Neonatal-Perinatal Medicine

Division Introduction

UT Southwestern is widely recognized as one of the nation’s leading centers for neonatal–perinatal care, teaching, and research. The Division is dedicated to providing exceptional care for the most critically ill patients and is committed to the training of outstanding physicians and scientists. Through the continued discovery of new knowledge, division faculty and staff strive to help tomorrow’s patients as well as improve outcomes for the vulnerable population for whom we care.

Directed by Rashmin Savani, M.B.Ch.B., the Division of Neonatal-Perinatal Medicine is comprised of a large group of nationally recognized faculty members with expertise in virtually all aspects of modern neonatal-perinatal care and state-of-the-art research.

The Division’s mission is to positively impact the health of neonates in our community, our nation, and worldwide through excellence in patient care, research, and education. That mission is three-fold:

Excellence in Neonatal Care

Through multidisciplinary and family-centered care, we will strive to improve the standard of practice and ensure the highest quality of care to neonates in our hospitals and around the world. We will care for neonates with the highest respect for their precious lives in a compassionate and caring environment and will utilize evidence-based approaches to clinical care that are regularly evaluated and updated.

Leadership in Research

We will pursue new knowledge through high-quality research that explores unanswered questions, as well as tests and refines previously established ideas in neonatal-perinatal care. As global leaders in research, we will work collaboratively inside and outside our institution in order to generate important discoveries that will lead to improvements in the care that is provided for neonates worldwide.

Education of Future Leaders

We will impart knowledge, instill excitement for learning, and translate these into focused areas of research for our neonatal medicine trainees, pediatric residents, and medical students. We will train future leaders in neonatal medicine who will in turn impart the knowledge and values obtained during their training to those with whom they interact during their careers.

In 2015, together with Children’s Health System of Texas, the Division expanded the Level IV NICU to 42 beds, the capacity of the Low Birth Weight Clinic, and TeleNICU services to six sites.
The Division of Neonatal-Perinatal Medicine consists of neonatologists and pediatricians who are committed to providing the highest level of clinical care to the infants they treat, to conducting cutting-edge research, and to the education of postdoctoral trainees. Division faculty’s research interests span a wide range of topics, including pulmonary vascular biology, neonatal resuscitation, and long-term follow-up care.

In 2015 the Division welcomed twelve new faculty members.

Ceya Acun, M.D.
Assistant Professor

M.D.
Ankara University School of Medicine, Ankara, Turkey, 1996

Postdoctoral Training
Residency, Pediatrics
SB Ankara Diskapi Children’s Hospital, Ankara, Turkey, 1997-2001
Residency, Pediatrics
Brown University/Hasbro Children’s Hospital, Providence, RI, 2006-2008
Fellowship, Neonatal Neurology
George Washington University, Washington, DC, 2008-2009
Fellowship, Neonatology
Cincinnati Children’s Hospital, Cincinnati, OH, 2009-2012

Anuradha Agrawal, M.D.
Assistant Professor

M.D.
Krimskyi Medicinskyi Institute, Simferopol, Ukraine, 1998

Postdoctoral Training
Residency, Pediatrics
State University of New York Health Science Center, Brooklyn, NY, 2000-2003

Asya Asghar, M.D.
Assistant Professor

B.A., magna cum laude
University of Alabama, Birmingham, AL, 2003

M.D.
University of Alabama School of Medicine, Birmingham, AL, 2008

Postdoctoral Training
Internship and Residency, Pediatrics
Virginia Commonwealth University, Children’s Hospital of Richmond, VA, 2008-2011
Chief Resident, Pediatrics
Virginia Commonwealth University, Children’s Hospital of Richmond, VA, 2011-2012
Fellowship, Neonatal-Perinatal Medicine
Yale-New Haven Hospital, New Haven, CT, 2012-2015
Jawahar Jagarapu, M.D.
Assistant Professor

M.B.B.S.
Andhra Medical College, Visakhapatnam, India, 2001

Postdoctoral Training
Internship, Pediatrics
King George Hospital, Visakhapatnam, India, 2001-2002
Residency, Pediatrics and Registrar (MRCPCH)
Royal College of Pediatrics and Child Health, United Kingdom, 2003-2009
Residency, Pediatrics
Driscoll Children’s Hospital, Corpus Christi, TX, 2009-2011
Chief Resident, Pediatrics
Driscoll Children’s Hospital, Corpus Christi, TX, 2011-2012
Fellowship, Neonatal-Perinatal Medicine
University of Miami, FL, 2012-2015

Kathryn A. Johnson, M.D.
Assistant Professor

B.S.
University of California, Santa Barbara, CA, 2001

M.D.
University of California, San Francisco, CA, 2005

Postdoctoral Training
Internship and Residency, Pediatrics
University of California, San Francisco, CA, 2005-2008

Michelle Kao, M.D.
Assistant Professor

B.S.
University of Texas, Austin, TX, 2005

M.D.
UT Southwestern, 2009

Postdoctoral Training
Residency, Pediatrics
University of Arkansas for Medical Sciences/Arkansas Children’s Hospital, Little Rock, AR, 2009-2012
Fellowship, Neonatal-Perinatal Medicine
Baylor College of Medicine/Texas Children’s Hospital, Houston, TX, 2012-2015

Imran N. Mir, M.D.
Assistant Professor

M.B.B.S.
Government Medical College, Srinagar, India, 2003

Postdoctoral Training
Internship
Government Medical College, Srinagar, India, 2004
Residency, Internal Medicine
Paras Hospitals, Gurgaon, India, 2004-2007
Residency, Pediatrics
University of Oklahoma, Oklahoma City, OK, 2007-2009
Fellowship, Neonatal-Perinatal Medicine
UT Southwestern, 2012-2015
Jessica H. Morse, M.D.
Assistant Professor

B.A., *cum laude*
Texas Christian University, Fort Worth, TX, 2004

M.D.
UT Health Science Center, Houston, TX, 2011

**Postdoctoral Training**
Residency, Pediatrics
UT Austin, Austin, TX, 2011-2014

Sujir P. Nayak, M.D.
Assistant Professor

M.B.B.S.
Maharashtra University of Health Sciences, Dr. D.Y. Patil Medical College, Mumbai, India, 2003

**Postdoctoral Training**
Residency, Pediatrics
State University of New York, Women and Children’s Hospital, Buffalo, NY, 2007-2010
Fellowship, Neonatal-Perinatal Medicine
Brown University Warren Alpert Medical School, Women and Infants Hospital, Providence, RI, 2010-2013

Eric B. Ortigoza, M.D., M.S.C.R.
Assistant Professor

B.S.
Claflin University, Orangeburg, SC, 2003

M.D. and M.S.C.R.
Medical University of South Carolina, Charleston, SC, 2009

**Postdoctoral Training**
Internship and Residency, Pediatrics
Medical College of Georgia, Augusta, GA, 2009-2012
Fellowship, Neonatal-Perinatal Medicine

Abigail M. Patterson, M.D.
Assistant Professor

B.S., *summa cum laude*
Loyola University, Chicago, IL, 2008

M.D.
University of Wisconsin School of Medicine and Public Health, Madison, WI, 2012

**Postdoctoral Training**
Residency, Pediatrics
UT Southwestern/Children’s, 2012-2015
Neonatal-Perinatal Medicine

Nassir A. Raoof, D.O.
Assistant Professor

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<tr>
<th>Education</th>
<th>Location</th>
<th>Year</th>
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<tr>
<td>B.S.</td>
<td>University of California, Riverside, CA</td>
<td>2001</td>
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<tr>
<td>D.O.</td>
<td>Des Moines University College of Osteopathic, Des Moines, IA</td>
<td>2008</td>
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Postdoctoral Training

- Internship, Osteopathic: Henry Ford Macomb Hospital, Warren, MI 2008-2009
- Residency, Pediatrics: University of Illinois College of Medicine, Children’s Hospital of Illinois at OSF St. Francis Medical Center, Peoria, IL 2009-2012
- Fellowship, Neonatal-Perinatal Medicine: University of Louisville, Kosair Children’s Hospital, Louisville, KY 2012-2015

Honors / Awards

2015 Faculty Promotions

- Timothy Brannon, Associate Professor
- Becky Ennis, Associate Professor
- Myra Wyckoff, Professor

Lina Chalak

- Elected to the Perinatal Research Society and successful in getting 2016 SPR Topic Symposium accepted as Chair

Vishal Kapadia

- Elected to NRP Steering Committee
- Graduated from the Clinical Scholars Program with a Masters in Clinical Science

Nandeesh Rangaswamy

- Appointed to the AAP Council of Quality Improvement and Patient Safety Nomination Committee
- Selected for the AAP Young Physician Leadership Program

Rashmin Savani

- Texas Super Doctor, Texas Monthly Magazine

Shawndip Sen (Fellow)

- Selected for the AAP Young Physician Leadership Program

Preethi Srinivasakumar

- Selected for the AAP Young Physician Leadership Program

Myra Wyckoff

- Chair, International Liaison Committee on Resuscitation (ILCOR)

TeleNICU was named one of the Elite 100 Information Technology Innovations by Information Week.
Invited Lectures

Lina Chalak

- Invited Symposium, Pediatric Academic Societies Meeting, San Diego, CA, April 2015
  - “Inflammatory Biomarkers of Neonatal Brain Injury”
- XXIV Biennial Meeting, International Perinatal Collegium, Napa, CA, July 2015
  - “Stratifying the Severity of HIE: Neuronal Biomarkers”
- Scott & White Annual Neonatal Conference (SWAN), Temple, TX, September 2015
  - “Risk Factors, Clinical Aspects and Biomarkers of Neonatal Encephalopathy”
- 24th Annual Amazing Newborns Conference, Albuquerque, NM, November 2015
  - “Rural to Referral: Seamless Care”
- Hypothermia AEEO Workshop, Full Throttle Neonatal Therapeutic Hypothermia Workshops, American University of Beirut, Lebanon, December 2015
  - “Initiating a Complete Hypothermia Program”
  - “Using Amplitude Integrated EEG”
  - “Starting a Neuro-NICU Program”
- Grand Rounds, American University of Beirut, Lebanon, December 2015

Mackenzie Frost

- Workshop, Association of Pediatric Program Directors Spring Meeting, Orlando, FL, April 2015
  - “Going the Extra MILE in your Quality Improvement Curriculum: Integrating QI Assessment Tools and the Pediatric Milestones”
- Workshops, Pediatric Academic Society, San Diego, CA, April 2015
  - “Making your Quality Improvement Effort Count Twice! Designing and Executing your Improvement Project as Scholarly Activity”
  - “Are You Lean? Equip Yourself: Enhancing Quality and Improving Processes with LEAN Methodologies!”

Natalie Frost

- Neonatal-Perinatal Medicine Faculty, PREP The Course, American Academy of Pediatrics, San Antonio, TX, February 2015 and Atlanta, GA, September 2015
  - “Fetus in Newborn”
- Physician Champion Neonatal Donation, Cytonet Donation Webinar, Southwest Transplant Alliance, Dallas, TX, September 2015
  - Co-Presenter: “Offering Hope: Neonate Organ, Tissue, and Research Opportunities”

Roy Heyne

- University of Dallas, Dallas, TX, April and November 2015
  - “Ethical Ramifications of Human Embryology and Fetal Development”
- Catholic Physicians Guild, Dallas, TX, June 2015
  - “Neonatal Ethics: Life and Death Decisions”
- UT Southwestern St. Basil Society, Dallas, TX, September 2015
  - “Neonatal Ethics: Life and Death Decisions”
- Texas Scottish Rite Hospital Journal Club, Dallas, TX, November 2015
  - “BSIDIII Cutoffs for Neurodevelopmental Impairment”
Mambarambath Jaleel

- McLane Children’s Hospital, Scott & White, Temple, TX, September 2015
  - Moderator: “Respiratory Care Session, SWAN Conference”
    Speakers: Richard Polin, Steve Welty, Dan Stewart

Vishal Kapadia

- 4th Neonatal Resuscitation Research Workshop, San Diego, CA, April 2015
  - “Oxygen Use in the Delivery Room and Neurodevelopmental Outcomes in Preterm Neonates”

- Neonatal Resuscitation Program (NRP), AAP/AHA, Current Issues Seminar, Washington, DC, October 2015
  - “Chest Compression in Neonatal Cardiopulmonary Resuscitation”

Imram Mir

- Video Conference Lecture, International Neuroplacentology Group, December 2015
  - “Placental Pathology and Neurodevelopmental Outcomes in Neonates with Encephalopathy”

Charles Rosenfeld

- Grand Rounds, Department of OB/GYN, University of California, Irvine, CA, September 2015
  - “Perinatal Hypoxia: Role of Pressors in Women with Hypotension – Lab to Bedside”

- Department of Pediatrics, Orange County Children’s Hospital, University of California, Irvine, CA, September 2015
  - “Use and Validation of the Neutrophil Reference Ranges in Excluding the Diagnosis of Early-Onset Neonatal Sepsis”

Rashmin Savani

- Invited Speaker, 9th International Conference on Hyaluronan, Florence, Italy, June 2015
  - “HA in Inflammation and Signaling”

- Invited Speaker, XXIV Biennial Meeting, International Perinatal Collegium, Napa, CA, July 2015
  - “CD44 is Necessary for Increased Lung IL1B/TGFB and Decreased Alveolarization of Mice Exposed to Neonatal Hyperoxia and is Elevated in Preterm Infants with BPD”

- Invited Speaker, Federation of European Biochemistry Societies, 5th Advanced Lecture Course, Rhodes, Greece, September 2015
  - “Molecular Mechanism of RHAMM Activation of Src Kinase and the Signaling Pathway for Nitric Oxide Production in the Endothelium”

- Invited Speaker, Grand Rounds, Department of Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN, November 2015
  - “Hyaluronan and its Receptor RHAMM in Acute Lung Injury”

- Visiting Professor, Department of Pediatrics, Division of Neonatal-Perinatal Medicine, University of Alabama, Birmingham, AL, December 2015
  - “The NLFP3 Inflammasome and Bronchopulmonary Dysplasia”

Jack Seidel

- Greater Texas Chapter NAPNAP, Pharmville Conference, September 2015
  - “Adolescent Immunization Update”
Elizabeth "Kaili" Stehel

- Southwest Regional WIC Directors’ Meeting: WIC Super Heroes, Dallas, TX, April 2015
  - “Bridging the Gap Between Hospital and Community”
- Prenatal Education (Organized by the University of Oklahoma Health Science Center Obstetrics and Gynecology Residency Program), Fort Worth, TX, April 2015
  - “Breastfeeding: A Call to Action”
- TMA Representative, Texas Hospital Summit, San Antonio and Dallas, TX, June 2015
  - “Improving Infant Feeding, Advancing Maternity Care Practice”
- Texas Department of State Health Services & National Institute for Children’s Health Quality, Dallas, TX, June 2015
  - “Breastfeeding Support: Health Care Quality and Performance”

Myra Wyckoff

- International Liaison Committee on Resuscitation (ILCOR) C2015 Conference, Dallas, TX, February 2015
  - “Evidence for Use of Oxygen During Neonatal CPR”
  - “Evidence for Compression to Ventilation Ratios During Neonatal CPR”
- 4th Neonatal Resuscitation Research Workshop (Sponsored by the Monash University, Melbourne, Australia), San Diego, CA, May 2015
  - “Use and Efficacy of Lower Versus Higher Endotracheal epinephrine During Neonatal Cardiopulmonary Resuscitation in the Delivery Room”
- 2nd Neonatal Resuscitation Symposium, University of Alberta, Edmonton Canada, September 2015
  - “The Asphyxic, Bradycardic, and Apneic Infant: What Should We Do?”
  - “The International Liaison Committee on Resuscitation (ILCOR) Process for Evidence Based Review and the Role of Public Comment”
  - “Your Scenario Begins Now: Case Demonstration of the New Science”
- 39th Miami Neonatology Annual International Conference, University of Miami, Miami Beach, FL, November 2015
  - “Delivery Room Management – The Golden Minutes”
  - “Use of Monitoring in the Delivery Room”
  - “2015 New Neonatal Resuscitation Guidelines”
- Pediatrix Neonatology Group, San Antonio, TX, November 2015
- Hot Topics, Washington, DC, December 2015
  - “Highlights of the New Recommendations for Neonatal Resuscitation”

Oral & Poster Presentations

Pediatric Academic Societies Meeting (San Diego, CA, April 2015)

Platform Presentations

Chalak, LF

- "Biomarkers of Developmental Brain Injury: Cytokines and Other Inflammatory Mediators in Neonatal Encephalopathy"

Jagarapu J, Vaidya R, Chen S, Young K, Wu S

- "Pirfenidone Prevents Hyperoxia-induced Lung Injury in Neonatal Rats"

Vaidya R, Hummler J, Jagarapu J, Chen S, Young K, Wu S

- "Targeting GSK-3beta to Prevent Experimental BPD"
Poster Presentations


- “Decreasing Blood Culture Contamination with Coagulase-Negative Staphylococcus (CoNS) in the NICU: A Quality Improvement Project”

Chalak, LF

- “Cerebral Hemodynamics in Newborns with Encephalopathy during Hypothermia: Unexpected Findings from Multiple-Time-Scale Analysis of Cerebral Autoregulation”

Frost M

- “Using QI Methodologies To Improve Compliance with ACGME Requirements: Increasing Completed Parent Evaluations in a Neonatal Fellowship Program”
- “Prevention of Unplanned Extubations in Neonates Through Process Standardization”

Frost M, Wilder K, Miller L, Milano F

- “Preventing Unplanned Extubation in a Level IV Neonatal ICU: A Journey To ZERO”

Kapadia V, Ofman G, Savani RC, Heyne R, Wyckoff MH

- “Delivery Room (DR) Resuscitation Using 2011 Neonatal Resuscitation Program (NRP) Oxygen Guidelines and Neurodevelopmental Outcomes in Preterm Neonates”

Ortigoza EB, Neu J

- “Non-Invasive Technologies to Predict Feeding Tolerance in Very Low Birth Weight Newborns”

Sheehan JW, Pritchard MA, Brown S, Heyne RJ, Jaleel MA, Engle WD, Brion LP

- “Withdrawal of Support in Preterm Infants with Periventricular Hemorrhagic Infarction”

Other Conferences

DeVries LD, Jaleel M, Kapadia V, Heyne R, Brion LP

- “Relationship between Pulmonary Hypertension and Outcomes among Infants with Bronchopulmonary Dysplasia Who Undergo Surgery”
  - Platform Presentation, AAP Section on Neonatal-Perinatal Medicine 22nd South Central Conference on Perinatal Research, Austin, TX, October 2015

Kapadia V, Wyckoff MH

- “Oxygen Use in Delivery Room and Neurodevelopmental Outcomes in Preterm Neonates”
  - Platform Presentation, 4th Neonatal Research Workshop, San Diego, CA, April 2015

O’Neill Buck C WM, Brown S, Kapadia V

- “Predicting the Need for Significant Neonatal Resuscitation Following the Delivery of Late Preterm Neonates”
  - Poster Presentation, National Conference and Exhibition, American Academy of Pediatrics, Washington, DC, October 2015


**Ortigoza EB, Neu J**

- “Non-Invasive Technologies to Predict Feeding Tolerance in Very Low Birth Weight Newborns”
  - Platform Presentation, American Academy of Pediatrics, Section on Perinatal Pediatrics, Southeastern Conference on Perinatal Research, Key Largo, FL, February 2015
  - Platform Presentation, American Academy of Pediatrics, Section on Perinatal Pediatrics, South Central Conference on Perinatal Research, Austin, TX, October 2015

**Schneider J**

- “The Patient Is the Future of HIE”
  - Platform Presentation, National Healthcare CMO/CMIO Summit, Atlanta, GA, March 2015
- “Lessons for Argentina from the Health Information Technology Experience of the United States”
  - Platform Presentation, 37th Congreso Argentino de Pediatria, Mendoza, Argentina, September 2015

**Weydig HM, Jaleel MA, Frost M, Brion LP**

- “Parkland QI Bundle: Reducing Mortality and Morbidity in Extremely Low Gestational Age Neonates (ELGANs) at Parkland”
  - Poster Presentation, AAP National Conference and Exhibition, Washington DC, October 2015

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**Education and Training**

The Neonatal–Perinatal Medicine Division provides educational opportunities for medical students and pediatric residents in addition to our fully accredited fellowship program. Our goal is to impart knowledge, instill excitement for learning, and translate questions into focused areas of research.

**Third-Year Medical Students**

During their pediatrics rotation at UT Southwestern Medical Center, third-year medical students spend time in the Newborn Nursery at Parkland Memorial Hospital.

**Fourth-Year Medical Students**

Students in their fourth year at UT Southwestern may elect to spend time in the Newborn Nursery or the Neonatal Intensive Care Units at Parkland Memorial Hospital and Children’s Medical Center.

**Residents**

The design of the Pediatric Residency Program at UT Southwestern and Children’s Medical Center allows for exposure to Neonatal/Perinatal Medicine services at Parkland Memorial Hospital and elective exposure at Children’s throughout the three-year training program.

**Elective Rotations for Pediatric Residents from External Programs**

The Division offers the following elective rotations to residents from other programs:

- Children’s Neonatal Intensive Care Unit
- Parkland Neonatal Intensive Care Unit
- Parkland Newborn Nursery
- Children’s Low Birth Weight Clinic
- Research
Fellows

Vision - We envision that our graduates will positively impact the health of neonates through their leadership, research, and excellence in patient care.

Mission - We have three missions:

- **Patient Care**: We will strive to improve the standard of practice and ensure the highest quality of care to neonates in our hospitals and around the world. We will care for neonates with the highest respect for their precious lives in a family-centered, compassionate, and caring environment, and utilizing evidence-based approaches to treatments that are regularly evaluated and updated.

- **Research**: We will pursue new knowledge through high-quality research that explores unanswered questions and tests and refines previously established ideas in developmental biology and neonatal-perinatal care. We will engage in world class clinical, translational, and basic science research, aimed at improving babies’ lives throughout their lifespan. We will work collaboratively within and outside our institution in order to generate important discoveries that will enhance medical practice and inform the medical community and the public of evidence-based approaches to neonatal-perinatal medicine.

- **Education**: We will impart knowledge, instill excitement for learning, and translate and refine questions into focused areas of research for our trainees. We will train future leaders in neonatal medicine, who will work in an academic or private setting and deliver the highest quality care to their patients. We will accomplish this by:
  - Allowing fellows to pursue their interests in a structured manner in order to produce quality research, addressing significant questions in neonatal-perinatal medicine.
  - Promoting a collegial environment that provides ample opportunity for fellows to grow and learn from their own and others’ experiences.

Research Activities

The following are representative of various research activities occurring in the Division of Neonatal-Perinatal Medicine at UT Southwestern Medical Center.

Clinical Research

- **NIH Neonatal Network for Clinical Trials**: The Division of Neonatal-Perinatal Medicine is an active participant in the Neonatal Network clinical studies.
- **Treatment of chorioamnionitis-exposed neonates**: Several alternative diagnostic tests and therapies have been promoted for the neonate whose mother is diagnosed with chorioamnionitis.
- **Follow-up care** for very low birth weight and high-risk infants, including neurodevelopment, chronic disease, and nutrition is part of our ongoing study of these babies.
- **Neonatal resuscitation**: Randomized trials (e.g., temperature control, oxygen delivery, resuscitation educational interventions), observational studies (ETCO2 guidance of CPR, effectiveness of epinephrine dosing), as well as other observational studies using the resuscitation database, which includes detailed information about all resuscitation team calls since 2003.
- **Hypoxic-ischemic encephalopathy**: Mechanism of injury; assessment of new recognition tools such as the amplitude EEG; translational research utilizing a piglet model of asphyxia; optimizing neuro-protection offered by hypothermia; rewarming after hypothermia; cerebrovascular hemodynamic modulation of asphyxiated infants; neuroimaging; neurodevelopment.
- **Studies in the newborn nursery**: Late preterm infants, hypoglycemia, transcutaneous bilirubin, pulse oximetry screening for congenital heart disease.
• **Observational studies using available databases**: Several research studies and quality improvement projects use information from available databases, including: the neonatal resuscitation database (Parkland, see above), the neonatal intensive care unit (NICU) databases at Parkland or Children’s Medical Center (CMC), the NICHD Neonatal Research Network Databases (Generic Database, Follow-up Database, and Moderate Preterm Registry), the Vermont-Oxford Network (Parkland NICU) and the Child Health Neonatal Consortium Database (CMC NICU).

• **Early evidence suggesting potential risk of metabolic syndrome in infancy among very low birth weight infants**: Evidence for abnormal weight-to-length ratio, increased adiposity, glomerular hyperfiltration and high blood pressure in very low birth weight infants followed at the low birth weight clinic.

• **Nutritional and growth studies**: Optimizing Individual Nutrition in Preterm Very Low Birth Weight Infants: Randomized Clinical Trial comparing individualized versus optimized supplementation of human milk; Quality improvement in nutrient administration and linear growth assessment.

• **Weaning CPAP in preterm infants**: randomized study comparing two modes of weaning CPAP: from 5 cm vs. decreasing from 5 to 4 and 3 cm.

### Laboratory Research

- Maternal and fetal cardiovascular physiology and development
- Animal models relating to neonatal resuscitation and gestational hypertension
- Pathogenesis of bronchopulmonary dysplasia/chronic lung disease, and novel therapies
- Molecular basis of vascular disease
- Pulmonary endothelial function, nitric oxide, persistent pulmonary hypertension, and calcium metabolism
- Hyaluronan (Hyaluronic acid) and its role in inflammation and endothelial function
- Probiotics/Commensal organisms and their effects on immune mediators in the developing gut

### Clinical Activities

The Division of Neonatal–Perinatal Medicine has provided care for normal newborns and newborns with complex medical and surgical problems for more than 35 years. Faculty offer clinical services at four distinct institutions with a total of 18,000-20,000 births and 250 NICU beds.

### Parkland Health and Hospital System

- **Neonatal Intensive Care Unit**: Since 1974, the Neonatal Intensive Care Unit (NICU) at Parkland Memorial Hospital has been providing exceptional and comprehensive care to critically ill newborns. This was the first NICU in Dallas County and is the largest Level III unit in the region. Our 98-bed unit averages ~1,400 admissions annually, almost 100 admissions a month. Our staff consists of a collaborative team of physicians, nurses and support staff who are all highly experienced in caring for a wide array of neonatal disorders both medical and surgical. Working closely with our highly skilled colleagues in the maternal-fetal medicine department, we are able to provide exceptional care both before and after birth. This teamwork has resulted in one of the lowest mortality rates in the country.

- **Newborn Nursery**: With more than 12,000 deliveries a year, the newborn nursery at Parkland Hospital is one of the busiest in the country. Under the supervision of pediatric faculty from the Neonatal-Perinatal Division, pediatric residents and pediatric nurse practitioners provide comprehensive care for both term and near-term infants from birth through discharge. Learn more about the Newborn Nursery at Parkland. Parkland’s newborn services is a dedicated site for the CDC Initiative on “Best Fed Beginnings,” a program to encourage exclusive breastfeeding with a goal to obtain “Baby Friendly” designation for the hospital.
• **Labor and Delivery:** We provide a unique and highly trained neonatal resuscitation team that attends more than 300 high-risk deliveries a month and have the capability to deliver cutting-edge delivery room care in even the most complex cases, including EXIT (Ex Utero Intrapartum Treatment) procedures. Under the direction of Myra Wyckoff, M.D., an internationally acclaimed physician in neonatal resuscitation research, the labor and delivery faculty provide a very unique resuscitation rotation for fellows, residents, and medical students, which includes exposure to a computerized patient simulator, participation in resuscitation research, review of the literature, and attendance at high risk deliveries.

**Children’s Health System of Texas**

• **Level IV Neonatal Intensive Care Unit:** The NICU at Children’s combines advanced technology with highly trained healthcare professionals to provide comprehensive care for critically ill newborns. This state of the art, 47-bed NICU opened in 2009 as the premiere referral unit in North Texas. The NICU staff, under the supervision of faculty members from the Division of Neonatal–Perinatal, is experienced in caring for a wide-array of neonatal disorders, both medical and surgical. Through an integrated collaboration between Children’s and an extensive network of pediatric subspecialists from UT Southwestern, this NICU is able to provide exceptional care tailored to the specific needs of each individual patient.

• **Low Birth Weight Clinic (THRIVE at Children’s):** The Low Birth Weight (THRIVE) Clinic provides comprehensive medical and psychosocial treatment through intensive intervention, education, social services, and developmental testing for high-risk infants from birth to age five.

• **The Fetal Evaluation and Treatment Alliance (FETAL) and The Fetal Center:** Established in 2008, this program has grown substantially and culminated in the opening of a dedicated Fetal Center in 2014. FETAL is the only program in North Texas offering a full continuum of specialized care for pregnant women diagnosed with a fetal anomaly. Patient families and their referring providers receive prenatal conferences with a highly specialized multidisciplinary team, all in one location, that brings the expertise of UTSW subspecialists to the affected baby at risk. A personalized approach addresses each in utero diagnosis to determine the best strategy for pregnancy, delivery and continuity of care after birth. Receiving care through the FETAL Center provides access to maternal fetal medicine specialists, a world-renowned neonatal resuscitation team as well as a complete range of pediatric and surgical subspecialists who work together to deliver the highest level of comprehensive care.

• **TeleNICU:** In 2013, in collaboration with Children’s Health, we launched TeleNICU, the state’s first dedicated neonatal telemedicine service and one of the most sophisticated systems of its kind in the US. TeleNICU links specially trained, board-certified UT Southwestern neonatologists at Children’s Health to physicians at other hospitals’ NICUs to consult and assist in the management of the sickest and most fragile infants. Using specialized equipment and secure broadband transmission, our dedicated neonatologists are able to communicate with doctors at other facilities, 24/7. Using two-way, real-time interactive communication, virtual examination of newborns at distant-site NICUs is achieved. Participating hospitals that have Level III NICU nurseries connect with UTSW neonatologists using a mobile equipment cart with medical-quality videoconferencing capabilities, secure data transfer, and digital equipment that permits diagnostic testing. Our physicians are able to use specialized cameras to perform high-definition visual examinations and a high-tech stethoscope to listen to the baby’s heart and lungs. Information Week named TeleNICU as one of the Elite 100 Information Technology Innovations in 2015.

**William P. Clements Jr. University Hospital**

• **Level III NICU:** The William P. Clements Jr. University Hospital features 30 NICU rooms, giving each baby his or her own room, in a space sized to easily accommodate both hospital staff and parents. State of the art neonatal care including mechanical ventilation both conventional and high frequency, inhaled nitric oxide therapy and
outstanding nursing care are provided to fragile infants. Parents can sleep in the room overnight with their newborns – enabling parents to focus on their infant and build bonds that will help the baby grow stronger. Research shows that more parental involvement helps babies with weight gain, breastfeeding, and earlier release from the hospital.

- **Newborn Nursery:** The Labor, Delivery and Recovery rooms combine modern technology with a warm, homelike environment to provide a safe and comfortable experience for mothers and families. Our highly experienced newborn physicians provide state-of-the-art care for the newborn infant. We also have lactation consultants to provide breastfeeding assistance. UT Southwestern Medical Center is a member of the Texas Ten Step Program to improve maternity care practices. Policy development, education of staff, and provision of discharge resources for breastfeeding mothers are key initiatives of the program.

**Southwestern Health Resources – Texas Health Presbyterian Hospital Dallas (THD)**

The UT Southwestern Division of Neonatal-Perinatal Medicine assumed care of the newborn infants in the NICU and Special Care Nursery at THD in September 2015, marking the beginning of Southwestern Health Resources, a close affiliation between UT Southwestern and Texas Health Resources.

- **Level III NICU:** Located on the third floor of the Margo Perot Center at Texas Health Dallas, a 47-bed Level III NICU provides 24-hour comprehensive care to premature, high-risk and ill infants. The self-contained program offers therapies, equipment and an experienced multidisciplinary specialist team that includes UTSW neonatologists, medical subspecialists and surgeons as well as excellent neonatal nurses, respiratory therapists, pharmacists and occupational therapists.

- **Special Care Nursery:** The Special Care Nursery provides specialized services and medical monitoring for infants who have graduated from the NICU but still require additional care. The nursery is staffed by board-certified UT Southwestern neonatologists who and provide around-the-clock expert care for premature and special-needs infants. This 44-bed nursery is the only Level II nursery in the Dallas area that offers private rooms. Parents are able to room with their infants in hotel-like surroundings that include a refrigerator, granite countertops, a flat-screen TV and a private bath, thereby encouraging parents to spend as much time with their babies as possible.

- **THRIVE at THD:** As an extension of the THRIVE program at Children’s, THRIVE at THD skilled developmental specialists and pediatricians provide comprehensive developmental testing for high-risk infants that have graduated from THD and surrounding NICUs.

- **FETAL at THD:** The Fetal Evaluation and Treatment Alliance (FETAL) now provides fetal consultations at the Children’s Health Specialty Center Park Cities located in the Margot Perot Center for Women & Infants at THD. Staffed by UT Southwestern neonatologists, pediatric subspecialists and surgical specialists, this program extends the continuum of specialized care for pregnant women diagnosed with a fetal anomaly.

In September 2015, the Division assumed the neonatal coverage for the Level III NICU and Special Care Nursery, and established FETAL and THRIVE programs at Texas Health Resources Presbyterian Hospital Dallas.
2015 Patient Statistics

**Parkland Health & Hospital System**

<table>
<thead>
<tr>
<th>Births</th>
<th>10,686</th>
</tr>
</thead>
<tbody>
<tr>
<td>NICU Admissions</td>
<td>1,316</td>
</tr>
<tr>
<td>Average Length of Stay</td>
<td>18.4</td>
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</tbody>
</table>

**Children’s Medical Center**

<table>
<thead>
<tr>
<th>Admissions</th>
<th>622</th>
</tr>
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<tbody>
<tr>
<td>Average Length of Stay</td>
<td>17.9</td>
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**William P. Clements Jr. University Hospital**

<table>
<thead>
<tr>
<th>Births</th>
<th>1,808</th>
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<tr>
<td>Admissions</td>
<td>492</td>
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<tr>
<td>Average Length of Stay</td>
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**Texas Health (Presbyterian) Dallas**

<table>
<thead>
<tr>
<th>Births</th>
<th>4,165</th>
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<tr>
<td>Admissions</td>
<td>639</td>
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<td>Average Length of Stay</td>
<td>22</td>
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</table>

**FETAL Program**

<table>
<thead>
<tr>
<th>Referrals</th>
<th>176</th>
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</thead>
<tbody>
<tr>
<td>EXIT Procedures</td>
<td>2</td>
</tr>
</tbody>
</table>

**Current Grant Support**

**Luc Brion**

Grantor: CCRAC  
**Title of Project:** Optimizing Individual Nutrition in Preterm Very Low Birth Weight Infants  
**Role:** Principle Investigator  
**Dates:** 2/11/2015 – 2/10/2017

Grantor: Gerber  
**Title of Project:** Individualizing and Optimizing Nutrition to Prevent Metabolic Syndrome and to Improve Neurodevelopment in Preterm and Small for Gestational Age Infants  
**Role:** Principle Investigator  
**Dates:** 7/01/2015 – 5/31/2016

**Roy Heyne**

Grantor: Children’s Hospital of Philadelphia  
**Title of Project:** Structural Development of Human Fetal Brain  
**Role:** Principle Investigator  
**Dates:** 2/10/2015 – 5/31/2016
Vishal Kapadia

Grantor: American Academy of Pediatrics
Title of Project: Impact of Maternal High Fat Diet on the Gut Microbiota and Th17 Axis in Offspring
Role: Principal Investigator
Dates: 9/01/2015 – 8/31/2017

Julie Mirpuri

Grantor: NIH
Title of Project: Novel Transitional Goal Saturations for Preterm Resuscitation in the Delivery Room: A Randomized Control Trial
Role: Principal Investigator

Myra Wyckoff

Grantor: NIH
Title of Project: NICHD Cooperative Multicenter Neonatal Research Network
Role: Principal Investigator

Grantor: Wayne State
Title of Project: Cooperative Multicenter Network of Neonatal Intensive Care Units
Role: Principal Investigator

Peer-Reviewed Publications


