The Division of Pediatric Emergency Medicine (PEM) is one of the largest divisions within the Department of Pediatrics at UT Southwestern. The Emergency Department has always been the entry point for the Hospital, and in times of uncertainty, it serves a vital role for operations. In the second year of the COVID-19 Pandemic, the front-line faculty and staff continued to serve the Hospital and the Department of Pediatrics, developing protocols and managing surges. In addition to the once-in-a-century pandemic, Texas had a once-in-30 years snowstorm that paralyzed the city. Nevertheless, the Emergency Department remained open as a critical lynchpin for the emergency system, even as parts of the emergency department flooded due to bursting pipes.

After nearly 12 months of lower census, including the 2020-2021 winter season, pediatric emergency departments across the country began to see increasing numbers of patient activity. Common predictive models for emergency department staffing were upended with a low census winter, and a continuous influx of patients from March 2021 through the end of the calendar year. Influenza cases remained at historic lows throughout 2021, while RSV peaked in the summer of 2021 as ICUs and inpatient services were at capacity due to bed and nursing shortages. The emergency department functioned as the



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

safety net for inpatient services, as we boarded patients requiring admission for medical, surgical, and behavioral conditions, including ICU patients awaiting placement. The behavioral health crisis was worse than any previous year, with up to 24 simultaneous patients boarding during our peak. Despite the continuing and new challenges of the COVID-19 pandemic, and the responsibility of the Emergency Department to provide care, the Division of Pediatric Emergency Medicine was highly successful in 2021.

The faculty and PEM fellows provide clinical service at Children's Health Emergency Department, Dallas. After a slow first quarter, our 2021 patient volume increased from the preceding year. Dallas had 110,989 patient visits in 2021. This is increased from 75,211 in 2020, and was closer to normal volume (130,375 in 2019). In addition to staffing from UTSW Division of PEM faculty, a number of Emergency Medicine physicians and advanced practice providers from UTSW assisted in the care of patients.

The Dallas Campus ED is the primary pediatric ED for Dallas, serves as a major pediatric referral center, and is the only American College of Surgeons verified Level I pediatric trauma center in North Texas. As such, the ED provides pediatric trauma stabilization and resuscitation, and plays a key role in the trauma network for North Texas. Division faculty also provide medical oversight and physician coordination for the Children's Health transport team and Dallas County Emergency Medical Services (BioTel).

The Division has been a member of the Pediatric Emergency Care Applied Research Network (PECARN) since 2019. Membership is limited to a handful of leading academic medical centers, with multicenter research studies making impactful changes in Pediatric Emergency Medicine. PECARN is a significant step forward in research accomplishment for the Division. In addition, our faculty are involved in numerous clinical research studies designed to advance patient care and knowledge for emergency conditions involving neurological diseases, respiratory problems, trauma, bedside ultrasound, prehospital care, and noninvasive monitoring.

The PEM Division plays a vital role in training pediatric emergency medicine fellows, pediatric residents, emergency medicine residents, family medicine residents, medical students, and advanced practice providers, who will provide pediatric emergency care throughout the country. The Division's well-established, ACGME accredited pediatric emergency medicine fellowship program provides strong clinical, educational, and research training, and plays a crucial role in clinical teaching. During the COVID-19 pandemic, educational initiatives expanded, due to a focused effort to be an educational leader. In 2021, UTSW led efforts in two multi-center educational initiatives. The Gary R. Fleisher Virtual Grand Rounds provides a forum for UTSW, Boston Children's, Nationwide Children's, and the University of Colorado/Denver Children's to share expertise. The All Texas PEM Fellows Meeting similarly brings together the four PEM fellowship programs in Texas to share knowledge.

Ongoing regional/national initiatives included PEM Talks, which is a monthly educational series for primary care providers in North Texas, and the 4th PEMQBook national board review course, which had the highest attendance ever. Local efforts include the core PEM Conference series, a semi-weekly joint ED-Radiology conference, semi-weekly residents' conferences, and various lectures given regionally. Attendings, fellows, residents, and medical students are encouraged to attend conferences.



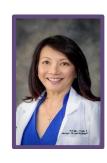
Pediatric Emergency Medicine Division Leadership



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



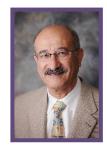
Mohamed Badawy, M.D. Associate Professor Medical Director-Dallas



Pamela Okada, M.D., M.S. Professor Medical Director -Outreach



Ken Yen, M.D., M.S. Associate Professor Co-Research Director



Halim Hennes, M.D., M.S. Professor Co-Research Director



Jo-Ann Nesiama M.D., M.S. Associate Professor Fellowship Director



Sing-Yi Feng, M.D. Associate Professor Associate Fellowship Director



Craig Huang, M.D. Associate Professor EMS and Trauma Director



Kim Van Horn, M.D. Assistant Professor Education Director



Megan Street, M.D. Assistant Professor Co-Associate Medical Director, Dallas



Michael Baldovsky, D.O., M.B.A. Assistant Professor Co-Associate Medical Director, Dallas Referral Nurse Program Director



Division Faculty

The Division has 29 full-time and seven part-time faculty members. Included in the group of part-time faculty members are two who are full-time but split their time with other Departments. Dr. Nielson is board certified in Emergency Medicine and Pediatric Emergency Medicine, spending half his time with each; and Dr. Yaklin is board certified in Palliative Care and Pediatric Emergency medicine, spending 25% of his time on the Palliative Care service.



Beatrix Bansal, M.D. Assistant Professor



Amy Cheng, M.D. Assistant Professor



Michael Cooper, M.D. Assistant Professor



Jeannette Dodson, M.D. Assistant Professor



Nakia Gaines, M.D. Assistant Professor



Alessandra Guiner-Da Silva, M.D. Assistant Professor



Rachel Long, D.O. Assistant Professor



Geoffrey Lowe, M.D. Assistant Professor



Jonathan Nielson, M.D. Assistant Professor



Lori Pandya, M.D. Assistant Professor



Kalpesh Patel, M.D. Assistant Professor



David Rodriguez, M.D. Assistant Professor



Susan Scott, M.D. Associate Professor



Asha Tharayil, M.D. Assistant Professor



Jennifer Tiller, M.D. Assistant Professor





Clay Yaklin, M.D. Assistant Professor



Saneea Almas, M.D. Instructor



Kevin Barnes, M.D. Assistant Professor



Gordon Bruce, M.D., Ph.D. Associate Professor



Kymberly Gonzalez, M.D. Instructor



Jennifer McConnell, M.D. Assistant Professor



Vicki Moore, D.O. Assistant Professor

New Faculty

We welcomed three new faculty to the Division in 2021.



Kathleen Costello, MD, MPH

Assistant Professor M.D. St. Louis University – School of Medicine, St. Louis, MO, 2015 M.P.H. University of Texas Health Sciences Center, Austin, TX, 2021 Postdoctoral Training Residency, Pediatrics UT Southwestern, 2015 – 2018 Fellowship, Pediatric Emergency Medicine Dell Medical School, UT Austin, Austin, TX, 2018 – 2021 Interests: Anti-human trafficking efforts





Hoi See Tsao, MD, MPH

Assistant Professor M.D. Harvard Medical School, Cambridge, MA, 2015 M.P.H. Brown University School of Public Health, Providence, RI, 2021 Postdoctoral Training Residency, Pediatrics Massachusetts General Hospital for Children, Boston, MA, 2015 – 2018 Fellowship, Pediatric Emergency Medicine Warren Alport Medical School of Brown University, Browidence, PL 201

Warren Alpert Medical School of Brown University, Providence, RI, 2018 – 2021 Interests: Emergency Medical Services



Amy Ziran Zhou, MD, PhD

Assistant Professor M.D. UT Southwestern, 2015 Ph.D. – (Molecular Biophysics) UT Southwestern, 2015 Postdoctoral Training Residency, Pediatrics Icahn School of Medicine at Mount Sinai, New York, NY, 2015 – 2018 Fellowship, Pediatric Emergency Medicine Northwestern University Feinberg School of Medicine, Chicago, IL, 2018 – 2021 Clinical Chief Fellow 2020-2021

Interests: Ultrasound research, Neurological diseases

Pediatric Emergency Medicine Administrative Team



LoAn Pittman, MHA Division Lead



Valerie Jaber Sr Administrative Assistant II



My-Hoai Pham Sr Administrative Assistant I



Kevin Lynch GME Program Coordinator



Honors / Awards / Distinctions

Ngoc Van Horn, MD

• UT Southwestern Pediatric Faculty Excellence in Teaching Award 2021

Jo-Ann Nesiama, MD, MS

• UT Southwestern Program Director of the Year 2021. Awarded by the UT Southwestern GME Office.

Vincent J. Wang, MD, MHA

• Member of the Board of Directors of the Sub-Board of Pediatric Emergency Medicine, American Board of Pediatrics. Joined in 2021

Halim Hennes, MD, MS

• Member of the International Pediatric Association. Dr. Hennes is the sole representative for the United States and Canada. Joined in 2021

Kevin Lynch

- UT Southwestern Program Coordinator of the Year 2021. Awarded by the UT Southwestern GME Office.
- Loyalty Award, DFW Admin Awards 2021

Significant Administrative Appointments

Jo-Ann Nesiama, MD, MS

• Senate member, UT Southwestern Medical Center, Faculty Senate

Pamela Okada, MD

- Elected Medical Staff Representative, Medical Physician at large, Children's Health, Dallas 2021
- Committee member, UT Southwestern Medical Center, Medical School Admissions Committee

Kymberly Gonzalez, MD

Committee member, UT Southwestern Medical Center, Medical School Admissions Committee

Vincent J. Wang, MD, MHA

• Committee member, UT Southwestern Medical Center, Conflict of Interest Committee

Invited Lectures

Mohamed Badawy, MD

- Gary R. Fleisher Pediatric Emergency Medicine Virtual National Grand Rounds, April 2021
 - "Abdominal Trauma in Children." Dr. Badawy gave the inaugural Grand Rounds lecture.
- PEM Rounds, The Hospital for Sick Children (Sickkids), Toronto, Canada. Virtual, May 2021

 "Abdominal Trauma Decision Rules"
- Pediatric Grand Rounds, SUNY Upstate, Golisano's Children's Hospital, Syracuse, NY, Virtual, May 2021
 - "Head Trauma Decision Rules"



Michael Cooper, MD

Pediatrics Grand Rounds, UT Southwestern Medical Center, Dallas, TX, May 2021
 "POCUS Past, Present, and Future"

Sing-Yi Feng, MD

- Pediatrics Grand Rounds, UT Southwestern Medical Center, Dallas, TX, October 2021

 "Classical Music and Toxicology"
- Pediatric Emergency Medicine Fellowship Conference, Yale-New Haven Children's Hospital, New Haven, CT, March 2021
 - "Biological and Chemical Terrorism in Children"
- Pediatric Emergency Medicine Fellowship Conference, University of Kentucky Louisville, Louisville, KY, March 2021

 "Biological and Chemical Terrorism in Children"
 - Texas All-State PEM Fellowship Conference. September 2021
 - "One Pill and One Teaspoon Can Kill a Toddler"
- Pediatric Environmental Health Specialty Unit (PEHSU) Grand Rounds. PEHSU Region 6, Texas Tech University
 - "Lead Toxicity in Children"
- Section on Child Death Review and Prevention Program. 2021 American Academy of Pediatrics National Conference and Exhibition, October 2021
 - Expert Panel Member: "Drug Overdose in Adolescents: Intentional Suicide or Accidental Death"
- Section on Child Death Review and Prevention Program. 2021 AAP National Conference and Exhibition. October 2021
 - "Drug Overdose in Adolescents: Intentional Suicidal or Accidental Death Addiction/overdose and prevention"

Jo-Ann Nesiama, MD, MS

- Driscoll Children's Hospital 28th Annual National Conference. (Virtual), July 2021
 (Manuagement of Example 2014)
 - "Management of Fever in the Pediatric Emergency Department"
 - PEM Fellow Conference, Baylor University/ Texas Children's Hospital, Houston TX. (Virtual), February 2021
 - "Common and Uncommon Pediatric Orthopedic Injuries: Upper Extremity"
- Texas School Nurses Association. December 2021
 - "Miss, Mister, I Can't Breathe: Tackling Respiratory Distress and Anaphylaxis in School Children"

Pamela Okada, MD

•

- OHRP Research Community Forum Breaking Down Barriers: Addressing Challenging Research and Regulations. (Virtual) June 2021
 - *"Community Consultation in DFW: An Opportunity to Learn from our Neighbors"*
 - Pediatric Society of Greater Dallas, Richardson TX, June 2021
 - "COVID-19 Pediatric ED Pandemic Perspective"

Halim Hennes, MD, MS

- Turkish Pediatric Emergency Medicine and Critical Care congress. (Video Conference Presentation) Antalya, Turkey. October 2021
 - "Developing a Research Network"

Vincent J. Wang, MD, MHA

- All Texas PEM Fellow Conference, UTSW, Baylor University, UT Houston, Dell Children's PEM fellowship programs. (Virtual), September 2021.
 - "Job hunting, Interview: How to Make Yourself More Desirable as a Potential Hire"



Conference Presentations

Pediatric Academic Society

(Virtual), April/May 2021

- Nadeem S, Oke O, Filkins L, Badaway M, Park JY, Hennes H. Poster Presentation "Association of Pyuria and Urine Culture Colony count in Young Children"
- Boulos A, Yen K, Field SM, Huang CJ. Poster Presentation "Workplace Violence in the Pediatric Emergency Department"
- **Day C,** Diebel A, Oke O, **Nesiama JO.** Poster Presentation *"Rural versus Urban Pediatric Firearm Injuries: A 10-year Review at a Level 1 Trauma Center"*
- McCall J, Badawy M. Poster Presentation

"Utility of Platelet Indices and Other Inflammatory Markers for The Diagnosis of Acute Appendicitis in Pediatric Patients"

Nishijima D, Adelgais, Chadha K, Chang T, Gaither JB, Harris M, Lerner EB, Leonard JC, Linakis SW, **Lowe G**, Magill CF, Schwartz H, Shah MI, Browne LR. Presidential Plenary *"Impact of Race and Ethnicity on EMS Administration of Opioid Pain Medications for Injured Children"*

PEMQBook Board Review Course 2021

Virtual National Conference, sponsored by PEMQBook, LLC. Parts 2 and 3: January 2021, and February 2021.

Course Co-Directors: Pamela Okada, MD, MS and Craig Huang, MD Course Associate Director: Sing-Yi Feng, MD

January 2021, Session #2:

Halim Hennes, MD, MS

Lecture, "Emergency Medical Services and Transport"

Michael Cooper, MD

Lecture, "Medical Emergencies: Endocrinology"

Michael Baldovsky, MD

Lecture, "Psychosocial Emergencies"

Susan Scott, MD

Lecture, "Medical Emergencies: Infectious Diseases Part 1"

February 2021, Session #3:

Kenneth Yen, MD

Lecture, "Research Methods and Epidemiology I"

Jo-Ann Nesiama, MD

Lecture, "Research Methods and Epidemiology II"

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Beatrix Bansal, MD

Lecture, "Medical Emergencies: Technology Dependent Patients"

Sing-Yi Feng, MD

Lecture, "Weapons of Mass Destruction"

Susan Scott, MD

Lecture, "Medical Emergencies: Infectious Diseases Part 2"

David Rodriguez, MD

Lecture, "Medical Emergencies: Transplant Medicine"

Other Conferences

Harris MI, Linakis SW, Magill CF, Brazauskas R, Shah MI, Nishijima DK, Lowe GS, Chadha K, Chang TP, Lerner EB, Adelgais KM, Leonard JC, Schwartz HP, Gaither JB, Browne LR

SAEM Virtual Annual Meeting, May 2021. Poster Presentation "Impact of Race and Ethnicity on EMS Administration of Opioid Pain Medications for Injured Children."

Education and Training

The Division of Pediatric Emergency Medicine is a national leader in education. The Division continued its core efforts and introduced two new initiatives in 2021. Collaborating with Division Chiefs from three other centers, the *Gary R. Fleisher Pediatric Emergency Medcine Virtual National Grand Rounds* was established to be a forum for UTSW, Boston Children's, Nationwide Children's, and the University of Colorado/Denver Children's to share the expertise of their faculty. Similarly, UTSW initiated the *All Texas PEM Fellowship Program* meetings. Led by **Dr. Jo-Ann Nesiama,** the program director for UTSW, all four PEM fellowship programs meet quarterly to share educational lectures and expertise. Each meeting is coordinated by one of the programs, with UTSW leading with the first conference in September 2021. After many years in the role, **Dr. Susan Scott** transitioned the Education Director role to **Dr. Kim Van Horn** in 2021. Dr. Scott continues in her role as Simulation Director.

In 2021, **Dr. Kim Van Horn** received the Faculty Excellence in Teaching Award from the Department of Pediatrics at UTSW. **Dr. Jo-Ann Nesiama** received the Program Director of the Year Award and **Kevin Lynch** won the Program Coordinator of the Year Award, both are from the UTSW GME Office.

The Division of Pediatric Emergency Medicine sponsors "PEM Talks." PEM Talks was originally developed to offer education on various pediatric emergency medicine topics to referring physicians. With the transition to virtual conferences during the COVID-19 pandemic, primary care providers, advanced practice providers, and nurses from all over North Texas are now attending, with attendance recorded from Oklahoma, Georgia, Ohio, Iowa, New Mexico, North Carolina, Massachusetts, and even Ontario, Canada. These talks demonstrate the essential role of the Division of Pediatric Emergency Medicine as an educational leader in North Texas and beyond. Lectures are given from the media studio at Children's Health, Dallas. **Dr. Pamela Okada** continues to direct these conferences, and she invites lecturers based on needs in the community. Most lectures are given by UTSW faculty, such as Drs. Jeff Kahn and Kenneth Lee in 2021. PEM Talks lectures given by the faculty from the Division of Pediatric Emergency Medicine at UTSW are as follows (see complete list):

Craig Huang, MD Kalpesh Patel, MD Beatrix Bansal, MD Amy Cheng, MD January 2021 February 2021 March 2021 October 2021 Man's Best Friend, but not a Child's? Pediatric Dog Bite Injuries Suturing Techniques Part II Complex kiddos and their devices. Can an ER visit be avoided? Pneumonia



CONTINUING MEDICAL EDUCATION



12 - 1:00 p.m.

To Register and for more information please visit www.childrens.com/learn

Sessions will be held via live web broadcasts.

2021 DATES	торіс	SPEAKER	
1.20.2021	Man's Best Friend, but not a Child's? Pediatric Dog Bite Injuries	Craig Huang, MD	
2.3.2021	Suturing Techniques Part II	Kalpesh Patel, MD	
2.17.2021	Rescheduled		
3.3.2021	Complex kiddos and their devices. Can an ER visit be avoided?	Beatrix Bansal, MD	
3.17.2021	Addiction – Opioids – What can we do? (Ethics and Opioid)*	Kurt Kleinschmidt, MD	
4.7.2021	Introduction to Transgender Care in the ED and Medical Home	Jason Jarin, MD	
04.28.2021	Appendicitis in the 21st century - Managing an Old Disease in Young People.	Nathalie Brewer, MD	
5.5.2021	Airway, Bleeding, Can't Hear: The ABC's of ENT Emergencies	Kenneth Lee, MD	
6.2.2021	Pediatric Coarctation of the Aorta	Chioma Duru, MD	
6.16.2021	The Opioid Crisis: An Update (Ethics and Opioid)	Alan Farrow-Gillespie, Mi	
7.7.2021	Back Pain: When Should I Be Worried?	William Morris, MD	
7.21.2021	Implicit Bias in Pediatric Emergency Medicine - How It Affects the Health of Our Patients?*	Ava Pierce, MD	
8.4.2021	Pediatric Sleep 101: OSA and Beyond	Michelle Caraballo, MD	
9.1.2021	HOT TOPICS in Pediatric Sports Medicine	Jacob Jones, MD	
10.6.2021	Pediatric and Adolescent Gynecology	Jason Jarin, MD	
10.20.2021	COVID 19 Update - Trends, Vaccines, New Challenges	Jeffrey Khan, MD	
10.27.2021	Pneumonia	Amy Cheng, MD	
11.17.2021	Asthma Guidelines: Impact on Urgent Care and Emergency Medicine Management of Asthma	Folashade Afolabi, MD	

In 2020 and 2021, the faculty members from the Division of Pediatric Emergency Medicine sponsored the 4th National Pediatric Emergency Medicine Question Review Book Board Review Conference, which is the largest PEM board review conference in the country. Through this conference, led by **Drs. Pamela Okada, Craig Huang,** and **Sing-Yi Feng**, faculty at UTSW helped teach the newest Pediatric Emergency Medicine attending physicians to pass the American Board of Pediatrics Pediatric Emergency Medicine Board certification examination. See the list of UTSW speakers in the Conference Presentation section of this report. The last three national conferences were held live and in person in 2015, 2017, and 2019. As with most conferences this year, the course was held virtually, and had the highest attendance ever, with 115 participants attending from throughout the country, from the West Coast to New England to Florida. The typical three-day course was divided into one-day sessions in December 2020, January 2021, and February 2021. This course also boasted having the highest pass rate for attendees compared to previous years. In addition, the latest edition of the Pediatric Emergency Medicine Question Review Book is included in the curriculum of many PEM fellowship programs (<u>http://www.pemgbook.com/pemgbook 2017</u>). The book's lead editor is **Dr. Vincent J. Wang.** The next edition is in preparation, and the lead editors are **Drs. Sing-Yi Feng** and **Craig Huang**, joined by Dr. Neil Uspal from Seattle. Numerous faculty members in the Division of PEM are authors, as well as authors from throughout the country.

In collaboration with the Division of Pediatric Radiology, the ED continues holding semi-weekly joint ED-Radiology conferences, reviewing interesting recent cases and topics. Attendings, fellows, residents, and medical students are encouraged to attend this focused educational conference. **Dr. Mohamed Badawy** leads the PEM effort.



Continuing in 2021, monthly didactic series entitled "Core PEM Conferences" focused on completing the Pediatric Emergency Medicine clinical lecture curriculum over two years. The topics are also of relevance to the UTSW Emergency Medicine faculty, who work shifts at Children's Medical Center, as well as the advanced practice providers in the ED.

The Division provides additional ongoing educational opportunities for medical students, residents, and advanced practice providers, in addition to its fully accredited fellowship program. Education is a group effort with multiple contributors, and includes other didactic lectures covering various topics in PEM, simulation labs for enhancing clinical and procedural skills, small group discussions, and bedside teaching in the ED.

Medical Students

The Pediatric Emergency Medicine 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 provides in-depth exposure to Pediatric Emergency Medicine through recognition, evaluation, and management of the acutely ill and injured child. **Dr. Kymberly Gonzalez**, graduate of UTSW Medical Center and UTSW Pediatrics leads medical student efforts, with the support of **Drs. Kim Van Horn, Jennifer McConnell, Vicki Moore, Gordon Bruce, Kayleigh McBride** and many others in the Division. Highlights include:

- Second and third-year medical students' experiences are a combination of shadowing and direct patient management, including multiple case history and physical examination presentations on patients in the ED, directly supervised by attending physicians.
- Second and third-year medical students were issued a "passport" to guide and document their experience in the pediatric ED. The passport is similar to a travel passport with the various patient experiences documented in the booklet.
- Fourth year medical students' clerkship experiences were divided between the moderate and higher acuity areas. Previously guided by the senior pediatric resident, the students directly present to the attending physician on the high acuity team.

Residents

Major internal educational activities include didactic lectures for the Pediatric, Family Medicine and Emergency Medicine residents. Training in the emergency department is often sought by residents from other pediatric training programs in Texas and Oklahoma.

The objectives of the rotation and the educational efforts are to:

- Recognize, evaluate, and manage acutely ill and injured pediatric patients
- Evaluate and manage common pediatric complaints and disease processes
- Master technical skills, including lumbar puncture, laceration repair, fracture care and splinting, foreign body removal, and incision and drainage
- Acquire and maintain efficiency and prioritization required to care for multiple patients simultaneously
- Focus on proficiency in the core competencies: common complaints, disease processes, and technical skills

Education opportunities include:

- Pediatric Emergency Medicine lectures at residents' conferences (variable over the year)
- Weekly didactic lectures on various Pediatric Emergency Medicine topics (every Monday and Friday)
- Pediatric Emergency Medicine Core Lectures (2nd Wednesdays)
- Joint Emergency Medicine-Radiology Conferences (every Tuesday and Thursday)
- Participation at Pediatric Emergency Medicine Fellows' Meetings (every Wednesday)
- Bedside teaching on the diverse patient population



A new Emergency Medicine residency program from Baylor University Medical Center began sending their residents in 2021, with plans to expand send their residents all three years of their training.

Fellows

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

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, along with one of the Research Directors.

The Division currently has 12 full-time fellows, each with diverse research and administrative interests.



Manju Korrattiyil, MD 3rd year PEM fellow



Matthias Manuel, MBBS, MPH 3rd year PEM fellow



Kayleigh McBride, MD 3rd year PEM fellow



Lyndsey van der Laan, MD, MPH 3rd year PEM fellow Chief Fellow



Jacqueline Bolt, MD 2nd year PEM fellow Chief Fellow Elect



Ali McLeroy-Wallace, M 2nd year PEM fellow



Noormah Mehmood, MBBS 2nd year PEM fellow



John Shin, MD 2nd year PEM fellow





Chelsea Day, MD 1st year PEM fellow



Igor Kushner, MD 1st year PEM fellow



Jaron Smith, MD 1st year PEM fellow



Julia Thrash, MD 1st year PEM fellow

The fellowship continues to be a competitive fellowship, matching five candidates for the academic year beginning July 2022, attracting candidates from Dallas, Kansas City, Houston (2), and Columbus.

Research Activities

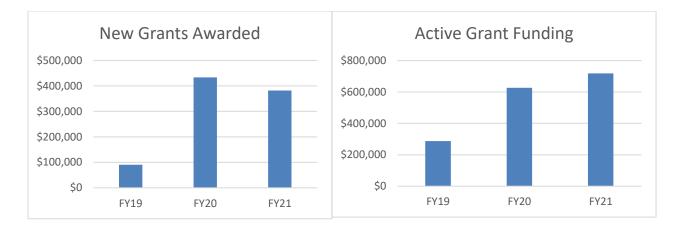
The Division of PEM serves a diverse population with broad pediatric pathology and high acuity, providing an opportune environment for clinical research. The mission of the Division is to conduct state of the art clinical research, with an emphasis on improving the clinical care and outcomes of the acutely ill or injured child. The pillars of the research program in the Division include trauma, EMS/pre-hospital management, pain management, clinical decision rules, respiratory care, and neurologic emergencies.

Because of its rich clinical service and broad research interests, the Division has been routinely selected to participate in multicenter, national, and international level studies. The research team has a proven track record of success by becoming one of the top enrolling sites for numerous multicenter, federally funded studies. In addition, our faculty and fellows currently have eight active prospective (one is funded by Children's Health, one internationally funded study with researchers from Calgary Canada and Australia, and one multicenter study in the USA), four multi-center retrospective Non-PECARN studies, and numerous intramural studies at UTSW.

This is the 3rd year the Division has been a PECARN (the Pediatric Emergency Care Applied Research Network) center. PECARN is a federally funded research network which conducts high-priority multi-institutional research in pediatric emergency medicine. Being selected as a PECARN site is a high honor for the Division. In 2021, there were three active PECARN studies ongoing and one NIH study ongoing. **Dr. Halim Hennes** and **Dr. Mohamed Badawy** continue their vital role as PECARN Site PIs. Dr. Hennes continues to focus on PECARN in his role as Co-Research Director. The primary PECARN grant provides support for a full time research coordinator and 0.1 FTE for the site primary investigator. The PECARN, as part of their mission, offers a mentoring workshop for junior investigators. The workshop objective is to assist young investigators in developing a research project appropriate for future funding. In 2020, **Dr. Michael Cooper** presented a research project on bedside US in the diagnosis of bronchiolitis and is currently working on a pilot study to collect data in preparation for submitting a multicenter project.

New grants awarded increased from \$90,772 in 2019 to \$433,4417 in 2020, and \$382,070 in 2021 as shown in the 1st graph below. Active grants increased from \$287,265 in 2019 to \$626,334 in 2020, and \$718,441 in 2021 as shown in the 2nd graph below:





The research infrastructure includes two full-time research coordinators, five full-time and part-time research assistants (RAs). Research assistant support is present in the Emergency Department 16 hours per day. Research staffing is expected to grow in 2022 with the addition of one full-time and one part-time RA.

The Division's Research Council reviews and oversees all PEM research. The council is led by **Dr. Halim Hennes** and **Dr. Kenneth Yen**, the Co-Research Directors, and is composed of the Division Chief, Research Directors, Fellowship Director, Associate Fellowship Director, Research Coordinator, a member of the Emergency Medicine nursing management and education staff, and select senior PEM faculty. In 2021, we added a junior members: **Amy Zhou**, **MD**, **PhD** and **Matthias Manuel**, **MBBS**, **MPH** to the Research Council. The PEM Research Council's purpose is to review and oversee all PEM research development and implementation, advising faculty interested in initiating research projects in the ED, and guiding the division research Staff in prioritizing implementation. Dr. Kenneth Yen focuses on institution-initiated research in his role as Co-Research Director.

Even with the COVID-19 pandemic, the Division of Pediatric Emergency Medicine continued to grow research efforts, with an increasing number of original research publications over the last several years. In comparison to previous years:

- 2021: the Division published 21 original research publications
- 2020: the Division published 17 original research publications
- 2019: the Division published 15 original research publications
- 2018: the Division published 12 original research publications

Additionally, several case reports, case series, book chapters, and review articles were published last year, but were not counted as the articles heretofore mentioned. See bibliography at the end of this report.

Clinical Activities

Pediatric Emergency Medicine faculty and fellows provide emergency services at Children's Health, Dallas. In 2021, the Division of Pediatric Emergency Medicine continued to serve as the entrance point for Children's Health efforts in the COVID-19 pandemic as the flagship Pediatric Emergency Department in Dallas. The beginning of 2021 began with an unusually slow winter season, but by March 2021, census increased and continued through the end of the year. In the most unusual of years, the summer of 2021 had a high acuity RSV season, even as the ED managed typical summer-time traumatic injuries. Over the course of the pandemic, the ED continued to refine systems and protocols, maintaining flexibility to unusual trends over the course of the year. Administrative demands continued throughout 2021 as typical predictive models weren't helpful. Initiatives were developed with regular improvements over the course of the pandemic. The faculty and nurses in the Emergency Departments have done a spectacular job navigating the unknown and building systems to protect the staff, while still providing the typical, expected emergency care. New challenges arose, as physician and nursing staffing became challenging with a national healthcare worker shortage, followed by quarantines due to infections and exposures by COVID-19 variants.



Dr. Mohamed Badawy serves as the Medical Director of the Dallas campus, and **Drs. Megan Street** and **Michael Baldovsky** serve as Co-Associate Medical Directors, Dallas.

- Our 2021 patient volume was 110,989 patient visits, which was higher than the combined visits of the EDs in Dallas and Plano in 2020.
- The overall ED admission rate was 13.5% (14,982).
 - 58% of all hospital admissions originated from the Emergency Department in 2021.
 - When excluding Fast Track patients, 25% of ED patients are admitted (up from 15.7% in 2020).
 - Among admissions, 9.6% (1,434/14,982) were admitted to one of the intensive care units, reflecting a relatively large number of acutely ill and injured children.

The number of high-acuity/high morbidity patients, remained disproportionately higher in Dallas, as the lower acuity patients was lower compared to the higher acuity patients:

- Deaths in the ED: 32 (27 in 2019, 18% increase)
- Emergency Severity Index (triage index)
 - ESI 4/5 (lower acuity):
 - 51,201 in 2021 (46% of all patients)
 - 32,122 in 2020 (42% of all patients)
 - 66,886 in 2019 (51% of all patients)
 - ESI 1/2/3 (higher acuity):
 - 58,982 in 2021 (53% of all patients)
 - 43,089 in 2020 (58% of all patients)
 - 63,483 in 2019 (49% of all patients)

The Dallas ED is the only Level 1 pediatric trauma center in North Texas, and pre-COVID, it was one of the busiest pediatric emergency medicine clinical services in the country. Comparative 2020 data are not available at this point in time. We also provide emergency care for a variety of complex problems in children with special health care needs.

One pediatric emergency medicine faculty, **Dr. Sing-Yi Feng,** is also a board-certified toxicologist. She manages a Lead Poisoning Clinic at Children's Health and provides toxicology consultation service at Children's Health, Parkland Memorial Hospital, and Clements University Hospital.

Patient Statistics

Emergency Medicine patient visits by location by volume and length of stay by year:

Dallas Emergency Department		2019	2020	2021
Annual Volu	ume	130,369	75,210	110,989
ESI 1, 2, 3		62,769	42,980	58,982
ESI 1, 2, 3: N	Median Length of Stay	269	220	270
ESI 4, 5 (low	vest acuity)	66,886	32,122	51,201
ESI 4, 5 Me	dian Length of Stay	188	131	181
Total admis	sions	13,973	10,748	14,982
% of admiss	sions through ED	Not available	56%	58%
Behavioral	Behavioral Health Patients		2,501	3,647
% of tota	Il admissions	2.0%	3.3%	3.3%
Transfers to	a Critical Care Unit	1,254	1,162	1,434
Deaths in th	ne ED	20	27	32
Annual LWE	S	6.8%	0.8%	5.1%

Dallas Emergency Department Trauma Statistics		2018	2019	2020	2021
	Trauma Stat activation	90	90	124	155
	Trauma Alert activation	321	318	350	555
	Trauma Consult	386	365	356	511

1.214

1,185

1,178

1.479

Census increased in 2021, compared to 2020, and closer to 2019 metrics. Admissions were higher in 2021, which reflects higher acuity over the course of the year. This is also supported by a higher number of behavorial health patients, transfers to the critical care units, and deaths. Trauma activations in 2021 were substantially higher compared to the previous three years, with more Stat, Alert, and Consult designations, also indicating the higher acuity in 2021.

LWBS is a metric that is dependent on overall census and staffing. In 2020, census dropped and staffing improved relative to census. However, as shown in the table, census returned while staffing was challenged with resignations of faculty, nurses, and other ancillary support within the ED. LWBS increased as a result.

ED Rennovation

Trauma Admission

The Emergency Department at Children's Health, Dallas has undergone a four-year ED renovation, to be completed mid-2022. Due to space constraints, the ED is being renovated while working alongside existing space, rather than completing the ED renovation, and then moving to the new ED. In each of the last two years, the ED has undergone two major phases, and has re-routed patient care to accommodate these changes. As a result of these changes, the ED is currently managing patients in four separate patient care areas, with distance end-to-end for the ED being the length of two football fields, on two different levels, withtwo different patient entrances. The ED staff is managing as best as possible until completion of the ED, projected to be in August 2022.

Telemedicine Program

The TeleER program started in 2015 and has evolved over the past 24 months, especially as pediatric emergency visits dropped across the nation. Consults were decreased in 2020 and 2021.

Current Grant Support

Halim Hennes/Mohamed Badawy

Grantor: EMSC-Network Development Demonstration Project (EMSC-NDDP) Title of Project: PECARN (Pediatric Emergency Care Applied Research Network) Role: Co-investigator Funding: \$138,716 for this year (\$566,750 over 5 years) Dates: 7/2016 – 06/2021

Mohamed Badawy/Kenneth Yen

Grantor: NIH – NICHD Title of Project: Validation of Decision Rules for CT Use in Children with Abdominal or Head Trauma Role: Co-investigators; Site-principal Investigators Funding: \$60,902 for this year Dates: 7/2016 – 08/2021



Michael Baldovsky

Grantor: University of Calgary - Canadian Institutes of Health Research Title of Project: Household Transmission Dynamics and Viral Load among Asymptomatic SARS CoV-2 Infected Children Role: Principal Investigator Funding: The study paid \$140/subject enrolled. 84 patients have been enrolled thus far. Dates: 8/2020 - present

Geoffery Lowe

Grantor: NIH Title of Project: Pediatric Dose Optimization for Seisures in EMS (PediDOSE) Role: Principal Investigator Funding: \$192,879.00 for initial year, \$621,908 total 5 years Dates: 6/2021 – 06/2026

Jeanette Dodson

Grantor: Children's Hospital of Philadelphia NIH-National Inst of Child Hith & Hmn Dev Title of Project: PRagMatic Pediatric Trial of Balanced versus NOrmaL Saline FlUid in Sepsis (PRoMPT BOLUS) Role: Principal Investigator Funding: \$92,667.00 total budget Dates: 9/2021 – 08/20225

Sing-Yi Feng

Grantor: American Academy of Clinical Toxicologists Trainee Research Award Title of Project: Bedside Ultrasound Evaluation and Indicators of Progression in Crotalid Snakebites Role: Co-investigator Funding: \$450 for this year Dates: 08/2019 – 08/2022

Jo-Ann Nesiama/Sing-Yi Feng

Grantor: Texas Higher Education Coordinating Board: Emergency and Trauma Care Education Partnership Program Title of Project: Pediatric Emergency Medicine Fellowship Expansion Role: Project Lead Funding: \$131,466 per year Dates: 5/2016 – 6/2022 – Has been renewed in 2-year increments through 2022

Pamela Okada

Grantor: NIH – National Institute of Neurological Disorders and Stroke; Title of Project: Headache Assessment of Children for Emergent Intracranial Emergencies (HEADACHE) Role: Principal Investigator Funding: \$57,620.87 Dates: 9/2020-6/2022

Grantor: UNIVERSITY OF VIRGINIA - NIH-NATIONAL INST OF NEURO DISORD & STRK ; Title of Project: Established Status Epilepticus Treatment Trial (ESETT) Emergencies (HEADACHE) Role: Principal Investigator Funding: \$20,635 Dates: 3/2019-2/2021



Kenneth Yen

Grantor: NIH:-NICHD 1R01HD091347-01A1 REVISED Title of Project: Development and Testing of a Pediatric Cervical Spine Injury Risk Assessment Tool Role: Co-investigator; Site-principal Investigator Funding: \$45,200 plus start up \$5,000 Dates: 9/2020-12/2021

Grantor: Mission Grant - From Children's Health Title of Project: Pediatric CRI studies Role: Principal Investigator Funding: \$125,000 Dates: 1/2021-Present

Publications

Journals: Original Research

- Abulebda K, Whitfill T, Montgomery EE, Thomas A, Dudas RA, Leung JS, Scherzer DJ, Aebersold M, Van Ittersum WL, Kant S, Walls TA, Sessa AK, Janofsky S, Fenster DB, Kessler DO, Chatfield J, **Okada P**, Arteaga GM, Berg MD, Knight LJ, Keilman A, Makharashvili A, Good G, Bingham L, Mathias EJ, Nagy K, Hamilton MF, Vora S, Mathias K, Auerbach MA, Improving Pediatric Acute Care through Simulation (ImPACTS). <u>Improving Pediatric Readiness in</u> <u>General Emergency Departments: A Prospective Interventional Study</u>. *J Pediatr*. 2021 Mar;230():230-237.e1. PMID:33137316
- Bergmann KR, Arroyo AC, Tessaro MO, Nielson J, Whitcomb V, Madhok M, Yock-Corrales A, Guerrero-Quesada G, Chaudoin L, et al., <u>Diagnostic Accuracy of Point-of-Care Ultrasound for Intussusception: A Multicenter,</u> <u>Noninferiority Study of Paired Diagnostic Tests.</u> Annals of Emergency Medicine. 2021 Nov;78(5):606-615. PMID:34226072
- Cruz AT, Nigrovic LE, Xie J, Mahajan P, Thomson JE, Okada PJ, Uspal NG, Mistry RD, Garro A, Schnadower D, Kulik DM, Curtis SJ, Miller AS, Fleming AH, Lyons TW, Balamuth F, Arms JL, Louie J, Aronson PL, Thompson AD, Ishimine PT, Schmidt SM, Pruitt CM, Shah SS, Grether-Jones KL, Bradin SA, Freedman SB. <u>Predictors of Invasive Herpes</u> <u>Simplex Virus Infection in Young Infants.</u> *Pediatrics.* 2021 Sep;148(3):e2021050052. PMID:34446535
- 4. **Day C,** Diebel A, Oke Oluwaseun, **Nesiama JA.** <u>Rural Versus Urban Pediatric Firearm Injuries: A 10-year Review at a Level 1 Trauma Center</u>. Clinical Medicine Research. 2021 Nov 10(6): 173-179.
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- Garcia IC, Clark RA, Chung DH, Gaines N. <u>Pediatric Subcutaneous Abscess: Still a Clinical Exam-Based Diagnosis and</u> <u>Treatment.</u> *Children (Basel).* 2021 May 14;8(5):392. PMID:34068855
- Goldman RD, Krupik D, Ali S, Mater A, Hall JE, Bone JN, Thompson GC, Yen K, Griffiths MA, Klein A, Klein EJ, Brown JC, Mistry RD, Gelernter R, On Behalf Of The International Covid-Parental Attitude Study Covipas Group. <u>Caregiver</u> <u>Willingness to Vaccinate Their Children against COVID-19 after Adult Vaccine Approval.</u> Int J Environ Res Public Health. 2021 Sep 28;18(19):10224. PMID:34639527



- Harris MI, Adelgais KM, Linakis SW, Magill CF, Brazauskas R, Shah MI, Nishijima DK, Lowe GS, Chadha K, Chang TP, Lerner EB, Leonard JC, Schwartz HP, Gaither JB, Studnek JR, Browne LR. <u>Impact of Prehospital Pain Management on</u> <u>Emergency Department Management of Injured Children</u>. Prehosp Emerg Care. 2021 Dec 22:1-9. PMID: 34734787
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- 10. Lerner EB, **Badawy M**, Cushman JT, Drendel AL, Fumo N, Jones CMC, Shah MN, Gourlay DM. <u>Does Mechanism of</u> <u>Injury Predict Trauma Center Need for Children?</u> *Prehosp Emerg Care*. 2021 Jan-Feb;25(1):95-102. PMID:32119577
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- Lin CY, Xie J, Freedman SB, McKee RS, Schnadower D, Tarr PI, Finkelstein Y, Desai NM, Lane RD, Bergmann KR, Kaplan RL, Hariharan S, Cruz AT, Cohen DM, Dixon A, Ramgopal S, Powell EC, Kilgar J, Michelson KA, Bitzan M, Yen K, Meckler GD, Plint AC, Balamuth F, Bradin S, Gouin S, Kam AJ, Meltzer JA, Hunley TE, Avva U, Porter R, Fein DM, Louie JP, Tarr GAM, Pediatric Emergency Research Canada (PERC) and Pediatric Emergency Medicine Collaborative Research Committee (PEMCRC) STEC Study Group.. <u>Predicting Adverse Outcomes for Shiga Toxin-Producing</u> <u>Escherichia coli Infections in Emergency Departments.</u> *J Pediatr.* 2021 May;232():200-206.e4. PMID:33417918
- 13. Lowe G, Tweed J, Cooper M, Qureshi F, Huang C. <u>Delayed Diagnosis of Injury in Pediatric Trauma Patients at a</u> Level I Trauma Center. J Emerg Med. 2021 May;60(5):583-590. PMID:33487519
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- 20. **Tsao HS,** Gjelsvik A, Sojar S, Amanullah S. <u>Sounding the alarm on sleep: A negative association between inadequate</u> <u>sleep and flourishing.</u> The Journal of Pediatrics. 2021;228:199-207. e193. PMID:32890581
- 21. **Zhou AZ,** Marin JR, Hickey RW, Lam SK, Ramgopal S. <u>Serious diagnoses at revisits in children discharged from the</u> <u>emergency department with back pain.</u> Acad Emerg Med. 2021 Nov;28(11):1299-1307. doi: 10.1111/acem.1433. PMID: 34245643

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- 1. Goldman RD, Bone JN, Gelernter R, Krupik D, Ali S, Mater A, Thompson GC, **Yen K**, Griffiths MA, Klein A, Klein EJ, Mistry RD, Hall JE, Brown JC. <u>National COVID-19 vaccine program progress and parents' willingness to vaccinate their children</u>. *Hum Vaccin Immunother*. 2021 Nov 19;():1/7/2021. PMID:34797754
- van der Laan L, George R, Nesiama JA, Nagler J, Langhan ML, Yen K, Ngo TL, Rose JA, Caglar D, Kant S, Ciener D, Feng SY. <u>Virtual Interviewing for Pediatric Emergency Medicine Fellowship-A National Survey.</u> *Pediatr Emerg Care.* 2021 Oct 4:. PMID:34608060
- 3. **Guiner A, McCall J.** <u>An Incidental Finding of Hepatoblastoma Due to Bleeding After a Fall from Rollerblades</u>. Consultant 360. 2021 May

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- Boulos AK, Long RA. <u>Fussiness and New-Onset Diarrhea for 2 Weeks in a 9-week-old Girl.</u> Pediatr Rev. 2021 Oct;42(10):562-565. PMID:34599056
- 4. Dodson J, Feng SY, Rodriguez D. <u>"That's Not His Regular Formula": A Case of Organophosphate Poisoning in an</u> Infant. Pediatr Emerg Care. 2021 Apr 1;37(4):e206-e209. PMID:31136454
- 5. John A, Bring K, Van Horn NL. Case Study: 8-Year-Old With a Murmur and Hypertension . 2021 Jan. PMID:30020656



- 6. Rickner SS, Feng SY. <u>Hard as Iron: A Case of Delayed Presentation of Severe Iron Toxicity With Diagnostic and</u> <u>Treatment Dilemmas.</u> *Pediatr Emerg Care.* 2021 May 1;37(5):e269-e271. PMID:33903292
- 7. Guiner A. Granato A. Idiopathic Effusive-Constrictive Pericarditis in a Teenager. Consultant 360. 2021 Dec 61(12).
- 8. Van Horn NL, Street M. Infantile Botulism . 2021 Jan. PMID:29630230
- 9. Van Horn NL, Street M. Night Terrors . 2021 Jan. PMID:29630274
- Chow TG, McConnell J, Lee MJ. <u>A 2-year-old girl with periprocedural anaphylaxis</u>. Allergy Asthma Proc. 2021 Jan 23;42(1):97-99. PMID:33404393
- 11. **McConnell J**, Epperson LC, Eifert F, Aldy K. <u>Oral ulcers in a finger-sucking child after cutaneous wart therapy</u>. *Pediatr Dermatol.* 2021 Nov;38(6):1583-1585. PMID:34647338
- 12. Wisbeck AW, Field SM, **Cooper MC**. <u>Diagnosis of a Large Type-A Aortic Dissection Using Point-of-Care Ultrasound</u>. *J Emerg Med*. 2021 Jan;60(1):112-114. PMID:33127265

Book Chapters

- Nesiama, JO. (2021) <u>Pediatric Emergency Medicine Board Review Course Dallas (limited edition)</u> In: Wang VJ, Flood RG, Feng S, Huang CJ (Eds.) *Just the Stats: Statistical and Research Methodology Review for PEMQBOOK 2021* (Chapter 45 pp.11-22)
- Miller R, Tharayil A, Miller B, Morshedi B. (2021) <u>Human Trafficking</u>. In: Cone D, Brice JH, Delbridge TR, Myers JB (Eds.) *Emergency Medical Services Clinical Practice and Systems Oversight Vol 1*, (3rd Ed.) Hoboken, NJ: John & Wiley Sons

