



Pediatric Simulation Center Annual Report 2018

Celebrating 10 Years of Simulation

In 2018, the Pediatric Simulation Center celebrated its 10th year and 60,000th learner!



Children's
of Alabama®



Pediatric Simulation Center

UAB MEDICINE

PEDIATRICS

Offering Quality Programs

In 2018, the Pediatric Simulation Center taught **6,208 learners** and facilitated **10,572 learner hours of simulation**. Throughout the year, the Center conducted:

- 735 simulation sessions
- 1151 hours of simulation
- 19 Mock Codes / 6 Mock Traumas
- 30 sessions for New Graduate Nurses
- 29 Family Education Simulations
- 26 Neonatal Resuscitation Simulations
- 18 Nursing Orientation Simulations
- 3 Anesthesia Simulations
- 10 Cardiology Simulations
- 9 Newborn Nursery Simulations
- 16 Nursing Vigilance Simulations
- 10 Pediatric Advanced Life Support Simulations
- 8 Continuous Renal Replacement Therapy Simulations
- 10 Extracorporeal Membrane Oxygenation Simulations



Nurses take care of SimMan.

Highlighted Programs:

Pediatric Hospital Medicine First 5 Course

In response to an identified need, we helped design a simulation course focusing on the first five minutes of a code for **hospital medicine fellows and attendings**. Physicians reviewed important resuscitation steps necessary during the first 5 minutes of a code and were able to participate in code simulations using rapid cycle deliberate practice methodology. They also had the opportunity to practice placing intraosseous catheters using eggs and chicken bones.

Cardiovascular ICU Course

CVICU RNs and Respiratory Therapists participated in simulations this year allowing them the opportunity to care for a patient experiencing a pulmonary hypertensive crisis as well as a ventilator dependent patient with a tracheostomy emergency. These simulations gave the participating staff the opportunity to be directly involved in high stakes situations that do not occur regularly in the CVICU, but all should be prepared to manage. Hands on training was provided utilizing pacing wires and an external pacemaker as well as tracheostomy emergencies. Debriefing for scenarios focused on nursing interventions as well as inter-professional communication.



Children's
of Alabama®



UAB MEDICINE

PEDIATRICS

Improving the Care We Provide



Residents listen intently to Dr. Michael Stalvey.

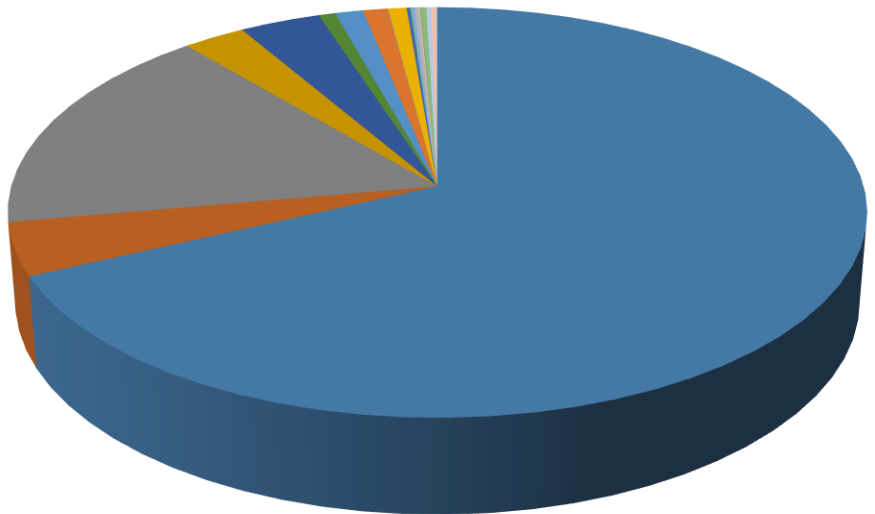
Our **mission** is to integrate simulation throughout the hospital in a structured learning environment to promote excellence in clinical care, patient safety, and education for all pediatric healthcare practitioners and teams.

Our **vision** is to focus on interprofessional education, as well as patient and family education, which furthers the Center's impact and helps ensure safe and quality care for our patients.

- In 2018, we encountered **17** different types of internal (within Children's of Alabama and UAB) learners including patient family members.
- We provided training for **4,305** internal staff members.
- **60** patient family members attended simulation to practice tracheostomy and/or home ventilator emergencies prior to discharge.

Our In-House Learners in 2018*

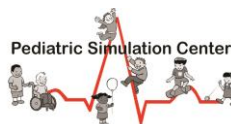
■ RN	(3421)
■ MD	(209)
■ Resident	(835)
■ Respiratory Therapy	(134)
■ Clinical Assistant	(173)
■ Pharmacist	(36)
■ Patient & Family	(60)
■ Radiology Technologist	(52)
■ PT / OT	(2)
■ Chaplain	(2)
■ Pharmacy Technician	(9)
■ Social Work	(2)
■ Ortho Technician	(2)
■ Psych Technician	(12)
■ Speech Pathologist	(10)
■ CRNA	(10)
■ CMA	(3)



*Numbers do not include students.



Children's
of Alabama®



UAB MEDICINE

PEDIATRICS

Educating Future Clinicians



Learners practicing foreign body removal.

In 2018, we educated **1,116** students and conducted:

- **37** medical student simulations
- **9** courses for pharmacy students

In total student learners included:

- 897 medical
- 190 pharmacy
- 15 nursing
- 14 high school

The Center mentored **3** third year medical students during their two month **Scholarly Activity Block** and **16** fourth year medical students during **two and four week Elective Blocks**. We also mentored **4** residents during their elective months.

Each year, we partner with the **Area Health Education Centers (AHEC)** to provide Alabama high school students interested in health care professions a simulation experience. This diverse group comes to us from rural and underserved areas of the state.

Working with Dr. Will Sasser, we conducted 7 hours of simulation for senior medical students during their **Prep for Residency Capstone Course**. Simulations focused on management of pediatric emergencies such as shock, respiratory failure and seizures.

In October, we conducted a week long immersive **Special Topics Course** for second year medical students focusing on hands of patient care skills as well as development of a simulation course.



Learners practicing intubation.



Children's
of Alabama®



UAB MEDICINE

PEDIATRICS

Training Our Staff

All **newly graduated nurses** participate in an exciting 3 sessions of simulation training designed to encourage teamwork, safety, critical thinking and improve physician-nurse communication. This is often their first experience managing patients as RNs. They care for simulated patients with pediatric diagnoses encountered in any care unit such as seizures, respiratory distress, and shock. During the simulation, nurses are expected to identify and utilize resources through medication administration and patient education. Nurses also manage a family with a history of domestic violence, disclosure of a medical error and noncompliance. *"I have really enjoyed the simulation experiences and appreciate all the help and information!"* – Recent New Graduate Nurse

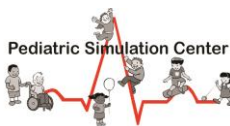
- Simulation is a valuable tool for **clinical remediation for nurses** in the hospital setting. We believe that nurses who are struggling in the clinical setting should be offered remediation with an **individualized learning plan incorporating deliberate practice, feedback, and reflection**. In the simulation center, we meet with individuals to evaluate their needs. Once needs are evaluated, a learning plan is developed by an educator in the simulation center. These plans vary with each individual and **the content is learner-driven**. Simulation based remediation provides a safe, effective, and promising tool to assist struggling medical professionals. Our goal is for nurses to gain the knowledge and/or behaviors necessary to perform competently, safely, and successfully as a professional.



- New clinical assistants** participate in a simulation course that provides exposure to behavioral health safety precautions and focuses on their role as a member of the health care team. Participants engage in customer service and patient care simulations.



Children's
of Alabama®



UAB MEDICINE

PEDIATRICS

Making A Difference

Island Medical Management Emergency Medicine Fellows – Due to a deficit of emergency trained physicians in the state of Alabama, many smaller EDs are staffed by non-emergency medicine trained doctors. In an effort to improve their training, Island Medical Management offers a one year emergency medicine fellowship for physicians who have already completed a primary care residency (mostly family practice). This program is led by Drs. Bruce Burns and Jason Smith. Fellows come from across the country to participate in this unique training program. Fellows are based at EDs across the state including Decatur General, Shelby Baptist, Cullman Regional and Princeton Baptist. All of the EDs are extremely busy and the fellows are well experienced with adult emergencies but their pediatric experience is limited and variable.

In August 2017, in an effort to standardize and improve their pediatric experience, our simulation center partnered with Island Medical Group to help educate these doctors about pediatric emergencies. We offer quarterly sessions focusing on respiratory, neurologic, cardiac and a variety of other pediatric emergencies. This program is in its second year.

One recent graduate emailed Dr. Smith recently to highlight the importance of the addition to pediatric simulation to the fellowship program. She said,

"I was literally petrified before my first "real" ER shift, but I did rock it from day one. One of my first cases was a 6-month old baby in cardiorespiratory arrest and I turned out to be the only person able to handle it intelligently and save the kid's life. Not sure how that would have been possible without the experience at Children's Hospital."



Island Medical Management Emergency Medicine Fellows take care of an infant.



Children's
of Alabama®



UAB MEDICINE
PEDIATRICS

Community Outreach

Children's of Alabama Community Healthcare Education Simulation (COACHES) Program

The Children's of Alabama Community Healthcare Education Simulation (COACHES) Program has continued its mission to improve pediatric care in community hospitals throughout Alabama.

In 2018, the COACHES team travelled over **2700** miles to **15** community hospital emergency departments and pediatric inpatient floors around the state. The team trained over **300 health care staff** using simulation. The program added a second child sized mannequin as well. The mannequin, affectionately named "Caleb", is a new state of the art mannequin that has the capability of allowing for blood draws and can even cry real tears! The addition of this mannequin along with the infant-sized mannequin, "Eloise", will allow the team to educate hospital staff on a wider variety of pediatric illnesses.



Community hospital participants providing care for Eloise and Caleb.



The program continues to be well received by community hospital participants. One physician participating in the program stated, *"This was amazing. **This training will save the life of a child [at our hospital].**"*

A nurse educator at another hospital said, *"One of the most valuable aspects that this program has created is the enhanced relationship with Children's of Alabama. **The COACHES team is always willing to go the extra mile for anything that will improve the care of pediatric patients.** We now have faces to put with the voices on the other end of the call to transfer as well as trusted resources for consults and advice."*

In an effort to expand the impact the program has on improving pediatric care, the team has developed a Pediatric Management Resources binder for community hospitals. This binder consists of **pediatric-specific clinical management resources tailored to community hospital needs**. They have also implemented a process for giving community hospitals they've visited feedback about real patients who were transferred to Children's of Alabama.



Children's
of Alabama®



UAB MEDICINE
PEDIATRICS

Research - Investigating Best Practice

Our team is actively involved in research projects to determine best practice in simulation education including teaching communication skills, clinical skills, and procedural skills.

Current projects include:

- Education and Training on the use of the Epi-Pen
- Newborn emergency training for UAB Mother Baby Unit
- Gastrointestinal Simulations for Residents
- Nutrition Simulations for Residents on their Ward Rotation
- Critical Actions for Nurses during the First Five Minutes of a Code
- Pulmonary Simulations focusing on Smoking Cessation for Family Members
- Rapid Cycle Deliberate Practice training for Fellows and Residents
- Rapid Cycle Deliberate Practice for the Neonatal Resuscitation Program
- Global health history training for Medical Students and Interns
- Neurology Simulations for Residents, Fellows and Nurses
- Continuous Renal Replacement Therapy training for Nurses
- Code Cart Quality Improvement
- Nursing Vigilance Simulations for all Nurses in the hospital
- Primary Care Clinic Simulations for Residents



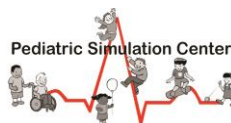
Keep Educating Yourself

The KEY (Keep Educating Yourself) Program has continued to be a success in 2018. Since its inception, **63** nurses have participated in the program. The program, initially designed for nurses new to the critical care environment, has taken on a more multidisciplinary approach in 2018 with the addition of respiratory therapists. The course occurs every other month and consists of 4 scenarios with associated debriefing sessions. Three of the 4 scenarios (septic shock, diabetic ketoacidosis and traumatic brain injury) **focus on standardized disease-specific patient care pathways that were developed with the assistance of the PICU Quality Improvement Council**. The fourth scenario consists of team-focused Pediatric Advanced Life Support training using Rapid Cycle Deliberate Practice. Debriefing for the protocol-based scenarios focuses on **medical management and inter-professional communication**. The program has been well received by participants.

One nurse commented, **"I love KEY! It was super helpful to learn the why behind the things we are doing!"**



Children's
of Alabama®



UAB MEDICINE

PEDIATRICS

Adjunct Faculty

Jennifer Beall, Pharm-D
Kim Benner, Pharm-D
Beth Benton, RN, Hematology/Oncology
David Bernard, MD, Pediatric Emergency Medicine (EM)
Shaundra Blakemore, MD, Pediatric EM
Amy Cameron, RD, Nutrition
Christina Cochran, MD, Pediatric EM
Carl Coghill, MD, Neonatology
Chris Coleman, RN, Sexual Assault Nurse Examiner
Jerry Cox, MD, Pediatric Anesthesiology
Brenda Denson, Pharm-D
Candice Dye, MD, General Pediatrics
Suzanne Gurosky, RN, Renal Care
Leigh Hardy, RD, Nutrition
Megan Hofto, MD, Pediatric Hospital Medicine
Daryl Ingram, RN, Renal Care
DeeAnne Jackson, MD, General Pediatrics
Collin King, MD, Pediatric Anesthesiology
Jeannine Maclin, MD, Pediatric Gastroenterology
Lauren Nassetta, MD, Pediatric Hospital Medicine
Sarah Novara, MD, Pediatric Neurology
Kyla Owen, RN, Pediatric Cardiovascular ICU
Tammy Pope, BSN, RN, RNC, Neonatology
Leslie Rhodes, MD, Pediatric Cardiovascular ICU
Jenny Ross, RN, ECMO
Will Sasser, MD, Pediatric Critical Care
Paul Scalici, MD, Pediatric Hospital Medicine
Donna Slayton, RN, Pediatric Pulmonary
Michael Stalvey, MD, Pediatric Endocrinology
Julie Stone, RN, Pediatric Pulmonary
Shonica Thomas-Bell, Clinical Assistant
Kristen Waddell, CRNP, Pediatric Critical Care
Susan Walley, MD, Pediatric Hospital Medicine
Brandon Weems, Pediatric Pulmonary
Marjorie Lee White, MD, Pediatric EM
Lindy Winter, MD, Neonatology
Mary Worthington, Pharm-D
Megan Yanik, MD, Pediatric Nephrology
Brittany Yeager, RN, Neonatology

Faculty & Staff

Medical Co-Directors

Nancy M. Tofil, MD, MEd
Chrystal Rutledge, MD

Nurse Educators

J. Lynn Zinkan, MPH, RN, CPEN, CHSE
Carrie Norwood, BSN, RN, CPN
Brittany Cameron, MSN, RN
Kandi Wise, BSN, RN

Director, Simulation Research

Stacy Gaither, MSN, RN

Office Manager

Andrea Benz

Pediatric Simulation Fellows

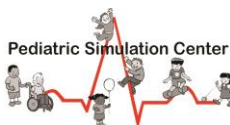
Veronica Godsey, MD, Pediatric Critical Care
Sai Raju, MD, Pediatric Critical Care



Dr. Godsey and Dr. Raju, 2018 Simulation Fellows



Children's
of Alabama®



UAB MEDICINE

PEDIATRICS

Publications / Scholarly Work

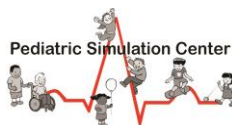
This page and the following pages include publications and select presentations from 2018. For a comprehensive list of our publications and presentations, please visit www.childrensal.org/PediatricSimulationCenter

Manuscripts

1. Chang TP, Doughty C, Mitchell D, **Rutledge C**, Auerbach M, Frisell K, Jani P, Kessler DO, Wolfe H, MacKinnon RJ, Dewan M, Pirie J, Lemke DS, Khattab M, **Tofil NM**, Nagamuthu C, Walsh CM. Leveraging quick response code technology to facilitate simulation-based leaderboard competition. *Simulation in Healthcare*. February 2018.
2. **Rutledge C**, Walsh CM, Swinger N, Auerbach M, Castro D, Dewan M, Khattab M, Rake A, Harwayne-Gidansky I, Raymond TT, Maa T, Chang T; Quality Cardiopulmonary Resuscitation (QCPR) leaderboard investigators of the International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE). Gamification in Action: Theoretical and Practical Considerations for Medical Educators. *Academic Medicine* 93(7). February 2018.
3. **Tofil NM**, **Rutledge C**, Surapa Raju S, **Zinkan JL**, **Norwood C**, **Gaither S**, Eberhardt A. Novel paediatric pericardiocentesis simulator: a collaboration between the Departments of Pediatrics and Biomedical Engineering. *BMJ Simulation and Technology Enhanced Learning* Published Online First: 25 June 2018.
4. **Tofil NM**, Schier S, Benningfield B, Cooper A, Sloane PA, **Zinkan JL**, **Norwood C**, **Wise K**, **Rutledge C**. Tracheostomy education for parents utilizing simulation: a new paradigm in parental education. *J of Pediatric Nursing* 2018;44(3):111-115.
5. Brown LL, Lin Y, **Tofil NM**, Overly F, Duff JP, Bhanji F, Nadkarni VM, Hunt EA, Bragg A, Kessler D, Bank I, Cheng A; International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE) CPR Investigators. Impact of a CPR feedback device on healthcare provider workload during simulated cardiac arrest. *Resuscitation* 130: 111-117. 2018.
6. Cheng A, Duff JP, Kessler D, **Tofil NM**, Davidson J, Lin Y, Chatfield J, Brown LL, Hunt EA; International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE) CPR Investigators. Collaborators (6) Nye M, **Gaither S**, Collier H, MacKinnon L, Lowe K, Lambert V. Optimizing CPR Performance with CPR Coaching for Pediatric Cardiac Arrest: A Randomized Simulation-based Clinical Trial. *Resuscitation*. 2018 Aug 24. pii: S0300-9572(18)30797-4. doi: 10.1016/j.resuscitation.2018.08.021. [Epub ahead of print]



Children's
of Alabama®



Pediatric Simulation Center

UAB MEDICINE

PEDIATRICS

7. Jackson D, Chilukuri P, **Rutledge C, Gaither S**, Sawyer K, et al. Newborn Nursery Emergencies: Simulating the First Five Minutes. *Ann Pediatr Child Health* 2018 6(2): 1145.
8. Walley S, Schaefer S, Tyner T, Walker K, Powell J, Tarn V, Troxler B, Aban I, **Tofil NM**. A Simulation-Enhanced Curriculum to Improve Resident Knowledge and Skills in Smoking Cessation Treatment. *Medical Science Educator* 28(4): 601-607. December 2018.

Oral / Workshop Presentations

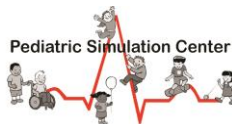
1. Rogers A, Schuh A, Weisgerber M, Renuka M, Blankenburg R, Hilgenberg S, Rassbach C, Yemane L, Collins K, **Tofil NM**, Mangold K, Mirchandani D, Frey-Vogel A, Scott-Vernaglia S, Sparger K. Simediation: The Use Of Simulation In Remediation To Diagnose, Coach, And Assess Struggling Learners. Association of Pediatric Program Directors. Atlanta, Georgia. March 2018.
2. **Norwood C**. Simulation as a Platform to Address Performance Improvement Initiatives. 10th International Pediatric Simulation Symposia and Workshops. Amsterdam, Netherlands. May 2018.
3. **Tofil NM**, Joyner B, **Rutledge C, Zinkan JL, Norwood C, Gaither S**. Mock Code Development – Two programs over 10 years – 10th Annual International Pediatric Simulation Symposia and Workshops, Amsterdam, Netherlands, May 2018.
4. **Cameron B, Norwood C**. Kids- They're Not Just Tiny Adults! The Essentials for Pediatric Simulation. SimGHOSTS. Memphis, Tennessee. July 2018.

Posters

1. **Rutledge C, Schinick VS, Zinkan JL, Norwood C, Gaither S, Wise K, Waddell K, Tofil NM**. Keep educating yourself: a PICU nurse simulation program. Poster Presentation, 10th International Pediatric Simulation Symposium and Workshops, Amsterdam, Netherlands. May 2018.
2. Novara S, Marcus L, McGrath T, **Tofil NM**. Time is Brain for Kids Too: Using Simulation as a Tool in Pediatric Stroke Education. 47th Annual Child Neurology Society Meeting, 2018
3. **Tofil NM**. Pediatric Capillary Refill Simulator. Technology Showcase, Society of Simulation in Healthcare 18th Annual Meeting, Los Angeles, CA 2018.



Children's
of Alabama®



UAB MEDICINE
PEDIATRICS



Sim team holiday gathering

2018 Year in Review



Sim team at the Central Perk set at WB Studios



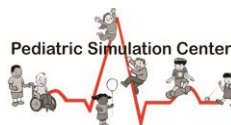
Sim team in Amsterdam at International Pediatric Simulation Conference



11th Annual Christmas Card 2018



Children's
of Alabama®



UAB MEDICINE
PEDIATRICS