DIVISION OF PULMONARY AND SLEEP MEDICINE

The Division of Pulmonary and Sleep Medicine at Children’s Mercy Kansas City has undergone tremendous growth and development over the past five years. Under the leadership of Christopher Oermann, MD, the division has added seven physicians to its faculty. This growth has made it possible to continue caring for the growing population of pediatric patients. The team treats respiratory and sleep disorders, both acute and chronic. For those with pulmonary issues, Children’s Mercy offers a comprehensive pediatric pulmonary function testing laboratory.

Children’s Mercy addresses some of the most complex pediatric pulmonary and sleep issues:

- Cystic fibrosis
- Life-threatening asthma
- Pulmonary hypertension
- Pulmonary complications of sickle cell disease
- Pediatric sleep disorders
- Pulmonary complications of neuromuscular disease
- Pediatric home ventilation
- Interstitial and diffuse lung disease of childhood
- Primary ciliary dyskinesia

TOP-RANKED PROGRAM

- U.S. News & World Report ranked #34 for pediatric pulmonology
- Cystic Fibrosis Care Center accredited by the Cystic Fibrosis Foundation (CFF)
- The only pediatric sleep laboratory in the region accredited by the American Academy of Sleep Medicine
- ACGME-accredited fellowship training programs in pediatric pulmonology and pediatric sleep medicine

IMPROVING CARE FOR PATIENTS WITH PULMONARY AND SLEEP DISORDERS

In order to treat patients in a variety of locations, the Sleep Medicine faculty provides services at all four Children’s Mercy campuses, as well as 12 telemedicine clinics each week.

2019 BY THE NUMBERS

<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
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<tbody>
<tr>
<td>Sleep Studies</td>
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<tr>
<td>Pulmonary Visits</td>
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<td>Sleep Medicine Visits</td>
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<td>Inpatient Pulmonary Visits</td>
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<td>Unique Inpatient Consults</td>
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SEEKING IMPROVED TREATMENTS THROUGH RESEARCH

Pulmonary research efforts are leading the way in seeking new, more effective treatments for patients. Children’s Mercy is a member of several research networks, including the NIH-funded IDeA States Pediatric Clinical Trials Network. It ranks fifth out of 89 centers as overall highest enrolling center in the CFF Therapeutics Development Network. Twenty-four percent of its cystic fibrosis patients participate in clinical trials. The pulmonary team also collaborates on studies with the Children’s Interstitial and Diffuse Lung Disease Research Network and the Primary Ciliary Dyskinesia Foundation.

DEVELOPING DEEPER EXPERTISE IN SLEEP DISORDERS

In addition, Children’s Mercy is involved in several lines of research to better understand the causes of sleep problems in children and to develop new treatments. The team also educates other pediatric health care providers and community members on what is already known about sleep and its disorders via several educational initiatives:

- Hosted a national pediatric pulmonary and sleep case conference through the American Thoracic Society.
- Initiated a pediatric-focused sleep medicine fellowship. More than 60% of the fellowship is spent in a pediatric environment.
- Hosted an education day for patients with narcolepsy and their family members.
- Developed a “sleep & dreams” college course to educate students on sleep health, including the biology of sleep and concepts like social jetlag.
- Facilitates a sleep master class that educates pediatricians on common sleep questions from families.

BREADTH AND DEPTH OF SPECIALIZED PROGRAMS

The Division of Pulmonary and Sleep Medicine provides care for a range of respiratory and sleep conditions.

- The Pediatric Home Ventilator Program provides ventilator management and pulmonary care for infants and children with a broad range of respiratory diseases. The Infant Tracheostomy and Home Ventilator Clinic focuses on infants with chronic lung disease due to prematurity.
- The Children’s Mercy Cystic Fibrosis Center was one of the first accredited by the National Cystic Fibrosis Foundation for clinical care, education and research. Now, the center provides care for approximately 250 children per year. The program works closely with the Cystic Fibrosis Therapeutics Development Network, which brings together experts from across the country to evaluate the safety and effectiveness of new cystic fibrosis therapies through clinical studies. In the 2018 Cystic Fibrosis Patient and Family Experience of Care (PFEC) survey, the cystic fibrosis program at Children’s Mercy received 100% top box score for all integRATE™ questions.
- The Pulmonary Hypertension program allows pulmonology specialists to collaborate with Children’s Mercy cardiologists to diagnose and treat increased pressure in the blood vessels between a patient’s heart and lungs. The PH clinic allows families to see two specialists at once, with a nurse practitioner and coordinator to manage the complex needs of PH patients, from extensive medication pre-approvals to ordering in-home equipment.
- Children’s Mercy has one of the largest pediatric sickle cell programs in the country. This multidisciplinary clinic helps children and adolescents with sickle cell disease who require specialized pulmonary care.

2019 PUBLICATIONS AND PRESENTATIONS

18 RESEARCH PUBLICATIONS
1 TEXTBOOKS OR CHAPTERS
10 NATIONAL PRESENTATIONS
The Sleep Center at Children’s Mercy specializes in coordination of respiratory support equipment and other services that are vital to the care of children who have a wide variety of nonrespiratory sleep-related issues. With its focus on pediatric patients, the Sleep Center is able to care for the highest acuity, complex patients.

The Advanced Asthma Interdisciplinary Respiratory (AAIR) clinic is a multidisciplinary clinic focusing on children with severe refractory asthma. It is staffed by severe asthma specialists from the Allergy, Pulmonology, Environmental Health Services, Social Work, Pharmacy and Respiratory Therapy departments that integrate their care to treat the whole child.

The Children’s Mercy JAWS Clinic provides a single point of contact for patients with jaw deformities that often require the expertise of specialty providers from several fields. “JAWS” stands for jaw, airway and sleep, and the clinic team treats a variety of conditions, including Pierre Robin sequence, Stickler syndrome, micrognathia and Treacher Collins syndrome.

Children with 22q11.2 deletion syndrome and 22q11.2 duplication have access to a team of expert clinicians, ongoing support, medical care and information at The Super Q Express Clinic at Children’s Mercy. The Super Q Express Team provides comprehensive individualized diagnostic and management services in cardiology, ENT/cleft palate, endocrinology, sleep, gastroenterology, genetics, immunology and speech.

CHILDREN’S MERCY UNDERTAKES QUALITY IMPROVEMENT INITIATIVE

Several years ago, the team at Children’s Mercy participated in a quality improvement (QI) training program offered by the CFF. This led to the implementation of specific QI projects and a culture of continuous quality improvement for all allied health care professionals. Results of many of these projects have been presented at the North American Cystic Fibrosis Conference and other local, regional and national conferences.

In 2016, 49% of patients met the CFF guidelines for ambulatory care. A QI initiative was developed to address the issue and improve care for patients. A survey of patients and families identified these barriers to getting appropriate care:

- Distance to care center
- Inconsistent access to transportation
- Financial stressors
- Lack of knowledge regarding the importance of quarterly visits

CHILDREN’S MERCY RESEARCH INSTITUTE

The Children’s Mercy Research Institute (CMRI) at Children’s Mercy Kansas City is an integrated research environment where no boundaries exist between science and medicine. Here, physicians, scientists, academic colleagues and philanthropic partners are collaborating to change the future for children. CMRI areas of emphasis provide the supportive structure for all research conducted at Children’s Mercy. Research may fall under one or more of these areas and include Genomics, Precision Therapeutics, Population Health and Health Care Innovation. To enhance its research endeavors, a new building, future home to the CMRI, is under construction. The institute has been carefully designed so research and clinical care work as cross-functional teams, aligned together, to find answers to pediatric medicine’s most challenging questions.
QUALITY IMPROVEMENT INITIATIVE  
Continued from page 3

Armed with this insight, Children’s Mercy developed a series of interventions:

- Patient and staff education
- Changes to clinic flow to reduce total time spent in clinic
- Changes to scheduling procedures
- Use of an internal database to monitor quarterly visits for each patient

Data from the CFF Patient Registry indicated improvement to 57% compliance in 2017. Preliminary internal data suggest a compliance rate of approximately 80% in 2018.

CHILDREN’S MERCY AS A WHOLE

- **367** BEDS
- **5,679** MEDICAL TRANSPORTS
- **16,021** ADMISSIONS
- **20,262** SURGICAL CASES
- **400,999** OUTPATIENT VISITS
- **590,075** TOTAL CLINIC VISITS

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