

# 2020 **CHIPS** ANNUAL REPORT



# MISSION, VISION, AND VALUES

The Center for Healthcare Improvement and Patient Simulation (CHIPS) endeavors to advance healthcare through patient simulation as an international center of excellence for healthcare simulation. CHIPS is centered on the values of psychological safety, transparency, and servant leadership.

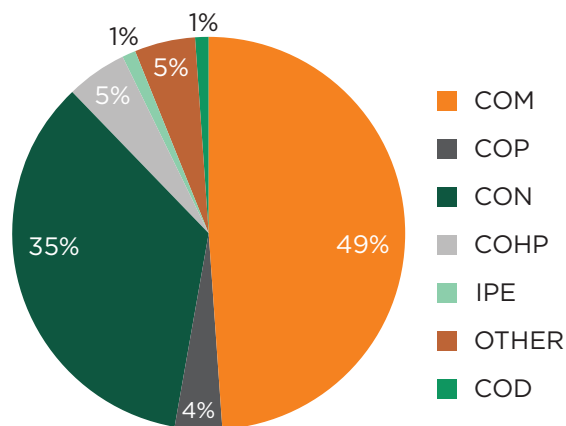
## INTRODUCTION

The Center for Healthcare Improvement and Patient Simulation (CHIPS) is dedicated to improving the quality of healthcare delivery through education, research, assessment and enhanced clinical skills with standardized/ simulated patients (individuals trained to portray patients), high-fidelity patient simulators (manikins), and virtual reality settings. To learn more about CHIPS, [please view the promotional video](#), which was filmed in February 2020.

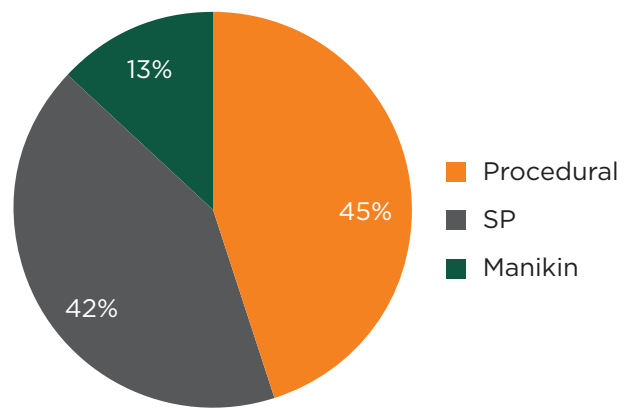
CHIPS activity in the 2019-2020 academic year included:

- 38,719 total learner hours, up 6,608 hours from the previous year
- Broken down by modality, those hours are:
  - Procedural 16,482 (45%)
  - Manikin 4,753 (13%)
  - Standardized/Simulated Patient 15,567 (42%)
- Total number of learners (not unique) was 16,882

The CHIPS team supported events for UTHSC's College of Medicine (49% of usage), College of Nursing (35%), College of Health Professions (5%), College of Pharmacy (4%), College of Dentistry (1%), interprofessional education (1%), and external groups and clinical partners (5%).



Use by College



Use by Modality



## SIMULATION EDUCATION AND OPERATIONS HIGHLIGHTS

CHIPS serves each of the colleges at UTHSC: Medicine, Nursing, Pharmacy, Dentistry, Health Professions, and Graduate Health Sciences. Education staff works with faculty from different disciplines to develop procedural, manikin, and standardized/simulated patient events designed to meet specific educational criteria for student learning. In academic year 2019-2020, these events totaled 38,719 learner hours. While CHIPS and UTHSC faculty have developed many high quality, successful simulations, this report will highlight some of the interprofessional education (IPE) events from 2019-2020.



### **PediFlite Simulation:**

Pedi-Flite Critical Care Transport teams complete training in CHIPS.

### **Table top escape room:**

Pharmacy, medicine, and physician assistant students collaborate on a table top escape room event in February 2020.

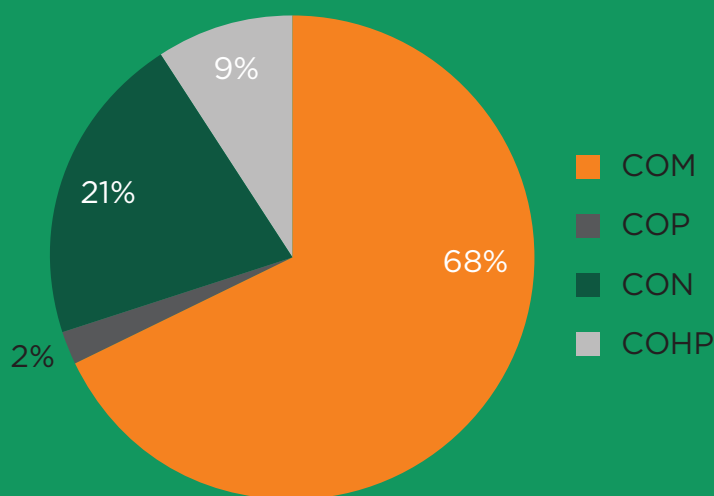


In recent years, there has been strong focus on team communication across multiple disciplines. In February 2020, CHIPS hosted an IPE table game “escape room” that included pharmacy, medicine, and physician assistant students who worked together to learn about the impact social determinants of health have on medication adherence and patient care and the role that team communication has on patient outcomes. With the assistance of CHIPS education and operations teams, faculty from all the disciplines collaborated to facilitate this event for 382 learners totaling 764 learner hours.

In November 2019, the center worked with pharmacy faculty and medical resident chiefs to create a escape room educational event for 106 second year pharmacy students and 30 first year internal medicine residents. This interprofessional activity focused on teamwork and professional communication as they worked to create a cost-effective, evidence-based, and equitable patient care plan.

The education team worked closely with dentistry faculty, to develop a series of innovative small group deconstructed simulations for third year dental students. These were designed to allow students to practice using motivational interviewing skills and strategies to reduce moderate dental anxiety with a new patient. Rather than the standard, individualized patient encounter, this event design had learners, faculty, and an SP in the room together while learners practiced their communication skills and faculty was able to give real-time feedback during “timeouts.” At the end of the session, SPs were asked to provide feedback from the patient’s perspective about student’s questions, nonverbal communication, demonstration of patient-centered and motivational interviewing skills, and anxiety management techniques.

## SP Curricular Integration by College



Members of the CHIPS team also had the honor of serving in leadership roles in the healthcare simulation community on a national level. Jamie Pitt, Assistant Director of Education for Standardized/Simulated Patients, was appointed Chair of the Affiliations Committee for the Society for Simulation in Healthcare. CHIPS staff were chosen as content reviewers and track leads for SimOps 2020, a national conference for simulation operations. Since then, Jarrod Young was named co-chair of the SimOps 2021 Conference, serving as one of the top decision makers planning the upcoming conference.

As new team members were hired in CHIPS, Jarrod Young, MBA, CHSOS, CHIPS Operations Lead, developed a comprehensive web-based orientation for onboarding new operations staff. Late in the year, the team also created a Quality Improvement Council with representatives from each CHIPS department to develop solutions to fill gaps in current processes.



**Visiting scholar Faisal Alamri:**

Faisal Alamri completed a three-month fellowship in simulation operations at CHIPS and became a valued member of the team.

CHIPS hosted a visiting scholar from Saudi Arabia, Faisal Alamri, who completed a three-month fellowship in simulation operations. Faisal assisted the operations team with events, maintenance, and simulation programming. While in Memphis, he was mentored by executive director Dr. Chad Epps and the operations team led by Jarrod Young.

**CRNA trauma ER:** Student Nurse Anesthetists perform endotracheal intubation in trauma patient.





## INNOVATIONS

An infant pericardiocentesis trainer, which first debuted in April 2019, received a provisional patent in January of 2020 and was featured at UT Day on the Hill in early 2020. The team of inventors includes Jonathan Spagnoli, lead inventor and CHIPS simulation specialist; Jarrod Young, CHIPS simulation operations lead; Dr. Sandeep Chilakala, associate professor of pediatrics- neonatology; and Dr. Ranjit Raju Philip, assistant professor of pediatrics-cardiology.



### Day on the Hill:

Left to right: Dr. Sandeep Chilakala, associate professor of pediatrics-neonatology; Jonathan Spagnoli, lead inventor and CHIPS simulation specialist; Dr. Ranjit Raju Philip, assistant professor of pediatrics-cardiology; and Jarrod Young, CHIPS simulation operations lead representing UTHSC at Day on the Hill.

In December 2019, Jonathan Spagnoli, Simulation Specialist, Jarrod Young, Operations Lead, and Dr. Tim Jancelewicz, a faculty partner, received one of the four UTRF 2020 Technology Maturation Grants on the Memphis campus for an Ultrasoundable Extracorporeal Life Support Training Solution for Team Practice.

### UT Research Foundation Grant:

Left to right: Dr. Tim Jancelewicz, Jonathan Spagnoli, and Jarrod Young, MBA, accept a UTRF 2020 Technology Maturation Grant.



## RESEARCH

### **Dr. Kuan Xing**

In November 2019, CHIPS brought Dr. Kuan Xing on board to serve as the Director of Assessment and Research. In this role, Dr. Xing will oversee the assessment activities at CHIPS, which includes assessment of student performance, managing a comprehensive assessment system to demonstrate simulation program outcomes, engaging simulation faculty/facilitators, and maintaining a program of assessment compliant with the Society for Simulation in Healthcare Standards for Assessment. He also guides the research activities at CHIPS, including but not limited to applying and driving successful outcomes for funding opportunities, supporting the research mission of University of Tennessee Health Science Center, and maintaining a program of research compliant with the Society for Simulation in Healthcare Standards for Research.



Since he joined CHIPS at University of Tennessee Health Science Center (UTHSC), Dr. Xing has engaged in a variety of assessment and research activities. He assisted the CHIPS team and simulation faculty to validate their checklists/rubrics to analyze learner performance. He helped to establish a post-event learner survey with IRB approval for the quality control of the simulation program.

In addition, Dr. Xing is actively collaborating with different faculty at UTHSC in assessment and simulation research. For example, he is currently collaborating with pharmacy faculty on a funded project on COVID vaccine preparation for independent pharmacists in Tennessee (using simulation to deliver their education module and conduct assessments). He also collaborated with faculty on an Interprofessional Education (IPE) research project which utilized the escape room format. He wrote manuscripts with colleagues on reliability and validity of a pharmacy assessment rubric. In collaboration with other CHIPS staff, he also won a grant award from the University of Tennessee Office of Equity and Diversity to conduct a study on Standardized/Simulated Patients (SPs) for better portraying Social Determinants of Health.

## PUBLICATIONS

- Epps, C., Britt, T., Palanganas, J. (2019). Using healthcare simulation for interprofessional education and practice. In J. Palaganas, B. Ulrich, & B. Mancini (Eds.), *Mastering Simulation: A handbook for success*, 2nd edition. Indianapolis, IN; Sigma Theta Tau International.
- Watts, P.I., Peterson, T., Brown, M., Peterson, D.T., White, T., Epps, C., White, M.L. (2020). Faculty Reflections on Effective Strategies Utilized to Implement Simulation-Enhanced IPE for Future Health Care Providers. *Clinical Simulation in Nursing*.
- Gliva-McConvey, G., Shannon, G.M., Pitt, J., Clark, L. (2020). The Human Simulation Continuum: Integration and Application. In Gliva-McConvey, G., Nicholas, C.F., & Clark L. (Eds.), *Comprehensive Healthcare Simulation: Implementing Best Practices in Standardized Patient Methodology*. *Comprehensive Healthcare Simulation*. Springer, Cham. [https://doi.org/10.1007/978-3-030-43826-5\\_5](https://doi.org/10.1007/978-3-030-43826-5_5)



### **Comprehensive Healthcare Simulation: Implementing Best Practices in Standardized Patient Methodology:**

Jamie Pitt, Assistant Director of Education for Standardized and Simulated Patients, with a copy of her methodology publication.

## PRESENTATIONS

- Brauer, E. (February 2020). "Simulation Modalities: A Programmatic Approach." SimGHOSTS, Saudi Arabia. Presentation.
- Brauer, E. (October 2019, November 2019, February 2020). "The Pre-Brief: An Operations Perspective." S3 Conference, Singapore. International Symposium on Operations in Simulation in Healthcare, Buenos Aires. SimGHOSTS, Saudi Arabia. Presentation.
- Brauer, E. (November 2019, February 2020). "Guide to Operations: A Systematic Approach." International Symposium on Operations in Simulation in Healthcare, Buenos Aires. SimGHOSTS, Saudi Arabia. Presentation.



Brauer, E. (February 2020). "Programming with SimDesigner." SimGHOSTS, Saudi Arabia. Presentation.

Brauer, E. (October 2019, February 2020). "A Clinical Guide for Healthcare Sim Technologists." S3 Conference, Singapore. SimGHOSTS, Saudi Arabia. Presentation.

Brauer, E. (October 2019). "Basic Medical Equipment and Supplies." S3 Conference, Singapore. Presentation.

Brauer, E. (October 2019). "Moulage on a Budget." S3 Conference, Singapore Presentation.

Brauer, E. (October 2019). "Premade Wounds." S3 Conference, Singapore. Presentation.

Brauer, E. (October 2019). "General Moulage." S3 Conference, Singapore. Presentation.

Brauer, E. (October 2019). "Casting and Molding Workshop." S3 Conference, Singapore. Presentation.

Brauer, E. (October 2019). "Job Roles and Staff Development." S3 Conference, Singapore. Presentation.

Brauer, E. (October 2019). "Learn To LLEAP: SimDesigner." S3 Conference, Singapore. Presentation.

Brauer, E. (November 2019). "Asset Management and Maintenance." International Symposium on Operations in Simulation in Healthcare, Buenos Aires. Presentation.

Britt, T. (October 2019). "Leadership and State Alliances- Opportunities and Challenges." NLN Monthly Webinars. Invited webinar speaker.

Britt, T., Young, J., Pitt, J., Epps, C. (January 2020). "Improve Management: Grow Without the Pains." Podium Presentation: International Meeting on Simulation in Healthcare, San Diego, CA.

Downing, D., Hara, K. Farkas, D., Britt, T. (January 2020). "Curriculum Design Process for Simulation: A Panel Discussion." Podium Presentation: International Meeting on Simulation in Healthcare, San Diego, CA.

Epps, C., Patterson, M., Seropian, M. (January 2020). "Simulation Program Development and Sustainability: Plan for Success." Podium Presentation: International Meeting on Simulation in Healthcare, San Diego, CA.

Epps, C., McCarthy, J., Seropian, M. (January 2020). "Effective Space Design." Podium Presentation: International Meeting on Simulation in Healthcare, San Diego, CA.

Hebert, S., Britt, T., Hardie, L., Cason, M., Latimer, B., Jones, H. (January 2020). "Solutions for Incorporating Simulation Professional Development at Your Institution." Podium Presentation: International Meeting on Simulation in Healthcare, San Diego, CA

Hebert, S. and Britt, T. (April 2020). "Professional Development Solutions to Accommodate Your Identified Needs." Global Institute for Simulation Training. Invited webinar Speaker.

Pitt, J., Scarbecz, M., Dyer, N. (March 2020). "Using Standardized Simulated Situations to Facilitate Faculty and Student Development." American Dental Education Association (ADEA) Annual Session & Exhibition. Virtual Panel Presentation.

Shelton, C. and Britt, T. (January 2020). "Escape Rooms: Break from Traditional IPE." Podium Presentation: International Meeting on Simulation in Healthcare, San Diego, CA.

Spagnoli, J., Young, J., Chilakala, S., Philip, R. (February 2020). "Neonatal Exchange Transfusion Training Model." Exhibit: UT Day on the Hill. Nashville, TN.

Spagnoli, J., Young, J., Epps, C. (January 2020). "A Low-Cost Trainer for Ultrasound-Guided Infant Pericardiocentesis." SimVentors: International Meeting on Simulation in Healthcare, San Diego, CA.

Spagnoli, J., Agee, X. (January 2020). "Making Your Own Moulage Tattoos for High Volume Simulation." Podium Presentation: International Meeting on Simulation in Healthcare, San Diego, CA.  
os for High Volume Simulation." Podium Presentation: International Meeting on Simulation in Healthcare, San Diego, CA.

Tawfik, A., Bradford, J.L. (2020). "Longitudinal Analysis of Cognitive and Affective Learning Outcomes in Problem-Based Learning Simulation Designs." Paper Session. San Francisco, CA.:[https://convention2.allacademic.com/one/aera/aera20/index.php?program\\_focus=view\\_paper&selected\\_paper\\_id=1581230&cmd=online\\_program\\_direct\\_link&sub\\_action=online\\_program](https://convention2.allacademic.com/one/aera/aera20/index.php?program_focus=view_paper&selected_paper_id=1581230&cmd=online_program_direct_link&sub_action=online_program).

Young, J. (January 2020). "Simulation Operations Onboarding: Establishing a Foundation for Certification." Podium Presentation: International Meeting on Simulation in Healthcare, San Diego, CA.

Young, J., Correale, A. (July 2020). "Medical Terminology 101: How to Speak the Lingo." SimOps 2020 Virtual Conference.

Young, J., Pitt, J., Mosher, S., and Epps, C. (April 2020). "Improve Program Management: Grow Without the Pains." SSH SimSeries: SimOps Webinar. Invited Webinar Presentation.