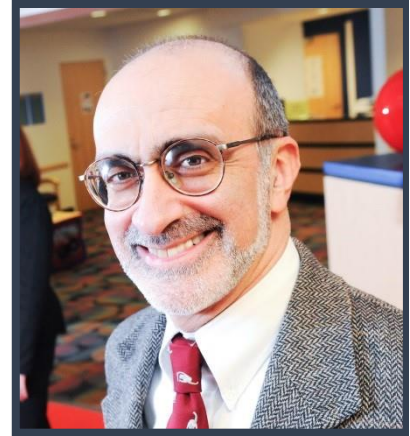


The [Division of Pediatric Endocrinology](#), directed by Perrin C. White, M.D., provides inpatient and outpatient clinical services to Children’s Medical Center and the broader community in the areas of general endocrinology, diabetes, and obesity. The Division’s catchment area extends north and east into Oklahoma, Louisiana and southwestern Arkansas, west to the Mid-Cities and occasionally into Fort Worth, and south as far as Houston. The faculty consists of 16 physicians (around 11 clinical full-time equivalent who conduct direct patient care and supervise a variety of other health professionals, including nurse practitioners and advanced practice nurses, certified diabetes educators, and endocrinology nurses. In 2022, the payer mix was 45% commercial, 52% Medicaid, and 3% other categories.



**Perrin C. White, M.D.**  
**Professor, Division Chief**

The Division includes three broad service categories, each with its own Medical Director.

- General Endocrinology, including growth, thyroid, puberty, pituitary and adrenal problems, directed by Dr. Soumya Adhikari
- Diabetes, directed by Dr. Abha Choudhary
- Obesity, the Center for Obesity and its Consequences in Health (COACH), directed by Dr. Amanda Shaw

Additionally, approximately a third of our outpatient encounters take place at the Children’s Health System of Texas Plano campus, with 10–15% of inpatient activities occurring there. Accordingly, we now have a Medical Director for the Plano campus, and the role is currently filled by Dr. Choudhary.

**Faculty**

The Division has 16 faculty members, 12 full-time and four part-time, as well as five fellows, all with varied interests in clinical and translational research. Advanced practice nurses, dietitians, medical assistants, social workers, and research coordinators provide additional support.

**Bethany Cartwright, M.D., Ph.D.**  
 Assistant Instructor



**M.D.**  
 UT Southwestern, Dallas, TX 2016  
**Ph.D., Cell and Molecular Biology**  
 UT Southwestern, Dallas, TX, 2016  
**Postdoctoral Training**  
 Residency, Pediatrics  
 UT Southwestern 2016 - 2019  
 Fellowship, Pediatric Endocrinology  
 UT Southwestern 2019 - 2022  
**Interests:** Childhood obesity, type 2 diabetes, weight stigma, basic and translational research, adipose development

**Maha Yousif, M.D.**  
Assistant Professor



**M.D.**  
University of Texas Medical Branch  
**Postdoctoral Training**  
Residency, Pediatrics  
University of Oklahoma Health Science Center  
Fellowship, Pediatric Endocrinology  
UT Southwestern Medical Center  
**Interests:** Disorders of puberty and thyroid disorders

## Honors / Awards

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

- Soumya Adhikari
- Abha Choudhary
- Ellen Grishman
- Melissa Ham
- Ximena Lopez
- Muniza Mogri
- Ryan Stewart
- Perrin White
- Ming Yang

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

- Ernesto Fernandez
- Amanda Shaw (Rising Star)

### **Ximena Lopez**

- Nominated for the Health Professional Leadership Award – LGBT Health Workforce Conference, New York City, US
- Pediatric Endocrine Society Clinician Award – Pediatric Endocrine Society, US
- Pride in Excellence Award for Outstanding Leadership in Health and Human Services – City of Dallas, TX, US

## Invited Lectures

### **Abha Choudhary**

- Annual Kenneth Haltalin Pediatrics for the Practitioner Seminar, Dallas, TX, May 2022
  - “Diabetes for the primary care provider”
- JDRF North Texas and Oklahoma Chapter Type 1 Nation, Arlington, TX, August 2022
  - “Technology updates and what’s to come”

### **Ximena Lopez**

- Maven Clinic Employees Training, Virtual, United States, June 2022
  - “Transgender Care for Youth”
- Disney Employees Training, Virtual, United States, June 2022
  - “Transgender Care for Youth”
- Gender Spectrum, Virtual, United States, July 2022
  - “Transgender Care for Youth in the Era of Misinformation”

### **Sudha Mootha**

- Pediatric Grand Rounds, UT Southwestern, Dallas, TX, February 2022
  - *"Medicine and Humanities"*

### **Nivedita Patni**

- Pediatric Endocrine Society Annual Meeting, Virtual, April 2022
  - *"The History of Lipidology"*
- University of Arkansas, Little Rock, April 2022
  - *"Lipodystrophy Syndromes"*

## **Conference Presentations**

### **PESTOLA (Pediatric Endocrinologists of Texas, Oklahoma, Louisiana, and Arkansas) Annual Meeting, Austin, TX, February 2022**

#### **Cartwright B**

Presentation, *"Two novel mutations in GNAS causing pseudohypoparathyroidism type 1A with severe early onset obesity: a case series"*

#### **Fernandez E**

Poster Presentation, *"Elevated 17-OH progesterone in a girl with Juvenile Granulosa cell Tumor"*

#### **Yousif M, Butler-Cephas A**

Poster Presentation, *"A Severe Presentation of Secondary Diabetes Mellitus"*

#### **Yousif M, Ham M**

Poster Presentation, *"A Case of Two Ovarian Tumors"*

### **Pediatric Endocrine Society (PES) Annual Meeting, Virtual, April 2022**

#### **Garg N, Lopez X, Adhikari S**

Poster Presentation, *"Mesenteric Necrosis in an Infant with Mixed Diabetic Ketoacidosis/Hyperglycemic Hyperosmolar Syndrome and New Onset Type 1 Diabetes"*

#### **Lopez X**

Invited Lecture, *"DOC in a Box Transgender Cases"*

#### **Patni N**

Invited Lecture, *"The History of Lipidology"*

### **Other Conferences**

#### **Choudhari P, Ham M**

Endocrine Society Annual Meeting, Atlanta, GA, June 2022

Poster Presentation, *"Effects of Elexacaftor-tezacaftor-ivacaftor on glucose tolerance and other metabolic parameters in children with cystic fibrosis"*

## **Education and Training**

The Division is committed to providing quality medical education for medical students, residents, and fellows. It has an active fellowship program and also provides inpatient and outpatient opportunities for residents and medical students.

## Medical Students

Pediatric Endocrinology faculty are active in providing didactic education to UT Southwestern Medical School students. The Division offers two electives for fourth-year pediatric clerkships that provide in-depth exposure and care to patients with diabetes and endocrinologic diseases.

## Residents

Faculty play a significant role in the education of the residents at Children's and UT Southwestern. As one of the largest endocrine and diabetes clinics in the country, the Division is able to offer residents a very broad experience.

The following education goals can be accomplished while rotating through the Division:

- The resident will become familiar with normal growth patterns in children, normal variants of growth, and be able to assess normal and abnormal patterns of pubertal development.
- The resident will be able to interpret endocrine function tests and perform/recommend appropriate diagnostic/screening tests for common endocrine complaints or referrals including thyroid disorders, short stature, disorders of puberty, and newborn screening of endocrine disorders.
- The resident will become familiar with the management of both Type 1 and Type 2 diabetes through experience in the inpatient and outpatient clinics. This experience can also include management of diabetes in a camp setting.

## Fellows

The Pediatric Endocrinology Fellowship Program accepted its first extramural fellow in 1999 and has grown to accept up to three fellows per year. Approximately half of the Division's fellows come from the Department's Pediatric Residency Program.

The Fellowship Program emphasizes both broad and deep clinical training, as well as experience in clinical research, bench research, or both. Almost all the fellows have published their projects as one or more papers in peer-reviewed literature, and the majority of graduates take academic positions at UT Southwestern or other medical schools.

Our world-class institution provides fellows with opportunities to obtain clinical endocrinology training at Children's Medical Center Dallas, where growth and commitment to excellence place it as one of the nation's top pediatric hospitals. Our endocrinology division was ranked 21st nationally by *U.S. News and World Report* in 2022.

## Research Activities

Pediatric endocrinology [faculty](#) are involved in both basic and clinical research. The Division of Pediatric Endocrinology works with laboratories in other departments and institutions, providing fellows with an opportunity to expand their research interests and learning opportunities.

[Dr. Perrin White](#) has studied several genetic diseases of steroid hormone biosynthesis and metabolism, including the most common forms of congenital adrenal hyperplasia. He is currently the lead investigator on a [National Institutes of Health-funded multicenter clinical trial](#) of an androgen biosynthesis inhibitor, abiraterone acetate, to ameliorate problems of androgen excess in prepubertal children with congenital adrenal hyperplasia. He is also the site lead

investigator for several multicenter studies of type 1 diabetes. These include [TrialNet](#), for which UT Southwestern is one of 13 members of a consortium to conduct trials of disease-modifying treatments in type 1 diabetes; a recently-concluded trial of a “[bionic pancreas](#)” advanced insulin pump; and a sponsored study of [teplizumab](#), a humanized anti-CD3 monoclonal antibody, to prolong the honeymoon in children with newly diagnosed type 1 diabetes.

[Dr. Soumya Adhikari](#) aspires to leverage the electronic medical record to yield data driven process changes and to better understand clinical outcomes. He maintains a robust database of clinical outcomes for more than 2,500 children with diabetes, and his work contributed to the development of a risk model for hospital admission with diabetic ketoacidosis, which can apply an automated risk score to individual patients based on data discreetly available in the electronic record. Dr. Adhikari is also developing protocols and processes to introduce continuous glucose monitoring to the care of inpatients with diabetes.

[Dr. Bethany Cartwright](#) is applying single cell transcriptomic and cellular cloning techniques to adipose tissue obtained from pediatric patients. She is identifying and characterizing unique cellular subpopulations in adipose tissue, and correlating this with clinical data obtained from patients, to determine how these cell populations influence disease.

[Dr. Ellen Grishman](#) is studying the relationship between blood glucose control, quality of life, bullying, and executive function in patients with type 1 diabetes. She is also examining the relationship between a blood biomarker and depressive symptoms in obese adolescents. Dr. Grishman has collaborated on a multicenter effort to validate the Pediatric Quality of Life Inventory in children with type 1 and type 2 diabetes, and she also collaborates on interventional trials of disease-modifying therapy for type 1 diabetes.

[Dr. Ximena Lopez](#)'s studies focus on the long-term outcomes of mental and physical health of transgender adolescents that receive puberty suppression and cross-sex hormones before adulthood. She was also the local principal investigator for recent clinical trials on the efficacy and safety of [colesevelam](#) and [liraglutide](#), respectively, in the treatment of type 2 diabetes in adolescents.

[Dr. Nivedita Patni](#)'s academic and clinical interests are pediatric endocrine and lipid disorders, including genetic dyslipidemias like type 1 hyperlipoproteinemia (T1HLP), and rare lipodystrophy, and progeria syndromes. She has studied the prevalence, clinical features, and various etiologies of extreme hypertriglyceridemia in children and is working on determining the genetic bases of lipid disorders in children and the genotype-phenotype relationships in these patients. Patients with T1HLP are a challenge to treat. Dr. Patni recently completed a pilot randomized, open label, crossover clinical trial of the gastric and pancreatic lipase inhibitor, orlistat, in these patients, obtaining promising results. She has described a novel syndrome of generalized lipodystrophy associated with pilocytic astrocytoma and a novel finding of juvenile-onset generalized lipodystrophy in two patients with a new mutation in the lamin A (LMNA) gene. Dr. Patni has also studied and published detailed clinical and metabolic parameters of children with familial partial lipodystrophy caused by LMNA mutations and continues her research work at the Center for Human Nutrition at UT Southwestern Medical Center to understand the natural history and physiology of rare lipodystrophy syndromes. Her other recent work includes a description of a novel autosomal recessive familial generalized lipodystrophy syndrome due to a homozygous LMNA variant, collaborative work identifying a novel generalized lipodystrophy-associated progeroid syndrome due to a different specific mutation in LMNA, and autosomal recessive Wiedemann-Rautenstrauch syndrome, or neonatal progeroid syndrome, due to a novel locus involving the POL3RA gene, which encodes a subunit of the RNA polymerase III enzyme.

## **Clinical Activities**

### **Inpatient Services**

The Division provides direct oversight to a dedicated endocrinology service, which is currently integrated as the “Blue-Endocrine” Pediatric Medicine team. In 2022, this service admitted 688 patients with diagnoses that included

diabetes mellitus, panhypopituitarism, adrenal insufficiency, and diabetes insipidus, among other endocrine disorders.

The Endocrinology Division also provides inpatient consultative services to the entire hospital, including the intensive care units and the hematology-oncology, gastroenterology, pulmonary medicine, and cystic fibrosis services. The leading reasons for consultation are diabetes mellitus, secondary diabetes/hyperglycemia, diabetes insipidus, electrolyte abnormalities, hypoglycemia, and adrenal insufficiency. There were 749 inpatient consultations in 2022, with a total of 4,018 inpatient encounters resulting from inpatient admissions and consultations.

Recognizing the increasing demands of the inpatient consultation service, which now provides services at four different Dallas hospitals, the Division established separate inpatient and consultation services in July 2014, each with its own attending physician (except for the weekend and at night, when a single on call attending provides both services). The Division also added a third attending physician at the same time to be available for inpatient activities at the Plano campus.

## Outpatient Services

### Endocrine Clinic

Our endocrine clinic offers comprehensive evaluation and treatment for infants, children, and adolescents in all areas of pediatric endocrinology. Evaluation of hormonal disorders includes, but is not limited to, growth, puberty, sexual development, calcium, thyroid, and adrenal.

Our center is a major referral center for the [Texas Department of Health Newborn Screening Program, congenital hypothyroidism, congenital adrenal hyperplasia](#) and adrenoleukodystrophy.

In 2022, the Division's attending physicians and advanced practice nurses performed 20,413 outpatient visits with 11,305 individual patients and 510 telemedicine visits and supervised about 6,500 visits by non-physician providers. The physician totals included 3,389 new patient visits and outpatient consultations. The Division provides outpatient services at all three Children's locations.

### Diabetes Clinic

Accredited by the Joint Commission, our [diabetes clinic](#) provides a comprehensive bilingual education program for both Type 1 and Type 2 diabetes. We utilize a team approach which includes a variety of healthcare specialists to address the needs of this population.

### Center for Obesity and its Consequences in Health (COACH)

Our [COACH clinic](#) provides the only comprehensive program for childhood obesity in North Texas, with more than 600 referrals per year. A systematic approach is used to evaluate and treat these obese children, including detailed diet and exercise histories and recommendations for new regimens based on a child's health needs. We encourage prospective patients and families to discuss medical concerns with their primary care physicians. Referral to our clinics will be made or recommended by primary care physicians.

### Lipid Clinic

Our lipid clinic treats children with high blood levels of cholesterol or triglycerides (fats).

## Patient Statistics

Endocrinology Sessions per Week by Location and By Year:

	2017	2018	2019	2020	2021	2022
Clinic	Sess/Wk	Sess/Wk	Sess/Wk	Sess/Wk	Sess/Wk	Sess/Wk
Dallas Endocrinology and Diabetes	44	44	52.3	52	74	74
Legacy	18	18	20	24	27	27.4
Texas Health Dallas	4	4	4.6	3.8	3.6	3.6

## Current Grant Support

### Bethany Cartwright

**Grantor:** Children's Health (WW Caruth Fellow Scholar Award)

**Title of Project:** Exploring the Cellular Landscape of Adipose Tissue in Pediatric Obesity

**Role:** Principal Investigator

**Dates:** 09/2021 – 09/2023

**Grantor:** National Institute of Child Health and Human Development

**Title of Project:** Partnering lifestyle intervention with bariatric surgery to maximize health outcomes in adolescents

**Role:** Co-Investigator

**Dates:** 07/2022 – 02/2024

### Ellen Grishman

**Grantor:** Brain & Behavior Research Foundation/NARSAD

**Title of Project:** Adiponectin, Ceramides and Depressive Symptoms in Obese

**Role:** Principal Investigator

**Dates:** 01/2014 – 07/2022

### Nivedita Patni

**Grantor:** NIH-National Institutes of Health

**Title of Project:** Genetic and Metabolic Basis of Familial Lipodystrophies

**Role:** Co-Investigator

**Dates:** 09/2020 – 08/2025

### Perrin White

**Grantor:** NIH/NICHD

**Title of Project:** Abiraterone Acetate in Children with Classic 21-Hydroxylase Deficiency

**Role:** Principal Investigator

**Dates:** 2015 – 2022

**Grantor:** NIH/University of South Florida

**Title of Project:** Type 1 Diabetes TrialNet Coordination Center (TNCC)

**Role:** Site Principal Investigator

**Dates:** 2020 – 2022

## Peer-Reviewed Publications

1. Carswell JM, Lopez X, Rosenthal SM. [The Evolution of Adolescent Gender-Affirming Care: An Historical Perspective](#). *Horm Res Paediatr*. 2022;95(6):649-656. PMID:36446328
2. Choudhary A, Adhikari S, White PC. [Impact of the COVID-19 pandemic on management of children and adolescents with Type 1 diabetes](#). *BMC Pediatr*. 2022 Mar 10;22(1):124. PMID:35272660
3. Claahsen-van der Grinten HL, Speiser PW, Ahmed SF, Arlt W, Auchus RJ, Falhammar H, Flück CE, Guasti L, Huebner A, Kortmann BBM, Krone N, Merke DP, Miller WL, Nordenström A, Reisch N, Sandberg DE, Stikkelbroeck NMML, Touraine P, Utari A, Wudy SA, White PC. [Congenital Adrenal Hyperplasia-Current Insights in Pathophysiology, Diagnostics, and Management](#). *Endocr Rev*. 2022 Jan 12;43(1):91-159. PMID:33961029
4. Dilday EA, Bukulmez O, Saner K, Lopez X, Jarin J. [Sperm Cryopreservation Outcomes in Transgender Adolescents Compared with Adolescents Receiving Gonadotoxic Therapy](#). *Transgend Health*. 2022 Nov;7(6):528-532. PMID:36644123
5. Flippo C, Kolli V, Andrew M, Berger S, Bhatti T, Boyce AM, Casella D, Collins MT, Délot E, Devaney J, Hewitt SM, Kolon T, Mallappa A, White PC, Merke DP, Dauber A. [Precocious Puberty in a Boy With Bilateral Leydig Cell Tumors due to a Somatic Gain-of-Function LHCGR Variant](#). *J Endocr Soc*. 2022 Aug 12;6(10):bvac127. PMID: 36111273
6. Garcia AD, Lopez X. [How Cisgender Clinicians Can Help Prevent Harm During Encounters With Transgender Patients](#). *AMA J Ethics*. 2022 Aug 1;24(8):E753-761. PMID:35976932
7. Magge SN, Wolf RM, Pyle L, Brown EA, Benavides VC, Bianco ME, Chao LC, Cymbaluk A, Balikcioglu PG, Halpin K, Hsia DS, Huerta-Saenz L, Kim JJ, Kumar S, Levitt Katz LE, Marks BE, Neyman A, O'Sullivan KL, Pillai SS, Shah AS, Shoemaker AH, Siddiqui JAW, Srinivasan S, Thomas IH, Tryggestad JB, Youisif MF, Kelsey MM, COVID-19 and Type 2 Diabetes Consortium. [The Coronavirus Disease 2019 Pandemic is Associated with a Substantial Rise in Frequency and Severity of Presentation of Youth-Onset Type 2 Diabetes](#). *J Pediatr*. 2022 Dec;251():51-59.e2. PMID:35985535
8. Marwa A, Misra M, Lopez X. [Determinants of Bone Mineral Density in Transgender Youth](#). *Transgend Health*. 2022 Jun;7(3):213-218. PMID:36643057
9. Messer LH, Buckingham BA, Cogen F, Daniels M, Forlenza G, Jafri RZ, Mauras N, Muir A, Wadwa RP, White PC, Russell SJ, Damiano ER, El-Khatib FH, Ruedy KJ, Balliro CA, Li Z, Marak MC, Calhoun P, Beck RW. [Positive Impact of the Bionic Pancreas on Diabetes Control in Youth 6-17 Years Old with Type 1 Diabetes: A Multicenter Randomized Trial](#). *Diabetes Technol Ther*. 2022 Oct;24(10):712-725. PMID:36173237
10. Miller WL, White PC. [A Brief History of Congenital Adrenal Hyperplasia](#). *Horm Res Paediatr*. 2022;95(6):529-545. PMID:36446323



11. Mistry S, Tonyushkina KN, Benavides VC, **Choudhary A**, Huerta-Saenz L, Patel NS, Mahmud FH, Libman I, Sperling MA. [A centennial review of discoveries and advances in diabetes: Children and youth](#). *Pediatr Diabetes*. 2022 Nov;23(7):926-943. PMID:35821595
12. Patel A, **Patni N**. [Evaluation and Management of Lipids and Lipoproteins in Children and Adolescents](#). *Endocrinol Metab Clin North Am*. 2022 Sep;51(3):573-588. PMID:35963629
13. **Patni N**, Hegele RA, Garg A. [Caveolar dysfunction and lipodystrophies](#). *Eur J Endocrinol*. 2022 Jan 28;186(3):C1-C4. PMID:34935636
14. **Patni N**, Garg A. [Lipodystrophy for the Diabetologist-What to Look For](#). *Curr Diab Rep*. 2022 Sep;22(9):461-470. PMID:35821558
15. Bionic Pancreas Research Group, Russell SJ, Beck RW, Damiano ER, El-Khatib FH, Ruedy KJ, Balliro CA, Li Z, Calhoun P, Wadwa RP, Buckingham B, Zhou K, Daniels M, Raskin P, **White PC**, Lynch J, Pettus J, Hirsch IB, Goland R, Buse JB, Kruger D, Mauras N, Muir A, McGill JB, Cogen F, Weissberg-Benchell J, Sherwood JS, Castellanos LE, Hillard MA, Tuffaha M, Putman MS, Sands MY, Forlenza G, Slover R, Messer LH, Cobry E, Shah VN, Polsky S, Lal R, Ekhlaspour L, Hughes MS, Basina M, Hatipoglu B, Olansky L, Bhangoo A, Forghani N, Kashmiri H, Sutton F, **Choudhary A**, Penn J, Jafri R, Rayas M, Escaname E, Kerr C, Favela-Prezas R, Boeder S, Trikudanathan S, Williams KM, Leibel N, Kirkman MS, Bergamo K, Klein KR, Dostou JM, Machineni S, Young LA, Diner JC, Bhan A, Jones JK, Benson M, Bird K, Englert K, Permuy J, Cossen K, Felner E, Salam M, Silverstein JM, Adamson S, Cedeno A, Meighan S, Dauber A. [Multicenter, Randomized Trial of a Bionic Pancreas in Type 1 Diabetes](#). *N Engl J Med*. 2022 Sep 29;387(13):1161-1172. PMID:36170500
16. **White PC**. [Emerging treatment for congenital adrenal hyperplasia](#). *Curr Opin Endocrinol Diabetes Obes*. 2022 Jun 1;29(3):271-276. PMID:35283460

## Book Chapters

1. Henehan MJ, Gibson M, Fulmer C, Ghuman M, **Choudhary A**, Nuti R. (2022). [13-Year-Old Athlete with Frequent Fractures](#). In: Henehan M, Gibson ME, Fulmer C, Ghuman M (Eds.), *Best Practices in Sports Medicine: AMSSM and AOASM Case Studies* (2<sup>nd</sup> ed., pp. 241-248). Monterey, CA: Healthy Learning