

UT Southwestern
Medical Center
Department of Pediatrics

Pediatric Emergency Medicine

2023 Annual Report

The Division of Pediatric Emergency Medicine strives to be a national leader in education and research while providing compassionate, high-quality emergency care to pediatric patients in North Texas.

Pediatric Emergency Medicine – 2023 Annual Report

The [Division of Pediatric Emergency Medicine](#) (PEM) provides clinical services at the Emergency Department (ED) of Children's Medical Center Dallas (CMC). The Dallas campus is the only Level 1 Pediatric Trauma Center in North Texas and is a major pediatric referral center for Dallas County and the surrounding region. We are one of the busiest pediatric emergency medicine clinical services in the country. The 2023 academic year (AY) patient volume was 117,687. In the ED, 12% of patients are admitted, representing 63% of overall hospital admissions.

The faculty and PEM fellows provide clinical service at Children's Medical Center Dallas' ED. Staffing is provided primarily by faculty from the UTSW Division of PEM but is augmented by several Emergency Medicine physicians and advanced practice providers from UT Southwestern as well.








Under the direction of Division Chief Vincent J. Wang, M.D., M.H.A., the PEM Division plays a vital role in providing attending physician support for the ED of Children's Medical Center Dallas, while serving as the primary pediatric emergency medicine educational site for numerous residency programs in various stages of clinical training. Faculty from the Division sponsor the largest national board review course for pediatric emergency medicine (PEMQBook Board Review Course), a national virtual Grand Rounds, and PEMTalks, which provides continuing medical education for North Texas physicians and advanced practice providers. The Division of PEM is also engaged in editorial and authorship roles in the *Fleisher & Ludwig's 5-Minute Pediatric Emergency Medicine Consult* and the *Pediatric Emergency Medicine Question Review Book*.

In 2019, the UTSW Division of PEM became a member of the Pediatric Emergency Care Applied Research Network (PECARN), the largest federally funded research consortium for pediatric emergency medicine in the country. UTSW is one of the highest-enrolling centers in the PECARN consortium. Numerous high-impact publications have resulted from our participation. The Division also continues to present at meetings and publish innovative research studies to improve the emergency care of children.



Vincent Wang, M.D., M.H.A.
Professor, Division Chief

Numbers at a Glance

 <p>Faculty: 32 New Faculty: 5 Promotions: N/A</p>	 <p>Clinical Fellows: 14 Clinical Sites: 1</p>	 <p>Inpatient Encounters: 326*</p>  <p>Outpatient Encounters: 70,245*</p>
 <p>Research Funding Total* Grants: \$1,211,703 Contracts: N/A Total # Proposals Awarded: 7 Public Federal (# of K awards): N/A Public State of Texas: N/A Other: 7 Revenue from Active Clinical Trials as of 12/31/2023: \$930,260</p>	 <p>Active Clinical Trials: 20*</p>	 <p>Conferences/Lectures: 56 Publications: 23* Citations: 848* Book Chapters: 1</p>

*Sources: Orbit report of RHi032 Organizational Research Dashboard, UTSW Office of Research and Grants Support, Faculty Affairs, Education Alumni Affairs, Clinical Business Operations- invoice creation period for 2023, CVs

Pediatric Emergency Medicine – 2023 Annual Report

Honor/Award

Jo-Ann Nesiama, M.D.

- Faculty Senate President – UT Southwestern Medical Center

Top Conference Presentation Locations

1. Association of Pediatric Program Directors Conference, Atlanta, March 2023
2. Pediatric Academic Society National Convention, Washington, D.C., April 2023
3. Society for Academic Emergency Medicine National Conference, Austin, May 2023
4. PEMQBook Board Review Course, Virtual National Conference, December 2023

Education and Training

The Division of PEM provides educational opportunities for medical students and residents in addition to our fully accredited fellowship program. Dr. Kim Van Horn is the Simulation Lead for the Department of Pediatrics, and she coordinates experiences in the Simulation Lab for the learners from Pediatrics, Family Medicine, and Emergency Medicine at UTSW.

The Division of PEM underwent significant changes in clinical scheduling for both attending physicians and residents. The senior pediatric residents and emergency medicine residents transitioned to shorter shifts in the 2023 AY. The expansion of emergency medicine residents from UT Southwestern and Baylor University Medical Center continued in the second year and will be concluded in the 2024 AY.

Faculty from UTSW run the *Pediatric Emergency Medicine Question Review Book* Board Review Course. Drs. Pamela Okada, Craig Huang, and Sing-Yi Feng co-lead this national course, which is the largest board review course in the country and the largest gathering of junior pediatric emergency medicine attendings. The last course was offered as a monthly series from December 2022 through March 2023, in preparation for the American Board of Pediatrics/Emergency Medicine certifying examination in April 2023.

PEMTalks is a semimonthly virtual presentation given to local physicians and advanced practice providers (APPs). During the COVID-19 pandemic, attendance at some conferences exceeded 600 and included participants from Oklahoma, New Mexico, and Colorado. More recently, average attendance is 80-100 per session. Dr. Okada and Dr. Megan Street co-lead this educational effort.

Medical Students

The PEM faculty and fellows are active in providing didactic education to UT Southwestern medical students. The Division offers a third-year medical student rotation and a fourth-year medical student clerkship that provide in-depth exposure to pediatric emergency medicine through the recognition, evaluation, and management of acutely ill and injured children. Dr. Kymberly Gonzalez serves as Associate Education Director and oversees the medical students.

Pediatric Emergency Medicine – 2023 Annual Report

Residents

Major internal educational activities include didactic lectures to the General Pediatric, Family Medicine, and Emergency Medicine residents. Training in the Emergency Department is often sought by residents from other pediatric training programs, most commonly in Texas, Oklahoma, and Florida. Dr. Van Horn serves as the Education Director, with Dr. Vicki Moore and Dr. Gonzalez as Associate Education Directors.

The objectives of the clinical experience in the PEM are to:

- Recognize, evaluate, and manage acutely ill and injured pediatric patients.
- Master technical skills including venous access, venipuncture, lumbar puncture, laceration repair, splinting, and bladder catheterization.
- Evaluate and manage common pediatric complaints and disease processes.
- Acquire and maintain the efficiency and prioritization required to care for multiple patients simultaneously.

Requirements for the rotation include:

- Core competencies: common complaints, disease processes, and technical skills
- Monthly patient lists: chief complaint and diagnosis
- Noon and monthly emergency room conferences and Grand Rounds

Education opportunities include:

- Weekly Pediatric Emergency Medicine Conferences
- Joint semiweekly Pediatric Emergency Medicine/Radiology Rounds
- Mock codes
- Pediatric Emergency Medicine Fellows Conferences

Fellows

The well-established Pediatric Emergency Medicine Fellowship Program provides excellent clinical training and includes a comprehensive research curriculum with didactic teaching that covers basic research concepts and statistics. It also supports an extensive teaching curriculum to promote fellows' individual growth as educators. The program strives to prepare the fellows to be outstanding clinician-educators while training them to lead our future in pediatric emergency medicine. They are also encouraged to complete two research projects by graduation.

The Division currently has 12 full-time fellows, each with diverse research and administrative interests. Dr. Jo-Ann Nesiama is the Fellowship Director, Dr. Sing-Yi Feng is the Associate Fellowship Director, and newly appointed Dr. Geoffrey Lowe is the Assistant Fellowship Director. The Fellowship Coordinator is Amy Park.

The fellowship continues to be competitive, matching three candidates for the academic year beginning July 2023 and attracting candidates from Dallas, New York City, and Virginia. Due to having five fellows match in 2022, we had three fellowship positions in 2023. The fellowship has matched all open positions for the past 10 years.

Division faculty have diverse research interests, offering the fellows a unique opportunity to select the appropriate mentor with interests that match theirs. The Research Directors and Research Council assist faculty and fellows with their research projects, and the Fellowship Director has a Master of Epidemiology, as does the Research Director (Dr. Ken Yen).

Pediatric Emergency Medicine – 2023 Annual Report

Research Activities

The PEM Division serves a diverse population with broad pediatric pathology and high acuity, providing an ideal environment for clinical research. Because of our rich clinical service and research interests, the Division has been routinely selected to participate in multicenter, national, and international studies. Our research team has a proven track record of success by becoming one of the top enrolling sites for multiple studies.

In 2019, the Division of PEM became a member of PECARN, the largest federally funded research consortium for pediatric emergency medicine in the country. Our PECARN node includes Children’s Hospital Los Angeles/University of Southern California and Seattle Children’s Hospital/University of Washington.

Our mission is to conduct state-of-the-art clinical research, with an emphasis on improving the clinical care and outcome of acutely ill or injured children. The pillars of the research program in our division include trauma, emergency medical services/pre-hospital management, injury prevention, pain management, sedation, respiratory care, and neurologic emergencies.

The Division Research Council reviews and oversees all PEM research. The Council is composed of the Division Chief, Research Director, Fellowship Director, Associate Fellowship Director, Research Coordinator, faculty members of the Injury Prevention Program, a member of the Emergency Medicine nursing management and nursing education staff and select senior PEM faculty. The PEM Research Council's purpose is to review and oversee all PEM research development and conduct. The council was formed in order to have a committee within the Division with research expertise to provide advice and support for projects and to help projects reach their full potential.

Patient Care

PEM [faculty](#) and [fellows](#) provide emergency services at [Children's Medical Center Dallas, which has](#) one of the busiest pediatric EDs in the country. The CMC Dallas ED is the only Level 1 Pediatric Trauma Center in North Texas. We provide care for the common, the complex, and everything in between. We provide emergency care for a variety of complex problems in children with special health care needs. Most of the patients seen annually in the Emergency Department are high-acuity emergency severity index (ESI) levels 1, 2, and 3.

Professor [Sing-Yi Feng, M.D.](#), and Associate Professor [Robert J. Hoffman, M.D., M.S.](#), are board certified in pediatric emergency medicine and medical toxicology. Dr. Feng manages a special [Lead Poisoning Clinic](#) at Children’s and provides toxicology consultation service to Children’s and Parkland Memorial Hospital. Dr. Hoffman joined the Division of PEM in May 2023 and will begin providing toxicology consultation services in the 2024 AY.

Assistant Professor [Clay Yaklin, M.D.](#), is board certified in pediatric emergency medicine and palliative care. He provides palliative care services to children admitted to CMC.

Assistant Professors [Bethasabee Stone, M.D.](#), and [Taketo Baba, M.D.](#), are board certified in pediatric emergency medicine and trained in Point-of-Care Ultrasound (POCUS). Dr. Stone is the POCUS Director for the ED.

Pediatric Emergency Medicine – 2023 Annual Report

Clinical Activities

PEM faculty and fellows provide emergency medicine services at Children's Medical Center Dallas. In the 2023 AY, the Division of PEM continued to serve as the entrance point for the hospital as the flagship pediatric emergency department in Dallas.

Pediatric EDs across the country appeared to return to pre-pandemic census levels in 2022. In the fall of 2022, these pediatric emergency medicine departments reported extraordinary peaks that were compounded by a lack of inpatient bed capacity. With many boarding inpatient and intensive care unit (ICU) patients in the ED, a high census, and challenges with inadequate staffing throughout hospital systems, the pediatric EDs struggled to manage the extraordinary surge of patients. Common predictive models for ED staffing were upended by a moderate census winter and a continuous influx of patients from March 2022 through December 2022, with the highest peaks in September, October, and November. Reports from other centers demonstrated left-without-being-seen rates as high as 50% on some days. Similarly, in Dallas, influenza, respiratory syncytial virus, and rhino/enterovirus infections peaked simultaneously in the late summer and fall of 2022, as the CMC's ED managed overflow for the ICU and inpatient services, which were at capacity due to bed and nursing shortages. As shown in the metrics below, patients admitted to the ICU increased significantly, jumping to 2,795, which is a 220% increase from pre-COVID pandemic numbers. The ED continued to function as the safety net for outpatient and inpatient services as we boarded patients requiring admission for medical, surgical, and behavioral conditions. The behavioral health crisis was steady, with continued challenges and regular peaks. Over the remainder of the 2023 AY, the seasonal census appeared to normalize compared with previous years.

The faculty and nurses in the ED did an excellent job navigating the unknown while still providing the expected emergency care. In the face of physician and nursing staffing challenges as part of the national health care worker shortage, as well as quarantines due to COVID-19 infections, the 2023 AY proved to be more difficult for reasons other than the original effects of the pandemic.

Dr. Mohamed Badawy served as the Medical Director of Children's Medical Center Dallas' Emergency Department, and **Drs. Beatrix Bansal, Megan Street, and Michael Baldovsky** served as Co-Associate Medical Directors.

- Our 2023 AY patient volume was 117,687 visits, which was slightly lower than the 2022 AY (120,169).
- The overall ED admission rate was 12.1% (14,274).
 - 63% of all hospital admissions originated from the Emergency Department in the 2023 AY.
 - Among admissions, 19% (2,795/14,274) were admitted to one of the ICUs, reflecting a relatively large number of critically ill and injured children. This past academic year exhibited high acuity, with a jump in ICU admissions from 13% to 19%.

The number of high-acuity/high-morbidity patients remained disproportionately higher:

- ESI (triage index)
 - ESI 1/2/3 (higher acuity):
 - 67,999 in 2023 (58% of all patients)
 - 66,836 in 2022 (56% of all patients)
 - 58,982 in 2021 (53% of all patients)
 - 43,089 in 2020 (58% of all patients)
 - 63,483 in 2019 (49% of all patients)
 - ESI 4/5 (lower acuity):
 - 48,292 in 2023 (41% of all patients)
 - 52,312 in 2022 (44% of all patients)
 - 51,201 in 2021 (46% of all patients)
 - 32,122 in 2020 (42% of all patients)
 - 66,886 in 2019 (51% of all patients)
- Deaths in the ED in the 2023 AY: 30

Pre-COVID, Children's Medical Center Dallas was one of the busiest pediatric emergency medicine clinical services in the country. Recent rankings in Beckers' Annual Hospital Review place it as the only pediatric ED on its list of busiest EDs and the 30th busiest, inclusive of all general EDs.

Pediatric Emergency Medicine – 2023 Annual Report

Patient Statistics

Emergency Medicine Patient Visits by Location by Volume and Length of Stay by Year:

Dallas Emergency Department

	2019	2020	2021	2022	2023
Annual Volume	130,369	75,210	110,989	120,929	117,687
ESI 1, 2, 3 (Highest Acuity)	62,769	42,980	58,982	66,836	67,999
ESI 1, 2, 3: Median Length of Stay	269	220	270	339	363
ESI 4, 5 (Lowest Acuity)	66,886	32,122	51,201	52,312	48,292
ESI 4, 5 Median Length of Stay	188	131	181	264	212
Total Admissions	13,973	10,748	14,982	13,523	14,274
% of Hospital Admissions Through ED	Not available	56%	58%	45%	63%
Behavioral Health Patients	2,637	2,501	3,647	3,177	3,071
% of Total Admissions	2.0%	3.3%	3.3%	2.6%	2.6%
Transfers to a Critical Care Unit	1,254	1,162	1,434	1,811	2,795
Deaths in the ED	20	27	32	31	30
Annual LWBS	6.8%	0.8%	5.1%	11.6%	9.7%

Dallas Emergency Department Trauma Statistics

	2019	2020	2021	2022	2023
Trauma Stat Activation	90	124	155	137	127
Trauma Alert Activation	318	350	555	401	413
Trauma Consult	365	356	511	393	382
Trauma Admission	1,185	1,178	1,479	1,220	1,396

Pediatric Emergency Medicine – 2023 Annual Report

Top Five Publications (Journals, Online, Review Articles, Case Reports)

1. **Manuel MM, Yen K, Feng SY, Patel F.** [The burden of mental and behavioral health visits to the pediatric ED: A 3-year tertiary care center experience.](#) Child and Adolesc Mental Health. 2023 Nov; 28(4): 488-496. PMID: 36794694
2. **Mehmood N, Nesiama JO, Yen K, Dhar A, Lowe GS.** [Assessing the New Norm: A Simulation Study to Assess Pediatric Emergency Physician Success in Critical Procedures With an Air Purifying Respirator.](#) Pediatr Emerg Care. 2023 Dec 1;39(12):e86-e89. PMID: 37205872
3. **Tsao HS, Alter R, Kane E, Gross T, Browne LR, Auerbach M, Leonard JC, Ludwig L, Adalgais KM.** [Pediatric Emergency Care Coordination in EMS Agencies: Findings of a Multistate Learning Collaborative.](#) Prehosp Emerg Care. 2023;27(8):1004-1015. PMID: 36125189
4. **Tsze DS, Kuppermann N, Casper TC, Barney BJ, Richer LP, Liberman DB, Okada PJ, Morris CR, Myers SR, Soung JK, Mistry RD, Babcock L, Spencer SP, Johnson MD, Klein EJ, Quayle KS, Steele DW, Cruz AT, Rogers AJ, Thomas DG, Grupp-Phelan JM, Johnson TJ, Dayan PS; Pediatric Emergency Care Applied Research Network (PECARN).** [Stratification of risk for emergent intracranial abnormalities in children with headaches: a Pediatric Emergency Care Applied Research Network \(PECARN\) study protocol.](#) BMJ Open. 2023 Nov 22;13(11):e079040. PMID: 37993148
5. **Van der Laan L, Gaines N, Van Horn N, Jo C, Ma Y, Copley LA.** [Comparison of Procalcitonin with Commonly Used Biomarkers and Algorithms for Evaluating Suspected Pediatric Musculoskeletal Infection in the Emergency Department.](#) Journal of Pediatr Orthop 2023 Feb 1;43(2): e168-e173. PMID: 36607929