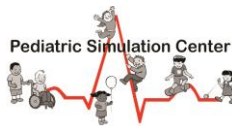




Pediatric Simulation Center Annual Report 2019



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Training for a Pandemic

The 2019 novel coronavirus (**COVID-19**) has greatly impacted healthcare. Preparing for this pandemic and ensuring appropriate safety of staff and patients is of utmost importance. The Pediatric Simulation Center, alongside hospital administration, recognized the need to train staff on providing safe, efficient care of patients under investigation for or testing positive for COVID-19. Training consisted of teaching staff how to appropriately don and doff personal protective equipment (PPE) as well as simulation exercises focused on caring for patients experiencing medical emergencies. To date, **318** physicians, nurse practitioners, nurses, respiratory therapists and ancillary staff have participated in training.



Teaching and debriefing with makes to practice social distancing



Practicing donning and doffing of PPE



In-situ PICU COVID-19 Training



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Offering Quality Programs

In 2019, the Pediatric Simulation Center taught **6,327 learners**. Throughout the year, the Center conducted:

- 851 simulation sessions
- 1242 hours of simulation
- 19 Mock Codes / 5 Mock Traumas
- 28 sessions for new graduate nurses
- 30 family education simulations
- 26 Neonatal Resuscitation simulations
- 16 Nursing Orientation simulations
- 3 Anesthesia simulations
- 9 Cardiology simulations
- 8 Newborn Nursery simulations
- 5 Nursing Vigilance simulations
- 12 Early Assessment, Recognition, and Management of the Pediatric Patient simulations
- 12 Pediatric Advanced Life Support simulations
- 7 Continuous Renal Replacement Therapy simulations
- 10 Extracorporeal Membrane Oxygenation simulations



Employees help a patient get up for Early Mobility simulations

Early Assessment, Recognition, and Management of the Deteriorating Pediatric Patient

This new course was developed and instituted this year to improve outcomes for our pediatric patients and meet the needs of staff who do not routinely care for critically ill children but must have the necessary skills and training to promptly recognize and intervene in the event of an emergency. This American Heart Association-based course prepares providers to use a systematic approach to quickly assess, recognize and provide initial intervention to pediatric patients with respiratory emergencies, shock, and cardiopulmonary arrest.



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Improving the Care We Provide



In-situ mobility simulation participants

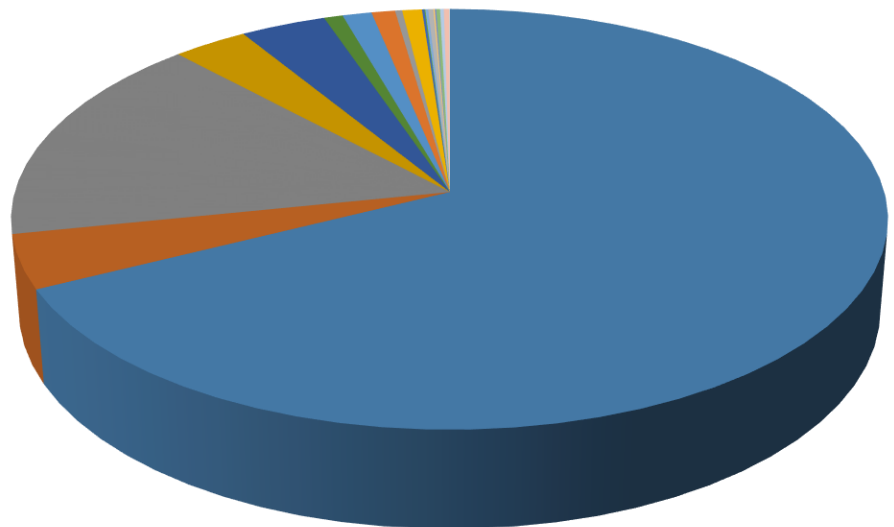
Our **mission** is to integrate simulation throughout the hospital in a structured learning environment to promote excellence in clinical care, patient safety, and education for all pediatric healthcare practitioners and teams.

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 2019, we encountered **17** different types of internal (within Children's of Alabama and UAB) learners including patient family members.
- We provided training for **5086** internal staff members.
- **62** patient **family members** attended simulation to practice **tracheostomy and/or home ventilator emergencies** prior to discharge.

Our In-House Learners in 2019*

- RN (3442)
- MD (211)
- Resident (823)
- Respiratory Therapy (160)
- Clinical Assistant (182)
- Pharmacist (40)
- Patient & Family (62)
- Radiology Technologist (50)
- PT / OT (15)
- Chaplain (2)
- Pharmacy Technician (11)
- Social Work (3)
- Ortho Technician (3)
- Psych Technician (8)
- Speech Pathologist (8)
- CRNA (11)
- CMA (2)



*Numbers do not include students.



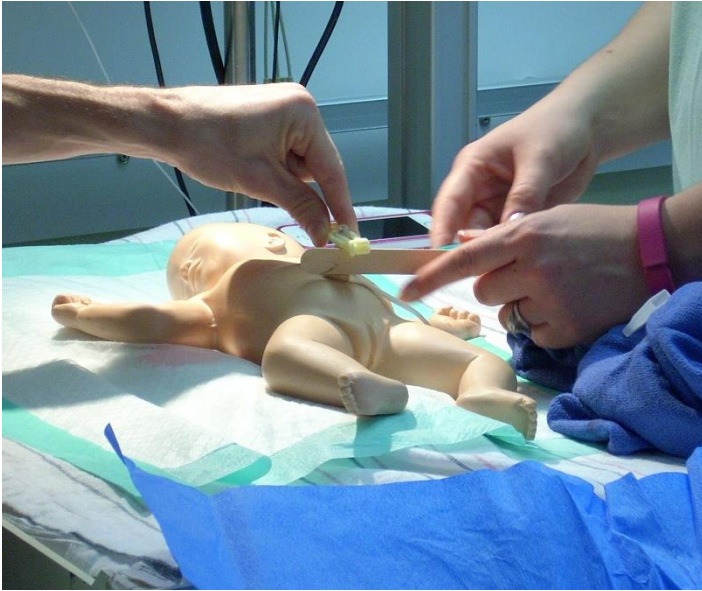
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Educating Future Clinicians



Training on placement of umbilical catheters

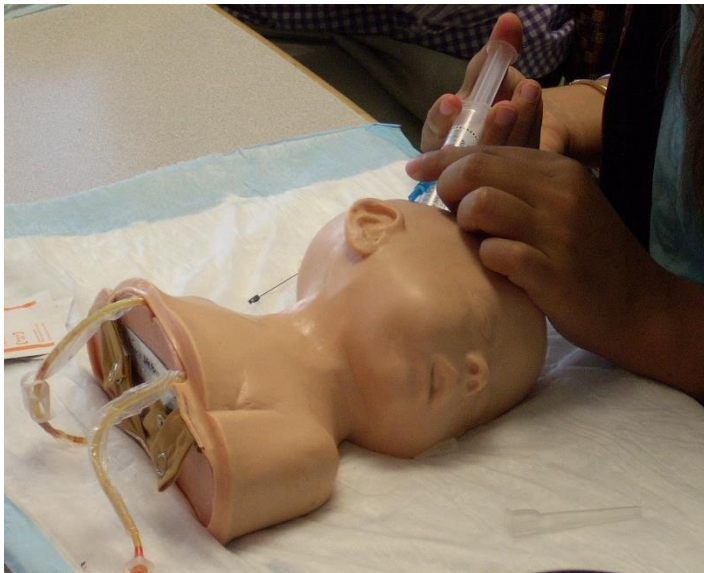
In 2019, we educated **1,241** students and conducted:

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

In total **student learners** included:

- 989 medical
- 221 pharmacy
- 16 nursing
- 15 high school students

The Center mentored **3** third year medical students during their two month **Scholarly Activity Block** and **14** fourth year medical students during **two and four week Elective Blocks**. We also mentored **5** residents during their elective months.

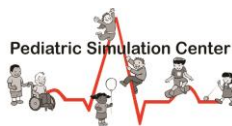


Training on placement of intravenous catheters

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.



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New Children!

In 2019, the **Key Club of Alabama**, a high school student-led service organization, graciously donated **\$150,000** to the simulation center for the **purchase of 2 new simulation manikins**. With these funds we were able to purchase a new child manikin affectionately called **Oliver Daniel** and a new baby manikin, **Matilda Grace**.

Matilda
Grace



Oliver
Daniel



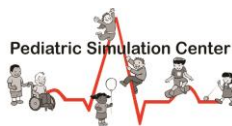
We are excited to debut our newest additions here in the Pediatric Simulation Center. Please welcome our newest (and cordless) friends, Oliver Daniel and Matilda Grace!

Oliver Daniel is our most advanced pediatric friend to date. He makes facial expressions when he is angry, in pain, or excited. He cries tears and sobs when he is hurting. Oliver has capillary refill, a finger to check his blood glucose, and his skin changes to reflect jaundice or poor perfusion. He urinates when he needs to be catheterized or during stressful situations. He loves to turn his head and make eye contact with his caregivers. Oliver's eyes can also dilate and constrict so that learners can check his neurological status. We are so excited to have him, and he is looking forward to his home in the new simulation center!

Mattie is our newest baby. She blinks, cries, and has reactive pupils like her big brother. She has central and distal capillary refill and can move her arms around to let her providers know when she is awake and happy or fussy. Every so often, she gets hepatomegaly from an underlying condition and her learners can feel for her liver. If she needs a fluid bolus or medications, she has a realistic IV in her right arm. We are so excited she has joined our other babies!



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Sim Center Remodel



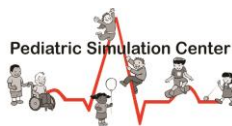
Back wall paneling and instrumentation mirroring actual patient rooms

New Simulation Center Coming Soon

In the early months of 2019, we learned that the third floor of McWane was going to be renovated. In order for this to happen, we temporarily moved to the 6th floor of Dearth Tower in April 2019. Although our space was slightly decreased in size, we were able to obtain a new video system as well as mock headwalls which helps to simulate actual patient rooms. We anticipate moving back to the third floor of McWane in June of 2020. Our new area will be adjacent to the pediatric residency office allowing facilitation of residents attending simulations. In addition, this area will feature a community room replicating a child's home environment. This will be ideal for children going home after newly acquired medical conditions allowing patients and their families to address changes and challenges they may encounter in their transition home. In addition, there will be a room for simulated clinic encounters. The new center will increase our debriefing room size allowing us to run simulation sessions for larger groups of learners. We are very excited for our upcoming move and thank Children's of Alabama for the unwavering support of our center's continued growth. Look for more details about our open house soon!



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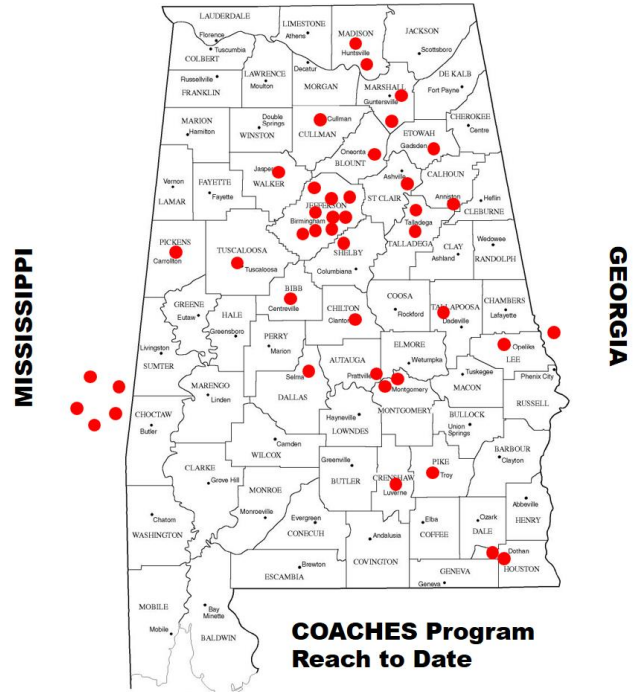
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Community Outreach



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 2019, the COACHES team travelled over **4,000 miles** to **22** community hospital emergency departments and pediatric inpatient floors around the state. The team trained over **300 health care staff** using simulation.

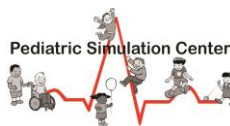


Teaching children CPR

The simulation center participated in the annual **Take a Child and Teen to the Doctor Day** at the Bill Harris Arena at the Birmingham Crossplex hosted by the City of Birmingham Mayor's Office Division of Youth Services. This free annual community event is designed to serve uninsured and under-insured youth up to 18 years old. A number of services were provided to children including free health screenings and free fitness demonstrations. This year, the simulation center along with medical students from UAB School of Medicine, taught CPR to children and parents. The song, *Baby Shark*, was used to teach children the appropriate rate of chest compressions. We had a wonderful time interacting with families in our community during this event!



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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
- Nutrition Simulations for Residents on their Ward Rotation
- 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



Improving Communication through Deliberate Practice

- Health care providers undergo rigorous training to learn to care for patients. Despite all the time dedicated to educating health care providers, there is **not a standardized form of communication** dedicated to teaching health care providers to effectively communicate with each other.
- Unfortunately, there is ample data showing the significant amount of **adverse patient events** that occur because of **miscommunication**.
- In an effort to improve interprofessional communication, we created a **series of simulations** that mirror commonly encountered **difficult situations between physicians and nurses**.
- This curriculum applies the **communication tactics from Verbal Judo** to teach the residents how to handle these difficult situations. *Verbal Judo* has been successfully used throughout the law enforcement community to effectively improve communication between police officers and the public.
- **At retention** follow-ups, residents have expressed **increased comfort** when dealing with difficult situations, specifically situations involving other staff members.



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New to the Sim Center

Seth Perry, BSN, RN, CPN, joined the Pediatric Simulation Center in October. He is originally from Madison, AL and received his Bachelor's of Nursing from Auburn University in 2016. He is currently enrolled in the Master's of Nursing Education program at Auburn University and is expected to graduate May 2021. He started his nursing career at Children's of Alabama on the inpatient behavioral health unit in 2016. He transferred to the pulmonary care unit, 10 Quarterback, in 2017. He spent two years there before transferring to the Simulation Center to begin his career as a nursing educator. Seth enjoys working with new graduate nurses, as well as educating on his previous specialties. His light-hearted approach and sense of humor is a much welcomed addition to the Simulation Center. He enjoys holding a "real-life" baby every now and then and decorating his computer space with reminders of kiddos he's cared for and students he has taught. We're so excited to have him and his energy here in the Simulation Center!

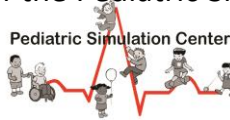


VALT – Our new video system

In alignment with our temporary move to the 6th floor of Dearth Tower, COA worked closely with us to upgrade our video system. After careful review we chose the VALT system by Intelligent Video Solutions. This on-line based system allows us to view simulations from any area that has internet access. Each room is equipped with two cameras allowing for different views of participants. In addition, each room has a microphone allowing observers to watch remotely from the debriefing room in the simulation center. The patient's monitor can also be viewed by observers as well using a picture-in-picture feature. By using picture in picture, observers can see when vital signs change and follow the actions of learners. We are indebted to COA for their support of the Pediatric Simulation Center.



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Faculty & Staff

Adjunct Faculty

Jennifer Beall, Pharm-D
Kim Benner, Pharm-D
Beth Benton, RN, Hematology/Oncology
Shaundra Blakemore, MD, Pediatric EM
Adam Brakefield, RRT, Respiratory Care Services
Christina Cochran, MD, Pediatric Emergency Medicine EM
Carl Coghill, MD, Neonatology
Chris Coleman, RN, Sexual Assault Nurse Examiner
Brenda Denson, Pharm-D
Candice Dye, MD, General Pediatrics
Suzanne Gurosky, RN, Renal Care
Leigh Hardy, RD, Nutrition Services
Sheila Herron, RRT, Pediatric Pulmonary
Megan Hofto, MD, Pediatric Hospital Medicine
Daryl Ingram, RN, Renal Care
DeeAnne Jackson, MD, General Pediatrics
Collin King, MD, Pediatric Anesthesiology
Kayla Clary, RD Nutrition Services
Maria McAtee, MSN, PNP-AC/PC, Cardiovascular Services
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
Mary Lauren Scott, MD, Pediatric Endocrinology
Donna Slayton, RN, Pediatric Pulmonary
Michael Stalvey, MD, Pediatric Endocrinology
Julie Stone, RN, Pediatric Pulmonary
Kristen Waddell, CRNP, Pediatric Critical Care
Susan Walley, MD, Pediatric Hospital Medicine
Marjorie Lee White, MD, Pediatric EM
Lindy Winter, MD, Neonatology
Aaron Woods-Walker, CA, Specialty Care Services
Mary Worthington, Pharm-D
Brittany Yeager, RN, Neonatology

Medical Co-Directors

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

Nurse Educators

J. Lynn Zinkan, MPH, RN, CPEN, CHSE
Carrie Norwood, MSHI, BSN, RN, CPN
Seth Perry, BSN, RN, CPN
Kandi Wise, BSN, RN

Director, Simulation Research

Stacy Gaither, MSN, RN

Office Manager

Andrea Benz

Pediatric Simulation Fellows

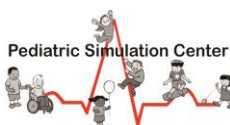
Veronica Godsey, MD, Pediatric Critical Care
Sai Raju, MD, Pediatric Critical Care



Dr. Godsey and Dr. Raju, 2019 Simulation Fellows



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Publications / Scholarly Work

This page and the following pages include publications and select presentations from 2019. For a comprehensive list of our publications and presentations, please visit www.childrensal.org/PediatricSimulationCenter

Manuscripts

1. **Zinkan JL, Rutledge C, Norwood C, Wise K, Gaither S, Cameron B, Tofil NM**, Surapa Raju SK. Nurse Vigilance: A 3-part Simulation Course to Decrease Cardiopulmonary Arrests Outside of Intensive Care Units. *Journal for Nurses in Professional Development*. July/August 2019;35(4):E1-E8.
2. **Bernard DW, White ML, Tofil NM, Jolliffe C, Youngblood A, Zinkan JL, Gaither SL**, Peterson DT, Yuan YY. A Simulation Course Focusing on Forensic Evidence Collection Improves Pediatric Knowledge and Standardizes Curriculum for Child Abuse. *South Med J*. 2019 Sep;112(9):487-490. doi: 10.14423/SMJ.0000000000001014.
3. **Swinger ND, Rutledge C, Gaither S, Youngblood AQ, Zinkan JL, Tofil NM**. Rapid cycle deliberate practice improves and sustains paediatric resident PALS performance. *BMJ Simulation and Technology Enhanced Learning*. Published Online First: September 2019.doi:10.1136/bmjstel-2019-000483.
4. Cheng A, Kessler D Lin Y, **Tofil NM**, Hunt EA, Davidson J, Chatfield J, Duff JP for the International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE) CPR Investigators* Influence of CPR Coaching and Provider Role on Perception of CPR Quality during Simulated Pediatric Cardiac Ped Crit Care Med 2019; 20(4):e191-198.
5. White ML, **Tofil NM**, Jolliffe C, Youngblood AQ, **Zinkan JL**, Peterson DT, Yuan E, Bernard D. A simulation course focusing on forensic evidence collection improves pediatric knowledge and standardizes curriculum for child abuse. *Southern Medical Journal*. Accepted May 2019.
6. Chang TP, Raymon T, Dewan M, MacKinnon R, Whitfill T, Harwayne-Gidansky I, Doughty C, Frisell K, Kessler D, Wolfe H, Auerbach M, **Rutledge C**, et al. The effect of an international competitive leaderboard on self-motivated simulation-based CPR practice among healthcare professionals: a randomized control trial. *Resuscitation*. May 2019; 138:273-281.
7. **Tofil NM**, Cheng A, Lin Y, Davidson J, Hunt EA, Chatfield J, MacKinnon R, Kessler D for the International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE) CPR Investigators . Effect of a CPR Coach on Workload during Pediatric Cardiopulmonary Arrest: A Multicenter, Simulation-based Study. Accepted November 2019 *Ped Crit Care Med*
8. **Wise K, Zinkan JL, Rutledge C, Norwood C, Tofil NM**. The First Five Minutes of Pediatric In-Hospital Arrests. *J of Nurses in Staff Development* Submitted May 2018, Revisions submitted September 2019. Accepted November 2019



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Oral / Workshop Presentations

1. **Rutledge C, Waddell K, Gaither S, Tofil NM.** Assessing community hospital management of critically ill pediatric patients in Alabama. Society of Critical Care Medicine Congress, Oral Presentation, San Diego, California, January 2019.
2. **Surapa Raju S, Rutledge C, Tofil NM.** Long term PALS retention following Rapid Cycle Deliberate Practice (RCDP). 11th Annual International Pediatric Simulation Symposia and Workshops. Toronto, Canada. May 2019.
3. **Tofil NM, Cheng A, Yiqun L, Davidson J, Hunt W, Chatfield J, Mackinnon L, Kessler D.** CPR Coaches: Do They Effect Team Workload During a Simulated Pediatric Cardiopulmonary Arrest Scenario? 11th Annual International Pediatric Simulation Symposia and Workshops. Toronto, Canada. May 2019.
4. Cheng A, Kessler D, Yin Yiqun, **Tofil NM, Hunt E, Davidson J, Chatfield J, Duff J.** Influence of CPR coaching and provider role on perception of CPR quality during simulated pediatric cardiac arrest. 11th annual International Pediatric Simulation Symposium and Workshops May 2019, Toronto, Canada.

Posters

1. Kessler D, Grabinski Z, Nadkarni L, Lin Y, Duff J, **Tofil NM, Cheng A, INSPIRE investigators: Nye M, Gaither S, Hunt E, Davidson J, Chatfield J.** How Does a CPR Coach Impact Pauses in Chest Compressions During a Simulated Cardiac Arrest. 11th International Pediatric Simulation Symposium and Workshops, Toronto, Canada. May 2019.
2. **Cameron B, Gaither S, Norwood C, Rutledge C, Tofil NM, Wise K, Zinkan L.** Simulation Based Remediation. 11th International Pediatric Simulation Symposium and Workshops, Toronto, Canada. May 2019.
3. Gupta N, **Rutledge C, Shinick VS, Tofil NM, Norwood C, Zinkan JL, Cameron B, Hayes L.** Early Mobility in the Pediatric Intensive Care Unit: A Quality Improvement Project Using Simulation. 11th International Pediatric Simulation Symposium and Workshops, Toronto, Canada. May 2019.
4. **Zinkan JL, Tofil NM, Norwood C, Cameron B, Rutledge C, Gaither S.** Simulation Based Remediation. 11th annual International Pediatric Simulation Symposium and Workshops May 2019, Toronto, Canada.
4. Cheng A, Kessler D, Lin Y, **Tofil NM, Hunt EA, Davidson J, Chatfield J, Duff JP** for the International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE) CPR Investigators. Influence of CPR coaching and provider roles on perception of CPR quality during simulated pediatric cardiac arrests. Society of Simulation in Healthcare 19th Annual Meeting. San Antonio, TX January 2019.
5. **Raju SS, Rutledge C, Tofil NM.** Prospective study of pediatric residents PALS retention using standardized high fidelity simulation. Accepted to the 48th Society of Critical Care Medicine Annual Meeting, San Antonio, TX 2019.
6. Cheng A, Duff JP, Kessler D, **Tofil NM, Davidson J, Lin Y, Chatfield J, Brown LL, Hunt EA** for the International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE) CPR Investigators. Optimizing CPR Performance with CPR Coaching for Cardiac Arrest: A Randomized Clinical Trial. Society of Simulation in Healthcare 19th Annual Meeting. San Antonio, TX January 2019. ****Best Research Abstract**.**



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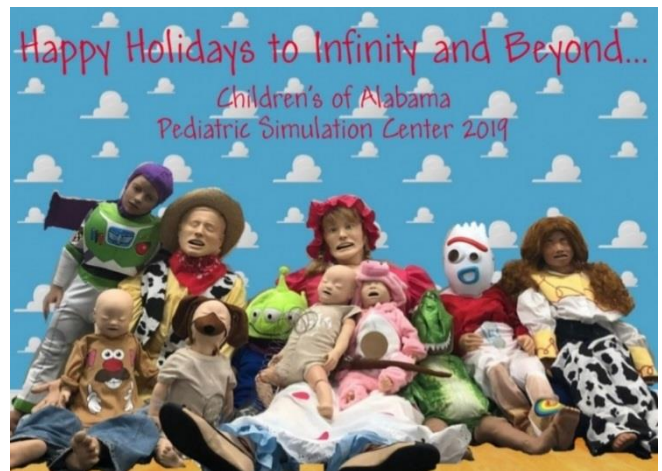
2019: A Year in Pictures



Simulation Team in Toronto at International Pediatric Simulation Conference



Simulation Team Holiday Gathering



12th Annual Christmas Card 2019



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