Pediatric Simulation Center
Annual Report 2016
Faculty & Staff

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We would like to extend a special thanks to Dr. Nathan Swinger for all the time and effort he has dedicated to improve the knowledge and training of students, residents and staff over the last two years.

Adjunct Faculty
Steve Baldwin, MD, Pediatric EM
Jennifer Beall, Pharm-D
Kim Benner, Pharm-D
David Bernard, MD, Pediatric EM
Shaundra Blakemore, MD, Pediatric EM
Amy Cameron, RD, Nutrition
Carl Coghill, MD, Neonatology
Jerry Cox, MD, Pediatric Anesthesiology
Brenda Denson, Pharm-D
Candice Dye, MD, General Pediatrics
Leigh Hardy, RD, Nutrition
Megan Hofto, MD, General Pediatrics
DeeAnne Jackson, MD, General Pediatrics
Chris Jolliffe, RN, Sexual Assault Nurse Examiner
Collin King, MD, Pediatric Anesthesiology
Debbie Laney, RN, ECMO
Jeannine Maclin, MD, Pediatric GI
Paula Midyette, RN, CVICU
Traci Morgan, CRNP, CVICU
Lauren Nassetta, MD, Hospitalist
Sarah Novara, MD, Pediatric Neurology
Tammy Pope, BSN, RN, RNC
Leslie Rhodes, MD, Pediatric Cardiology/PICU
Jenny Ross, RN, ECMO
Paul Scalici, MD, General Pediatrics/Hospitalist
Michael Stalvey, MD, Pediatric Endocrinology
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Brad Troxler, MD, Pediatric Pulmonology
Kristen Waddell, CRNP, PICU
Susan Walley, MD, Hospitalist
Marjorie Lee White, MD, Pediatric EM
Lindy Winter, MD, Neonatology
Mary Worthington, Pharm-D
Megan Yanik, MD, Pediatric Nephrology
Yearly Summary

In 2016, the Pediatric Simulation Center celebrated its 8th year and 48,000th learner.

Accreditation

The Pediatric Simulation Center is proud to announce our recognition as an accredited center by the Society for Simulation in Healthcare in Research, Teaching/Education, and Systems Integration. This milestone was obtained in cooperation with UAB as a simulation consortium.

Supporting Hospital Initiatives

The Center continues to integrate educational programs and training that supports the Children’s of Alabama Solutions for Patient Safety (SPS) Collaborative. Our Quest is to focus on skills, knowledge, and attitudes necessary to eliminate medical harm to our patients.

The Simulation Center emphasizes patient safety and quality with every learner, course, and interaction.

- Participate in the Solutions for Patient Safety (SPS) collaborative and other CHA quality initiatives.
- Piloted a course to improve the use and recognition of error prevention behaviors
- New nurse graduate program introduces the concept of high reliability and reinforces safety behavior
- Clinical assistant course focuses on collaboration, communication, and safety
- Patient scenarios based on real safety issues
- Promote the use of the WHO handwashing guidelines by all simulation participants
- Mock codes to improve systems issues
- Inclusion of mass transfusion protocol drills into mock codes
Improving Patient Outcomes

- Primary Care simulation is a new course offered to all interns during their Primary Care Immersion week with Dr. Candice Dye. It focuses on a **teenage interaction utilizing a standardized patient**. It was funded with a UAB Department of Pediatrics Founders Fund Grant.

- Pediatric Neurology simulation is a course offered twice a month to residents on both the Neurology and PICU rotations. The course director is Dr. Sarah Novara. It focuses on the **emergency care of an acute neurologic problem**. It was also funded with a UAB Department of Pediatrics Founders Fund Grant.

- The Pediatric Hematology/Oncology fellowship directors, Drs. Kimberly Whalen and Anna Xavier, developed and taught a half day course focusing on **delivering bad news in the context of hematology/oncology** scenarios. All of the Hem/Onc fellows participated. Standardized patients were used to improve realism.

- The Well Baby simulation course started in September 2016 and is done in situ in the Well Baby Nursery 6th floor WIC monthly. This is an **interdisciplinary course focusing on nurses and pediatric interns** in the Well Baby Nursery. Department of Pediatrics Founders Fund Grant has funded the project with Dr. DeeAnne Jackson and Dr. Kristine Sawyer as the Principal Investigators.

- In 2016, four simulation scenarios were added to the **Continuous Renal Replacement Therapy (CRRT) beginner and refresher courses** in hopes to enhance the training. Participants get hands on experience trouble shooting common pump problems, while having an actual simulated patient to assess. With this ability to practice in a hands on manner, the learners will **hopefully gain muscle memory** and have better retention. **Since participants may go months or years without actually taking care of a patient on CRRT**, we feel realistic training is important.

We continue to partner with the UAB Department of Engineering working closely with biomedical engineering students. Over the summer we developed the **third prototype for a pediatric capillary refill model**. Intellectual property right forms have been filed. Currently we are working on an anterior fontanelle model for our newborn simulator.

*Left: Biomedical engineering students work on creating an anterior fontanelle model.*
Offering Quality Programs

In 2016, the Pediatric Simulation Center saw 5,562 learners and facilitated 8,699 learner hours of simulation. Throughout the year, the Center conducted:

- 701 simulation sessions
- 1017 hours of simulation
- 18 Mock Codes / 6 Mock Traumas
- 20 sessions for New Graduate nurses
- 48 family education simulations
- 18 Neonatal Resuscitation simulations
- 15 Nursing Orientation simulations
- 6 Anesthesia simulations
- 13 PALS simulations
- 14 ECMO simulations
- 28 Error Prevention simulations

In 2016, over 850 staff members were trained in the First Five Minutes of a Code including specialty care clinics, radiology and all acute care areas.

- Nurses and ancillary staff participate in training every six months through annual nursing skills lab and in situ training.
- A video was added to this training so learners can watch an ideal code situation then practice what they have seen.
- The staff trains to do high quality CPR including use of a backboard, minimizing interruptions in chest compressions, connecting patient to defibrillator/monitor using quick combo pads, the importance of someone being the charter/announcer, and preparing the first dose of epinephrine and including that it is ready in their quick SBAR Handoff to code team leader.
- Through mock code evaluations, we have seen a decrease in our time to CPR, first dose of epinephrine, and increased use of backboard, which we believe is partly attributable to this training.

Surgeons and nurses gain hands on experience with ECMO emergencies.
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 2016, we encountered 15 different types of internal (within Children’s of Alabama and UAB) learners including patient family members.
- We provided training for 2,904 internal staff members.
- 101 patient family members attended simulation to practice tracheostomy and/or home ventilator emergencies prior to discharge.

### Our In-House Learners in 2016*

- RN (2442)
- MD (126)
- Resident (1092)
- Respiratory Therapy (134)
- Clinical Assistant (88)
- Pharmacist (83)
- Patient & Family (101)
- Radiology Technologist (45)
- PT / OT (52)
- Registered Dietician (1)
- Lab (3)
- Chaplain (10)
- Dental (1)
- Transport (2)
- Pharmacy Technician (35)
- Social Work (4)

*Numbers do not include students.
In 2016, we educated 1,246 students and conducted:

- 49 medical student simulations
- 3 nursing student simulations
- 9 courses for pharmacy students

The Center mentored 4 third year medical students during their two month Scholarly Activity Block and 13 fourth year medical students during two and four week elective periods. We also mentored 10 engineering students (biomedical and electrical).

- Medical Students (1007)
- Nursing Students (18)
- Pharmacy Students (218)
- High School Students (12)
- Respiratory Therapy Students (3)
Children’s of Alabama Community Hospital Education Simulation (COACHES) Program

In 2016, through a generous donation from Dr. Joe and Cornelia LaRussa, the COACHES Program was able to fully come to fruition.

- This program aims to utilize simulation in a structured environment to promote excellence in pediatric clinical care, patient safety and education for all healthcare team members throughout the state of Alabama.
- The COACHES team visits community hospitals throughout Alabama and provides an assessment of the hospital to assure they have the necessary equipment and infrastructure to care for sick children and training to hospital staff through simulation.
- In 2017, the COACHES program has plans to continue this outreach education with 10 hospital visits scheduled from January through April.

Children’s of Alabama Committee for the Future

This committee gives emerging Alabama community leaders the opportunity to experience Children’s of Alabama’s unique mission firsthand so that they may share our stories of hope in their communities.

- Members spend an intensive in-hospital rotation day observing surgical, medical and psychosocial services and also learn about hospital operations and research initiatives including the role of the Pediatric Simulation Center.
- The committee is given the opportunity to observe an interprofessional simulation scenario of a patient transferred from a community hospital by the COA Critical Care Transport team to the Pediatric Intensive Care Unit at COA. This exercise gives the committee an opportunity to observe the multi-disciplinary approach and training involved in caring for critically ill children.

Trauma Prevention Program - 78 teenagers “sentenced” to children’s program after a minor traffic infraction observed a trauma simulation during this course.
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
- Tracheostomy Education for Patient Families
- 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
- Cardiology Simulations for Residents and Nurses
- 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

Rapid Cycle Deliberate Practice, a haiku:
By Nathan Swinger, MD

Reflective Practice
Learning through experience
The RCDP

Over the past year we have used a novel form of simulation called Rapid Cycle Deliberate Practice (RCDP) to train over 70 pediatrics residents and fellows in pediatric resuscitation. Our work is on the cutting edge of resuscitation education. We have been able to demonstrate a 200% improvement in knowledge retention when compared with traditional PALS training. Moving forward we plan to expand this training to help educate other healthcare teams including nursing and respiratory therapy.
Publications / Scholarly Work

This page and the following pages include publications and select presentations from 2016. For a comprehensive list of our publications and presentations, please visit www.childrensal.org/PediatricSimulationCenter

Manuscripts


Abstracts


Oral / Workshop Presentations

2. Duerring SA, White ML, Tofil NM, Nafziger SM, Pruitt CM, Shah MI, Doughty CB, Baker MD. Application of Pediatric Simulation Training for emergency prehospital providers. Accepted for an Oral Presentation for Southern Society for Pediatric Research, February 2016, First author awarded Trainee Travel Grant.


Posters


