K01 grant for the June 2022 cycle on the basis of a school-based vaping screening study in the Dallas Independent School District. She is mentored by Sarah Messiah, Ph.D., M.P.H., the Director of the Center for Pediatric Population Health at UT Southwestern.
- Sleep positioning and other aspects of sudden infant death syndrome risk prevention are the focus of Dr. [Michelle Caraballo](#)’s research. She continues to work on a project to promote safe sleep in the hospital setting.
- Dr. [Kamal Naqvi](#)’s investigative efforts involve pediatric sleep disorders, including narcolepsy. The sleep program, under Dr. Naqvi’s direction, also participates in numerous multicenter research trials. Dr. Naqvi is also participating in a few IRB-approved studies. One is involved in improving adolescent suicidal ideation through a standardized brief group sleep intervention. In addition to this, he is working on a study for healthy sleep for children with Down Syndrome. He is also participating in a pilot study to evaluate safety and efficacy of the hypoglossal nerve stimulator in adolescents with Down syndrome and obstructive sleep apnea. Lastly, Dr. Naqvi is doing an in-depth analysis on sleep studies that have been done at Children’s Health.
- Dr. [Aarti Shakkottai](#)’s research interests center around the impact of highly effective modulator therapy on sleep and upper airway pathology among patients with CF. Prior to her move to UT Southwestern, Dr. Shakkottai looked at risk factors for obstructive sleep apnea (OSA) in patients with CF and found upper airway pathology, including tonsillar hypertrophy and chronic sinusitis, to be an important risk factor for OSA in children with CF. Her current project builds on this work.
- Dr. [Elisa Basora](#) has research interests in pediatric sleep medicine. She is presently working on two projects. Dr. Basora is studying the correlation between age and initial findings of sleep breathing disorders in children with achondroplasia. Additionally, she is investigating the incidence of sleep disordered breathing and patients with Chiari malformation.
- The optimization of care for children with asthma is the focus of the scholarly pursuits of Dr. [Yadira Rivera-Sanchez](#) and Dr. [Tanya Martinez](#).



- Drs. [Andrew Gelfand](#), [Tanya Martinez](#), and [Yadira Rivera-Sanchez](#) are getting involved in an asthma pharmaceutical trial to help achieve better outcomes for outpatients.
- Dr. [Michelle Caraballo](#), with the help of Dr. [Anna Wani](#) from the Department of Family Medicine, is working on an early termination sleep project. They realize that many children with possible OSA remain unidentified due to low referral rates. Of the patients who successfully get referred, scheduled, and show up for their polysomnography (PSG), a proportion fail to complete the study, which wastes resources, contributes to long wait times, and may lead to under-diagnosis or treatment of sleep disordered breathing. Their focus is to explore what factors can lead to early PSG termination in hopes of proactively identifying the at-risk groups and implementing strategies in the future to help bridge the gap between scheduled and completed studies.
- Drs. [Kubra Melike Bozkanat](#) and [Aarti Shakkottai](#) are tracking and studying patients with significant respiratory compromise from COVID-19. They are tracking therapeutic responses to therapies and physical therapy with this cohort of patients.

## **Clinical Activities**

The Pediatric Pulmonology and Sleep Medicine Division offers both inpatient and outpatient consultation for a wide variety of respiratory and sleep disorders in children.

### **Inpatient Services**

The inpatient population consists primarily of patients with CF, chronic respiratory failure on mechanical ventilation, and patients with neuromuscular diseases hospitalized for an acute respiratory process. If we have bed availability, we also like to manage patients with high-risk asthma as well as less common pulmonary issues, such as primary ciliary dyskinesia, hereditary hemorrhagic telangiectasia, and idiopathic pulmonary hemosiderosis, as well as other interstitial lung diseases. We do frequently admit patients with tenuous airways or who need non-invasive mechanical ventilation when intensive care unit acuity is no longer needed. We also provide a consultation service to help with the needs of the rest of the hospital. This service typically has 25–40 patients, and we help advise respiratory management to patients throughout the hospital, including the Pediatric Intensive Care Unit, the Cardiovascular Intensive Care Unit, and the Neonatal Intensive Care Unit, as well as to general and other specialty services. We also provide bronchoscopy services when indicated. Dr. Andrew Gelfand oversees the inpatient activities of the Division. There is an attending pulmonologist assigned to the Pediatric Pulmonology and Sleep Medicine Service as well as the consultation service at all times.

### **Outpatient Services**

Outpatient activities are comprehensive and primarily centered on a busy general [pulmonology practice](#). Physicians combine their efforts with a group of talented and dedicated nurse practitioners who conduct clinical consultations on selected patients. Additionally, the pulmonary division directs a few programs that also deserve mentioning.

- [Tanya Martinez Fernandez](#), M.D., has led the development and organization of the outpatient clinics.
- The Pediatric Cystic Fibrosis program, one of the largest in the country with over 300 pediatric patients, is co-directed by Dr. [Preeti Sharma](#) from Pediatric Pulmonology and Sleep Medicine and Dr. [Meghana Sathe](#) from Pediatric Gastroenterology. The center provides a comprehensive team approach to this complex and chronic disease. It is actively involved in many national multicenter trials, including clinical trials of new and innovative treatments. The CF care center continues to grow and provide outstanding clinical care and cutting-edge research to the children of North Texas and beyond. We are also founding members of the CF Learning Network and participate in the national Success with Therapies Research Consortium.

- Pediatric Sleep Program – under the direction of [Kamal Naqvi](#), M.D., our sleep center provides comprehensive care for all pediatric sleep disorders, including obstructive and central sleep apnea, narcolepsy, hypersomnia, insomnia, circadian rhythm disorders, and behavioral sleep disorders. A licensed sleep psychologist offers cognitive behavioral therapy for insomnia. Two positive airway pressure (PAP) specialists provide mask fitting sessions and expertise for other equipment-related issues. Our 24-bed Sleep lab (divided between Dallas and Plano locations) performs over 4,000 outpatient sleep studies per year and inpatient sleep studies as needed, including diagnostic sleep studies, PAP titration studies, multiple sleep latency tests, and maintenance of wakefulness tests. The sleep program also participates in numerous multicenter research trials.
- Dr. [Princy Ghera](#), along with Dr. [Esra Caylan](#), who recently joined the team, conduct specialized clinics on neuromuscular and chest wall-related respiratory diseases. [Elisa Basora](#), M.D., and [Michelle Caraballo](#), M.D., continue to participate in a multidisciplinary clinic for young patients with Duchenne muscular dystrophy. Also, as Dr. Ghera is Internal Medicine and Pediatrics trained, she has an interest in helping us develop a transition to adult medicine clinic for our patients with neuromuscular disorders. Lastly, Dr. [Peter Lockett](#) continues to help with the management of some of our adolescent patients with neuromuscular disease.
- Dr. [Yadira-Rivera Sanchez](#) is the Medical Director of our accredited Primary Ciliary Dyskinesia (PCD) program. This program received accreditation by the PCD Foundation in 2021 and we are the only accredited pediatric center in the North Texas region.
- In 2015, Dr. [Devika Rao](#) founded a Pulmonary-Sickle Cell Interdisciplinary Clinic to address the pulmonary needs of children with sickle cell anemia. This clinic takes place at the Pauline Allen Gill Center for Cancer and Blood Disorders once each month.
- [Devika Rao](#), M.D., serves as Director of the Pulmonary Function Lab. The Pulmonary Function Lab has more than 1,000 visits per month. We have a fully functioning lab with the ability to do spirometry, body plethysmography, FeNO, methacholine and exercise challenges, lung clearance index, and other measures of pulmonary function.
- Drs. [Kubra Melike Bozkanat](#) and [Princy Ghera](#) participate in Aerodigestive Multidisciplinary Clinic, which is conducted with the pediatric otolaryngology and gastroenterology services.
- Drs. [Yadira Rivera-Sanchez](#) and [Tanya Martinez-Fernandez](#) co-direct the High-Risk Asthma Clinic. Dr. [Folashade Afolabi](#) contributes to this clinic as well. This multidisciplinary clinic is improving the care for some of our most serious patients with life threatening asthma. We recently expanded this clinic by incorporating allergy, nutrition, social work, and physical therapy and now function as a true multidisciplinary clinic for this fragile population.
- [Andrew Gelfand](#), M.D., directs the Ventilator Clinic. This is a multidisciplinary clinic involving ear, nose, and throat, psychiatry, respiratory therapy, nursing, social work, radiology, nutrition, and case management. Here we follow over 200 patients with chronic mechanical ventilator needs from a variety of causes, such as bronchopulmonary dysplasia, neuromuscular weakness, congenital heart disease, high spinal cord injury, neurologically impaired children with poor control of breathing, as well as other causes of respiratory insufficiency. Dr. [Folashade Afolabi](#) formally joined the chronic ventilation team this past year. Drs. [Steven Copenhaver](#) and [Pravin Sah](#), who are associated with [Children's Health](#), also help with the management of these patients.
- Dr. [Preeti Sharma](#) directs the Hereditary Hemorrhagic Telangiectasia (HHT) Clinic. She has partnered with the adult HHT Center, Interventional Radiology, Hematology, and Gastroenterology to provide ease of care and increased benefit to these patients.
- Drs. [Kubra Melike Bozkanat](#) and [Aarti Shakkottai](#) started a Post -COVID Respiratory Clinic with the help of social work, psychology, and physical therapy this year to help patients affected by the SARS-COV-2 virus.

## Clinical Services

### Children's Health<sup>SM</sup>

Children's Medical Center was ranked 21<sup>st</sup> nationally in Pediatrics Pulmonology by *U.S. News & World Report* in 2022.

- [Asthma Programs](#)
- [Cystic Fibrosis \(CF\)](#)
- [Pulmonary Function Testing \(PFT\)](#)
- [Respiratory Conditions](#)

### Patient Care Guidelines

Division members have been actively engaged in the establishment of patient care guidelines, including for the evaluation and implementation of non-invasive ventilation in infants at home, for the care of asthma patients, and for tracheostomy care.

### Patient Statistics

Pulmonology and Sleep Medicine Patient Stats by Locations by Type by Clinic. Also Includes Patient Procedures by Locations.

<b>Pulmonary at Children's Medical Center Dallas</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Inpatient admissions	478	402	341		390
Inpatient consultations	1,181	1,779	1,205	554	681
<b>New Outpatient Visits</b>	<b>3,029</b>	<b>3,108</b>	<b>2,699</b>	<b>2,505</b>	<b>2,923</b>
Pulmonary Clinic	1,061	1,249	1,104	1,244	1,355
CF Clinic	76	64	35	44	75
Sleep Clinic	1,892	1,795	1,560	1,217	1,493
<b>Outpatient Follow-Up</b>	<b>9,804</b>	<b>11,224</b>	<b>9,481</b>	<b>10,182</b>	<b>11,271</b>
Pulmonary Clinic	5,571	6,096	5,223	6,391	7,336
CF Clinic	1,824	2,072	1,667	1,952	1,969
Sleep Clinic	2,409	3,056	2,591	1,839	1,966
<b>Telemedicine Visits</b>			<b>5,793</b>	<b>3,334</b>	<b>2,262</b>
Pulmonary Clinic			2,801	1,645	1,262
CF Clinic			436	198	93
Sleep Clinic			2,556	1,491	907

<b>Pulmonary at Children’s Medical Center Frisco/Plano</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
<b>New Outpatient Visits</b>	513	565	217	125	<b>210</b>
Pulmonary Clinic	315	303	33	0	133
CF Clinic	0	9	0	0	0
Sleep Clinic	198	253	184	125	77
<b>Outpatient Follow-Up</b>	974	931	244	251	<b>530</b>
Pulmonary Clinic	559	562	51	0	485
CF Clinic	163	135	4	0	0
Sleep Clinic	252	234	189	251	45

<b>Procedures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
Sleep Studies – Dallas	2,351	2,757	1,512	2,362	2,498
Sleep Studies – Plano	1,882	1,995	1,051	1,481	1,674
Pulmonary function testing Laboratory procedures	12,379	12,808	3,124	5,365	5,609
Bronchoscopies	155	124	62	135	177

\*Updated 2018, 2019 outpatient totals to include CF Clinics & Sleep Clinic

## Current Grant Support

### Tanya Martinez-Fernandez

**Grantor:** NIH-National Heart, Lung and Blood Inst  
**Title of Project:** Respiratory Effects of Obesity in Children  
**Role:** Co-principal Investigator  
**Dates:** 07/2017 – 06/2023

### Syed Naqvi

**Grantor:** NIH-National Heart, Lung and Blood Inst  
**Title of Project:** Treatment of Obstructive Sleep Apnea with Personalized Surgery in Children with Down Syndrome (TOPS-DS)  
**Role:** Co-principal Investigator  
**Dates:** 07/2017 – 06/2023

**Grantor:** Children's Hospital of Philadelphia/ NIH-National Heart, Lung and Blood Inst  
**Title of Project:** Impact of Mild Sleep-Disordered Breathing on Children’s Health - Yr5  
**Role:** Co-Investigator  
**Date:** 07/2019 – 06/2022

**Grantor:** Oregon Health & Science University/ NIH-National Heart, Lung and Blood Inst  
**Title of Project:** Effects of Hypoglossal Nerve Stimulation on Cognition and Language in Down Syndrome and Obstructive Sleep Apnea  
**Role:** Co-Investigator  
**Date:** 09/2022 – 08/2023

**Grantor:** Cincinnati Children's Hospital Medical Center  
**Title of Project:** A Multicenter Retrospective with Prospective Follow-Up Study of Early Onset Childhood Narcolepsy: Recent cases and Post infection  
**Role:** Co-principal Investigator  
**Dates:** 11/2017 – 11/2022

**Grantor:** NIH-National Heart, Lung and Blood Inst  
**Title of Project:** Respiratory Effects of Obesity in Children  
**Role:** Co-Investigator  
**Dates:** 11/2017 – 11/2022

#### **Devika Rao**

**Grantor:** Children's Health, Service Package Grant.  
**Title of Project:** The six-minute walk test in children with sickle cell disease: a cross-sectional study  
**Role:** Principal Investigator  
**Dates:** 3/2020 – Present

**Grantor:** Children's Health Foundation.  
**Title of Project:** Nicotine and Other substances Vaped by Adolescents and Pulmonary Effects (NoVAPE): A Pilot Study on Lung Function Outcomes in Adolescent E-cigarette Users  
**Role:** Principal Investigator  
**Dates:** 6/2021 – Present

#### **Preeti Sharma**

**Grantor:** Cystic Fibrosis Foundation  
**Title of Project:** TX-34/34 - Care Center Award - Year 8  
**Role:** Co-principal Investigator  
**Dates:** 01/2020 – 06/2023

**Grantor:** Cystic Fibrosis Foundation  
**Title of Project:** Success with Therapeutics Research Consortium Application  
**Role:** Co-Principal Investigator  
**Dates:** 08/2021 – 07/2023

**Grantor:** University of North Carolina at Chapel Hill/Cystic Fibrosis Foundation  
**Title of Project:** UNC-New PA Infection Study  
**Role:** Principal Investigator  
**Dates:** 09/2019 – 08/2022

**Grantor:** Cystic Fibrosis Foundation  
**Title of Project:** Therapeutic Drug Development Network  
**Role:** Co-principal Investigator  
**Dates:** 04/2020 – 03/2022

**Grantor:** Cystic Fibrosis Foundation / Cincinnati Children's Hospital

**Title of Project:** CFC3N – Pilot Learning Network for Enhancing Quality Care  
**Role:** Co-principal Investigator  
**Dates:** 01/2022 – 12/2022

**Grantor:** Cystic Fibrosis Foundation  
**Title of Project:** Cystic Fibrosis Therapeutics Development Center  
**Role:** Co-principal Investigator  
**Dates:** 01/2014 – 03/2023

**Grantor:** University of NC at Chapel Hill  
**Title of Project:** Early MRSA therapy in CF (streamlined eradication with repeat cycle) (STaph Aureus Resistance-Treat Early and Repeat(STAR-TER)  
**Role:** Principal Investigator  
**Dates:** 01/2019 – 12/2024

**Grantor:** Vertex Pharmaceuticals Inc  
**Title of Project:** A Phase 3, Open-label, and Rollover Study to Evaluate the Long-term Safety and Tolerability of Lumacaftor/Ivacaftor Treatment in Subjects with Cystic Fibrosis Who Are Homozygous for F508del and 12 to <24 Months of Age at Treatment Initiation  
**Role:** Principal Investigator  
**Dates:** 11/2018 – 11/2023

**Grantor:** Cystic Fibrosis Foundation  
**Title of Project:** Feasibility, acceptability, and pilot trial of a tele-coaching intervention to improve treatment adherence in cystic fibrosis  
**Role:** Principal Investigator  
**Dates:** 1/2021-1/2023

**Grantor:** CFF-TDN  
**Title of Project:** A master protocol to test the impact of discontinuing chronic therapies in people with cystic fibrosis on highly effective CFTR modulator therapy (SIMPLIFY)  
**Role:** Principal Investigator  
**Dates:** 1/2010 – 11/2022

## **Peer-Reviewed Publications**

1. Gazor A, Brown WD, **Naqvi SK**, Kennard B, Stewart S. [Persistent suicidal ideation in a large intensive outpatient adolescent population sample: A preliminary report on the role of sleep disturbance.](#) *Bull Menninger Clin.* 2022 Spring;86(2):113-123. PMID:35647777
2. Kissel AM, Maddox K, Francis JKR, Diaz MI, Sanghavi R, **Rao D**, Menzies C, Lehmann CU. [Effects of the electronic health record on job satisfaction of academic pediatric faculty.](#) *Int J Med Inform.* 2022 Dec;168():104881. PMID:36208533
3. **Shakkottai A**, Irani S, Nasr SZ, O'Brien LM, Chervin RD. [Risk factors for obstructive sleep apnea in cystic fibrosis.](#) *Pediatr Pulmonol.* 2022 Apr;57(4):926-934. PMID:34967157
4. Simakajornboon N, Mignot E, Maski K, Owens J, Rosen C, Ibrahim S, Hassan F, Chervin RD, Perry G, Brooks L, Kheirandish-Gozal L, Gozal D, Mason T, Robinson A, Malow B, **Naqvi K**, Chen ML, Jambhekar S, Halbower A, Graw-Panzer K, Dayyat E, Lew J, Melendres C, Kotagal S, Jain S, Super E, Dye T, Hossain

MM, Tadesse D. [Increased incidence of pediatric narcolepsy following the 2009 H1N1 pandemic: a report from the pediatric working group of the sleep research network.](#) *Sleep*. 2022 Sep 8;45(9):. PMID:35695235

5. Wilhite DP, Bhammar DM, **Martinez-Fernandez T**, Babb TG. [Mechanical effects of obesity on central and peripheral airway resistance in nonasthmatic early pubescent children.](#) *Pediatr Pulmonol*. 2022 Dec;57(12):2937-2945. PMID:35949183
6. Xie L, **Gelfand A**, Murphy CC, Mathew MS, Atem F, Delclos GL, Messiah S. [Prevalence of polypharmacy and associated adverse outcomes and risk factors among children with asthma in the USA: a cross-sectional study.](#) *BMJ Open*. 2022 Oct 13;12(10):e064708. PMID:36229143
7. Xie L, **Gelfand A**, Mathew MS, Atem FD, Srikanth N, Delclos GL, Messiah SE. [Adverse Drug Events Related to Common Asthma Medications in US Hospitalized Children, 2000-2016.](#) *Drugs Real World Outcomes*. 2022 Dec;9(4):667-679. PMID:35676469
8. Xie L, Atem F, **Gelfand A**, Delclos G, Messiah SE. [Association between asthma and sugar-sweetened beverage consumption in the United States pediatric population.](#) *J Asthma*. 2022 May;59(5):926-933. PMID:33625285
9. Yu PK, Radcliffe J, Gerry Taylor H, Amin RS, Baldassari CM, Boswick T, Chervin RD, Elden LM, Furth SL, Garetz SL, George A, Ishman SL, Kirkham EM, Liu C, Mitchell RB, Kamal **Naqvi S**, Rosen CL, Ross KR, Shah JR, Tapia IE, Young LR, Zopf DA, Wang R, Redline S. [Neurobehavioral morbidity of pediatric mild sleep-disordered breathing and obstructive sleep apnea.](#) *Sleep*. 2022 May 12;45(5):. PMID:35554583