



## Mission & Vision

**Mission:** To improve the delivery of medical care to acutely ill children and ultimately improve survival from acute illness in the pediatric population.

**Vision:** To bring together all individuals working in pediatric simulation-based research to shape and mold the future of pediatric simulation research by answering important questions pertaining to resuscitation, technical skills, behavioral skills, debriefing and simulation-based education.

## History

The INSPIRE Network is the International Network for Simulation-based Pediatric Innovation, Research, and Education. INSPIRE was formed in 2011 from a large group of pediatric simulation-based researchers from a variety of disciplines and specialties looking to improve collaboration, mentorship, and productivity. We merged two large-scale existing pediatric simulation research networks, EXPRESS and POISE, into INSPIRE in 2011.

## Organizational Structure

This process has brought down the walls between institutions through shared resources and a mutual understanding of each other's work towards a common goal. Our work has

helped synergize ongoing projects in overlapping domains. We are not a formal academic society; rather, we are a bottom-up, grassroots organization that has formed to meet the needs of the rapidly changing landscape of pediatric simulation research. The network has been extremely productive in advancing and guiding simulation-based research activities. We provide a structure and process of mentorship to junior investigators. Resources to our members include an online database of ongoing studies and investigators, access to a research coordinator, librarian and statistician, online data sharing infrastructure (video, survey, database management) and a manuscript oversight committee for pre-publication review.

## Executive & Scientific Review Committees

INSPIRE is led by a diverse and inter-professional executive committee from institutions across the globe.

In the spirit of promoting new ideas and offering opportunities for researchers to grow within the Network, in 2017 the INSPIRE Network held an election to introduce new members to the INSPIRE Executive Committee and INSPIRE Scientific Review Committee.

We would like to extend a warm thank you to our founding Executive Members for sharing their knowledge and expertise with the INSPIRE Network community and for their continuing contributions to the INSPIRE Network.



# INSPIRE NETWORK REPORT

## 2016-2017

### Current Executive Committee Members



**Mark Adler, MD,**  
Northwestern University  
& Ann & Robert H. Lurie  
Children's Hospital of  
Chicago, USA



**Marc Auerbach MD,  
MSc (Senior Chair)**  
Yale University & Yale  
New Haven Children's  
Hospital, USA



**Jennifer Arnold, MD,  
MSc, FAAP,**  
Johns Hopkins All  
Children's Hospital, USA



**Aaron Calhoun, MD,  
FAAP, FSSH,**  
University of Louisville  
& Norton Children's  
Hospital, USA



**Adam Cheng MD, (Co-  
Chair)**  
University of Calgary &  
Alberta Children's  
Hospital, Canada



**Jonathan Duff, Bsc  
(Hon), MD, MEd, FRCPC,**  
University of Alberta &  
Stollery Children's  
Hospital, Canada



**David Grant, MD**  
University of Bristol &  
Bristol Royal Hospital for  
Children, UK



**David Kessler, MD, MSc,  
(Co-Chair)**  
Columbia University &  
New York-Presbyterian/  
Morgan Stanley Children's  
Hospital, USA



**Kimberly Stone, MD**  
University of  
Washington &  
Seattle Children's  
Hospital, USA



**Travis Whitfill, MPH**  
Yale University, USA

### Current Scientific Review Committee

Aaron Calhoun, MD, Kosair Children's / U of Louisville, KY (Chair); Linda Brown, MD, Hasbro Children's / Brown University; Isabel Gross, MD, Yale University; Chris Kennedy, MD, Children's Mercy; Akira Nishisaki, MD, Children's Hospital of Philadelphia; Frank Overly, MD, Hasbro Children's / Brown University; Nancy Tofil, MD, Children's Hospital Alabama

### Founding Executive Committee Members

- Co-chairs: Adam Cheng MD, Alberta Children's Hospital, Canada; Marc Auerbach MD, MSc, Yale University, USA
- Research chair: David Kessler MD, MSc, Columbia University, USA
- International chair: Ralph Mackinnon MD, Royal Manchester Children's Hospital, UK
- Technology chairs: Todd Chang MD, Children's Hospital of LA, USA; Jordan Duval-Arnould, Johns Hopkins University, USA
- Manuscript Oversight Committee Chair: Vinay Nadkarni MD, Children's Hospital of Philadelphia, USA
- Senior co-chairs: Elizabeth Hunt MD, PhD, Johns Hopkins University, USA; Martin Pusic MD, PhD, New York University School of Medicine, USA
- Network Manager: Nicola Peiris, BSc., Alberta Children's Hospital, Canada



L to R: Adam Cheng, Ralph MacKinnon, Nicola Peiris, Betsy Hunt, Vinay Nadkarni, Marc Auerbach, David Kessler, Jordan Duval-Arnould, Todd P Chang. Missing: Martin Pusic

### Founding Research Committee Members

David Kessler (Chair), MD, Columbia University; Jonathan Duff, MD, Stollery Children's Hospital; Nancy Tofil MD, Children's Hospital Alabama; Aaron Calhoun, MD, Kosair Children's Hospital; Akira Nishisaki, MD, Children's Hospital of Philadelphia; Frank Overly, MD, Hasbro Children's Hospital; Linda Brown, MD, Hasbro Children's Hospital; Mark Adler, MD, Lurie Children's Hospital



# INSPIRE NETWORK REPORT

## 2016-2017

### INSPIRE Network Funding and Partners

INSPIRE would like to acknowledge the support of partners who have provided infrastructure funding, in-kind support, and/or loaner equipment for INSPIRE network studies.



The Laerdal Foundation  
for Acute Medicine



INSPIRE would also like to thank the Society for Simulation in Healthcare and the International Paediatric Simulation Society for provided meeting space and food to support INSPIRE network meetings at their respective annual conferences.



Lastly, INSPIRE would like to acknowledge the support of an anonymous individual whose generous donation will support network activities over the next 3 years.

If you would like to make a donation to the INSPIRE Network please e-mail:  
[INSPIRESimulationNetwork@gmail.com](mailto:INSPIRESimulationNetwork@gmail.com)

### INSPIRE Network Data



FIGURE 1. INSPIRE global map with number of sites per country

Figure courtesy of: (Cheng A, Auerbach M, Calhoun A, MacKinnon R, Chang TP, Nadkarni V, Hunt EA, Duval-Arnould J, Pusic M, Peiris N, Kessler D for the INSPIRE Investigators. Building a Community of Practice for Researchers: The International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE). *Simulation in Healthcare*. Published online Nov 8, 2017. Doi: 10.1097/SIH.0000000000000269)

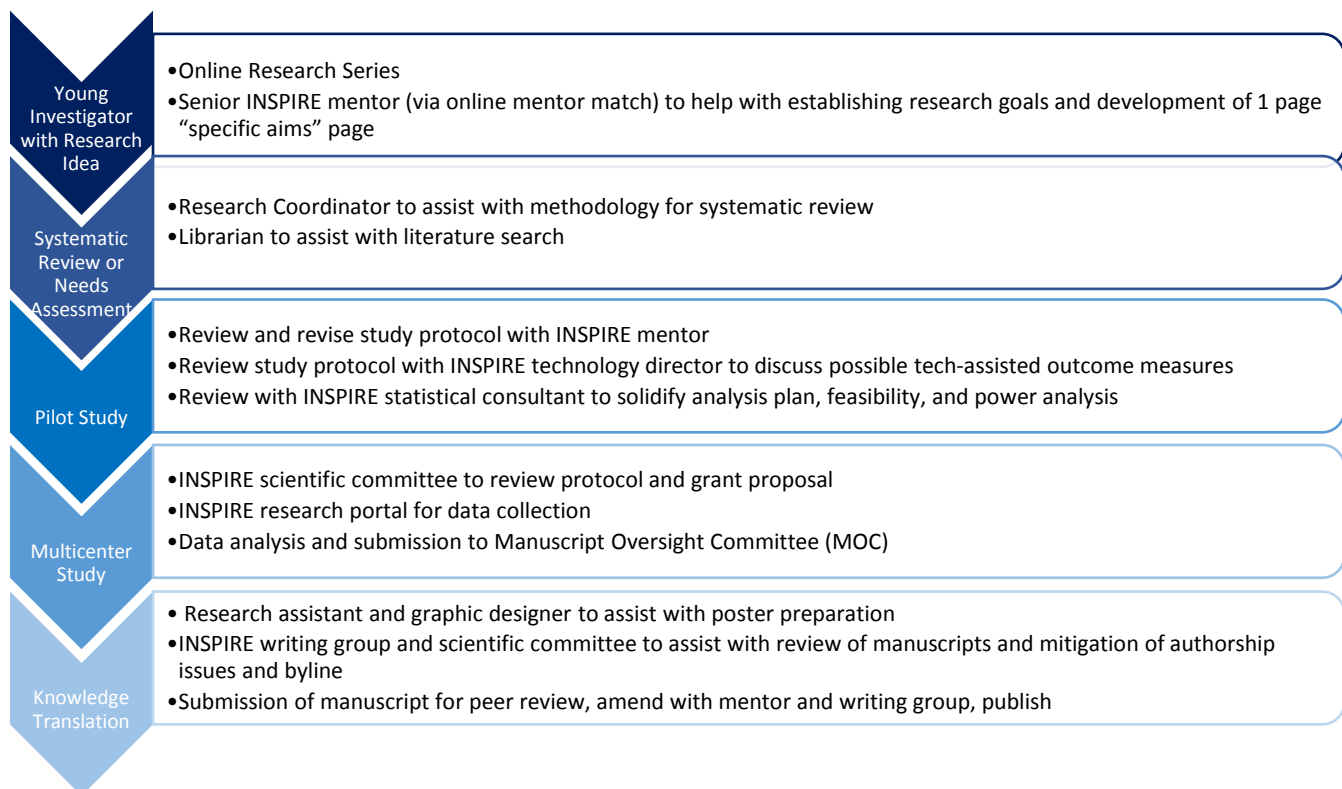
<b>Members</b>	<b>688</b>
<b>Sites</b>	<b>268</b>
<b>Countries</b>	<b>40</b>

## Research Process and Network Support Structure

Investigators are encouraged to begin their work by (1) submitting an ALERT presentation that is a brief description of their idea. Next, (2) the investigator is paired with a mentor and provided the “lay of the land” of ongoing research in that area to promote collaboration across projects. The investigator then conducts a (3) systematic review of the literature and plans an initial pilot study. The (4) pilot study methods are reviewed by the INSPIRE executive and shared with the network to recruit collaborators for a subsequent collaborative study. (5) The executive helps to facilitate

multicenter studies with IRB templates, scope of work templates, data use agreements, collaborative oversight and clear expectations from the start. INSPIRE can also provide specialty consultation with leading experts in biostatistics, educational research, technology and psychometrics. When the team has completed their work, (6) the manuscript oversight committee provides a pre-review of the work product and guidance on submission for publication. Additionally, (7) for selected projects the executive helps to provide letters of support for grant submission. In exchange for this support the INSPIRE investigator provides acknowledgement of INSPIRE in any presentation/publication and support for the INSPIRE administration on grants. See Figure for details.

Figure 2: INSPIRE Research Process and Network Support Structure



### INSPIRE Research Themes

INSPIRE has conducted a series of consensus conferences to identify themes of inquiry within pediatric simulation. This framework will guide our network’s focus.

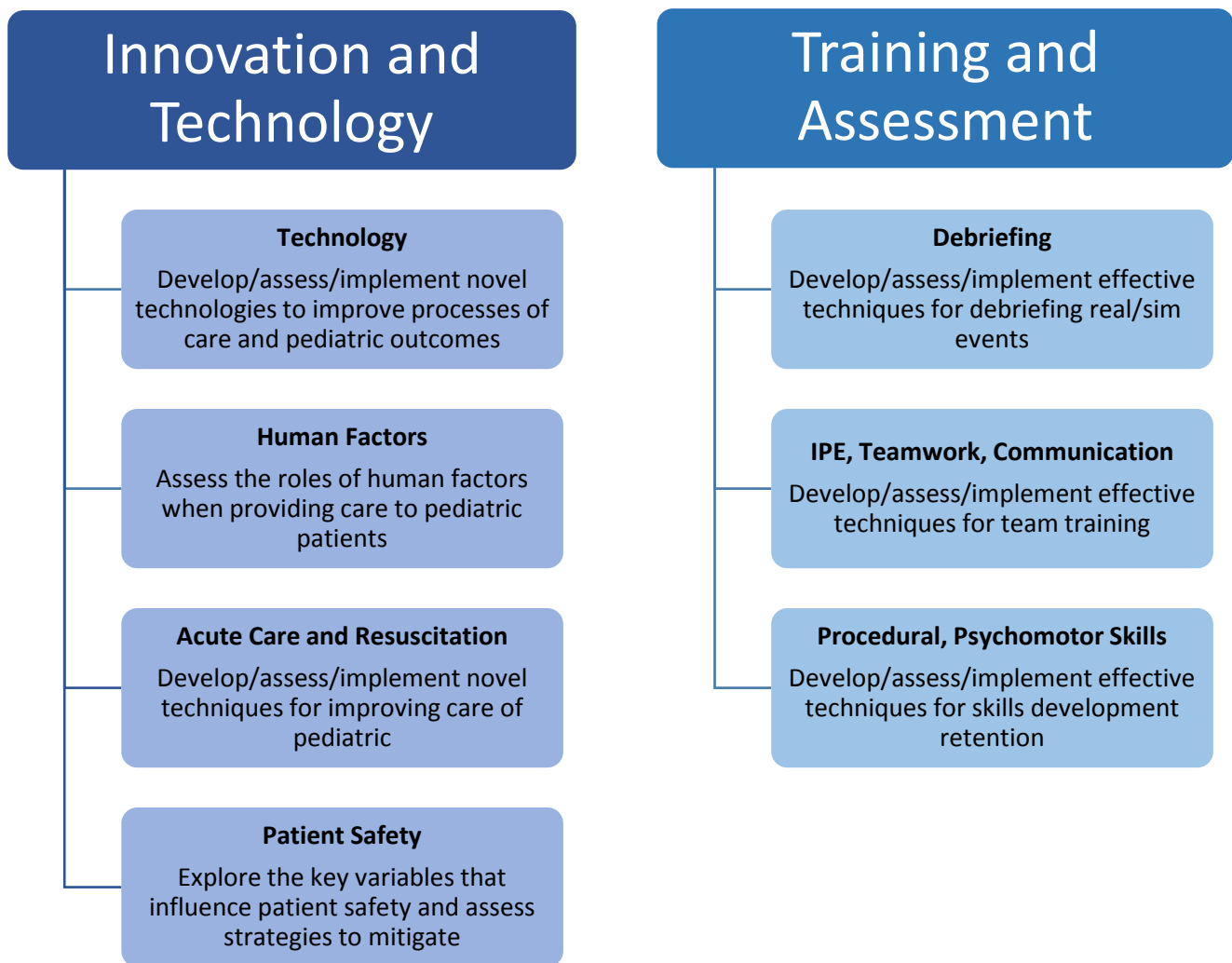


Figure 3. INSPIRE Research Themes



### INSPIRE Projects

#### INSPIRE Projects Presented in 2017

Project	Lead Investigator	Lead Institution	Description	Current Status
<i>Using Cognitive Task Analysis to Understand the Decision-Making Process for Pediatric Blunt Abdominal Trauma</i>	<i>Tania Ahluwalia, Serkan Toy &amp; Chris Kennedy</i>	Children's Mercy Hospital, Kansas City	Single site qualitative study. Interview experts from Pediatric Emergency Medicine and Pediatric Trauma Surgery. Use CTA to outline clinical decisions. Create an algorithm to be used as a tool for teaching through simulation and/or serious video games.	Formulating an algorithm and contacting experts nationally from for review
<i>Simulation as a strategy for learning in pediatrics graduate in a high complexity hospital. Intervention Study</i>	<i>Raúl N., Bordogna A., Costa G., de Echave JL.</i>	Centro de Simulación Clínica Hospital EL Cruce Florencio Varela, Argentina	Measure improving knowledge and technical/ nontechnical skills by pre and posttest and simulation checklist.	In development.
<i>Validating a Serious Games strategy to improve multi-patient care in Emergency Departments</i>	<i>Todd Chang</i>	Children's Hospital Los Angeles	Is there a dose-response relationship between game-based training and multi-patient care ability?	In development.
<i>Interdisciplinary Pediatric Sedation Provider Course Toolkit</i>	<i>Nancy Crego, and Corrie Chumpitazi</i>	Duke University School of Nursing & Society for Pediatric Sedation (SPS)	Develop, test, & evaluate a pediatric sedation provider course toolkit: including interdisciplinary team communication with Team Steps & evidence based sedation safety practices via on-line content and in-person simulation course	In development.
<i>SecureTube Study in the Simulated Setting</i>	<i>Girish G. Deshpande</i>	University of Illinois College of Medicine	Compare the flow characteristics and intubation experience of SecureTube with traditional ET (with same inner diameter) in simulated settings.	In development.
<i>CONsolidating Tools for OUtcomes in Resuscitation (CONTOUR)</i>	<i>Jonathan Duff</i>	University of Alberta, Stollery	Integrate the knowledge-based and team-based cognitive aids, in order to delineate the synergistic effect	In development.





		Children's Hospital	of integrating the CARD system with knowledge-based cognitive aids or "reader."	
<i>EPIC and Disaster Triage</i>	<i>Isabel Gross</i>	Yale School of Medicine	EPIC-assisted triage via mobile App in the field. Triage level assignment, picture of injury taken. Registration into EPIC in the field	Study Complete.
<i>RCDP as a method to improve airway management skills</i>	<i>Isabel Gross</i>	Yale School of Medicine	Is feedback with reflection "in action" with "rewind" (allowing learners to repeat action) superior to reflection "on action" without "rewind" when teaching procedural skills?	Study Complete.
<i>Improving knowledge and confidence of emergency residents in pediatric resuscitations through a pediatric resuscitation simulation curriculum</i>	<i>Scott Herskovitz, Maybelle Kou, Sonal Batra</i>	Inova Children's Hospital, George Washington University	Implementation of a pediatric resuscitation curriculum.	In development.
<i>Making simulation training stick with rapid cycle deliberate practice: Does interleaved various scenarios versus single progressive scenario improve long term retention of pediatric resuscitation skills?</i>	<i>Melissa Powell</i>	Johns Hopkins All Children's Hospital	Longitudinal prospective cohort (team) study. Post- test and retest study.	In development.
<i>Development of an Electronic Decision Support Tool to Optimize Performance during Pediatric Resuscitations</i>	<i>Priti Jani</i>	The University of Chicago Comer Children's Hospital	Development of a pediatric resuscitation decision support tool for IHCA.	In development.
<i>Use Of A Defined Role/Responsibility Chart And A Color-Coded Floor Code Map As An Innovative Tool To Improve Role Clarity During In-Situ Simulations</i>	<i>Mona Khattab</i>	Baylor College of Medicine, Texas Children's Hospital, Houston	Create a "Roles and Responsibilities" chart for each team member role. Patient positioning during a code; head at foot of bed vs. side of the bed.	In development.



# INSPIRE NETWORK REPORT

2016-2017

<i>A Handover OSCE to Measure Skills in Transitions of Care</i>	<i>Joseph Lopreiato and Kathleen Wortmann</i>	Uniformed Services University	Introduced a handover station into annual pediatric intern clinical skills examination (CSE). Pediatric interns over three academic years from two different pediatric training programs in the USA. The assessor used a previously validated 10 item observation tool to measure performance after all three cases had been presented (IPASS SCO).	In development.
<i>A prospective study investigating measurement of biometric parameters of critical care practitioners during simulation events using the wearable performance tracking device known as Hexoskin™</i>	<i>Rob Parker</i>	DuPont	Describe the biometrics of critical care practitioners in real and simulated stressful environments	Simulation study of Peds vs EM; Code Leader vs Participant completed. Manuscript in progress.
<i>Throughput, cost and standardization: Does a serious game in healthcare work for teaching parents and clinicians neuro assessment in children with VP shunt?</i>	<i>Melissa Powell</i>	Johns Hopkins All Children's Hospital	Evaluate the usability and effectiveness of the Serious Game with a group of approximately xx parents or guardians of affected children and approximately yy pediatric nurses who could potentially be required to recognize VPS failure.	In development.
<i>Virtual Reality Simulation Training in Pediatric Resuscitation- The New Frontier</i>	<i>Joshua Sherman and Todd Chang</i>	Children's Hospital Los Angeles	Can we train, teach, practice and assess pediatric resuscitation medicine in a 360/ 3D fully immersive environment?	In development.
<i>Pediatric and Med-Peds Resident Resuscitation Quality Improvement</i>	<i>Cena Tejani, Shamyra Farrukh</i>	Newark Beth Israel, Children's Hospital of NJ	Pediatric mock code simulation program.	In development.
<i>The utilization of just-in-time simulation in optimizing the quality of rapid response calls and resident contingency planning</i>	<i>Taylor Wheaton, Kheyandra Lewis, Emmanuelle Topiol, Sharon</i>	St. Christopher's Hospital for Children, Philadelphia, PA	In Pediatric residents at St. Christopher's, do six months of weekly just-in-time simulation improve the quality of rapid response calls and of contingency planning on written handoff	Final data analysis is underway. Discussions for multi-institutional collaboration.



	<i>Calaman</i>		document.	Potential expansion to critical care services.
<i>Performance-based Competency in Interpreting Pediatric MSK Radiographs</i>	<i>Martin Pusic</i>	New York University	Prospective calibration cohort study to generate item difficulty ratings using IRT	In development.
<i>Multisite outreach simulation education to improve premature infant admission temperatures</i>	<i>Bobbi J. Byrne MD, Alana Barbato MD</i>	Indiana University School of Medicine	Project proposal under revision.	In development
<i>Cultural Prototypes and Differences in Simulation Debriefing</i>	<i>Francis Ulmer</i>	Insel University Hospital Bern, Switzerland	Cross-sectional survey study of experienced simulation debriefers worldwide (convenience sample).	In development.

### INSPIRE Projects Presented in 2016

Project	Lead Investigator	Lead Institution	Description	Current Status
Team Leadership During Neonatal Resuscitation	Noorjahan (Nora) Ali	University of Colorado – Children’s Hospital of Colorado	Over 12 months we aim to improve identification of team leader during actual resuscitation in CHCO NICU from 51% to 80% through the use of educational methods that focus on key elements of team leadership.	In development
The impact of telemedicine on teamwork, communication, and clinical performance: a randomized controlled trial	Lucas Butler	Yale School of Medicine	To compare teamwork and communication as well as clinical performance between teams with telepresent vs. bedside team leaders during simulated pediatric resuscitations.	Manuscript Submitted
In situ Simulation Education For Families of Chronically Ill Survivors of Critical Illness	Sandeep Gangadharan	Cohen Children’s Center	To provide education to caregivers to improve quality of life for children who are chronically ill.	In development
In situ Simulation to Detect Latent Safety Threats in Process of Critical Care	Sandeep Gangadharan	Cohen Children’s Centre	To develop a safe transport system for critical care transport.	In development



# INSPIRE NETWORK REPORT

2016-2017

Transport				
Rapid Cycle Deliberate Practice as a Method to Improve Airways Management Skills in Pediatric Residents.	Isabel T Gross	University of South Florida	Methods need to be identified to optimize instructional simulation design to achieve goals of the simulation learner. RCDP as a method of simulation debriefing has been show to improve pediatric resident resuscitation skills. Micro-debrief with reflection-on-action “pause and discuss/rewind” as a form of post-event debriefing may be differentiated from micro-debriefing with the event with reflection-in-action.	Study Complete.
Improving Success Rates of Neonatal Lumbar Punctures Through Positioning	Scott Herskovitz	Inova Children’s Hospital	Recent studies with ultrasound demonstrate that the greatest interspinous space achieved was in seated position with flexion of hips. Decreased o2 saturations most notable in the lateral decubitus position with knees to chest. Success amongst novices range from 35 – 50%.	In development
PALS on Demand in Skill Training	Hye-Young Jang	The Center for Simulation, Advanced Education and Innovation at the Children’s Hospital of Philadelphia	“PALS deconstructed” study showed on the job/in situ training program was not inferior to conventional PALS recertification. Heartcode can cover cognitive knowledge skills education and testing. Resuscitation Quality Improvement (RQI) care is developed to frequently provide PALS psychomotor skills. On the job/in situ simulation and post-event debriefing can cover communication/teamwork skills.	In development
A Prospective Study Investigation the Measurement of Biometric Parameters of Critical Care Practitioners in Various Clinical Scenarios Using the Wearable Performance	Nicholas Slamon	Nemous/duPont Hospital for Children	The measurement of biometric parameters in critical care physicians in various work scenarios has never before been reported. This study hopes to first describe the biometrics of critical care practitioners in simulated	manuscript preparation in progress



# INSPIRE NETWORK REPORT

2016-2017

Tracking Device Known as Hexoskin.			stressful environments and explore if biofeedback can alter those parameters	
Teaching Infant CPR in the Pediatric Emergency Department	Joo Lee Song	Children's Hospital Los Angeles	No prior study has been conducted that looks at VSI (video self-instruction) infant CPR training completed in a pediatric emergency department setting. Laypersons may learn BLS in 24 minutes vs. 6 hour course.	Completed ED enrollment. Continuing Inpatient enrollment.
Factors Associated With High Quality Pediatric Care by Paramedics Using In-situ Simulation	Barbara M Walsh	Cohens/Hofstra, UMASS	Paramedic protocols differ from state to state. EMS groups vary widely in composition and experience. Exposure to critical events is low frequency/high stakes. Pediatric training is limited but highly desired.	In development
Improving Pediatric Acute Care in Community EDs Through Collaborative Simulation	Travis Whitfill	Yale University	This project provides elucidated areas for improvement at both provider and systems level. This proposal is to leverage these findings to serve as a needs assessment to inform the development of an effective low cost pediatric resuscitation improvement program (PRIP) compared to PECC alone.	In development

## INSPIRE Projects Presented in 2015

Project	Lead Investigator	Lead Institution	Description	Current Status
The use of Leaderboards & Competition to improve self-initiated CPR training	T. Chang	Children's Hospital Los Angeles	International, multi-institutional randomized control-crossover study examining the effect of a competitive leaderboard on usage frequency and performance on simulated CPR skills.	Study Complete. Manuscript submitted.
Resuscitating Teamwork and Safety Using Acute Event Debriefing	M. Moga	Ann & Robert H. Lurie Children's	Nurse-led, acute event debriefing for patients suffering cardiac arrest in the ICU.	In development.



# INSPIRE NETWORK REPORT

2016-2017

		Hospital of Chicago		
The effect of summative feedback on the accuracy of provider perceptions and the quality of CPR during a simulated pediatric cardiac arrest	L. Brown	University/ Hasbro Children's Hospital	CPR certified healthcare providers; 1) summative feedback re: quality of CPR; 2) HCP with no summative feedback. Test improved quality of CPR and improved accuracy of HCP perceptions.	In development.
The use of Leaderboards & Competition to improve High School CPR training	R. MacKinnon	Royal Manchester Children's Hospital	Examining the effect of a competitive leaderboard on usage frequency and performance on simulated CPR skills in highschools.	Study Complete. Manuscript submitted.
Integrating Cognitive Aids (INCA)	D. Bould	Children's Hospital of Eastern Ontario, University of Ottawa	Use of knowledge-based cognitive aids in interprofessional teams.	PSI funding received. Recruitment.
Pediatric Simulation in Rural India: PedSRI Study	S. Thyagarajan	PediSTARS India	Develop a structured Simulation training program to address recognition, stabilization and transfer to a higher centre & study the impact on patient outcomes.	In development.
NRP eSimulation	A. Ades	Children's Hospital of Philadelphia	Comparison of eSim to video review to no training after initial NRP course for enhancing retention at 6 months.	Enrolling participants.
Measurement of Stress Levels in Simulation and the Impact of Stress on Performance: Announced Versus Unannounced Simulation Based Training	S. Lyons	Bristol Medical Simulation Centre	Measuring Impacts of stress on performance, and physiological and biochemical changes associated with the stress response using announced versus unannounced simulation based training.	In development.



# INSPIRE NETWORK REPORT

2016-2017

Development of a Pediatric Simulation Curriculum and Database Collaborative	T. Stavroudis	Children's Hospital Los Angeles	To form a pediatric simulation curriculum collaborative to establish a core group of educators and simulationists to build a credentialed, centralized pediatric simulation scenario platform and database that utilizes the ABP Board Content Specifications and ACGME Core Competencies and Developmental Milestones as the core principles of the curriculum.	Establishing infrastructure and identifying grant sources.
Script Assisted Feedback to Educate (SAFE Tool)	E. Sigalet	Sidra Research and Medical Center	Testing the SAFE tool to support debriefers in using a structured approach with all forms of feedback to optimize learning.	Research design in development.
Improving the quality of team training and performance during interprofessional in situ mock code blue simulations: A randomized controlled mixed-methods study	C. Walsh	Hospital for Sick Children	Comparing just in time training to no training for interprofessional teams in mock in-situ code blue simulations.	Data collection complete. Manuscript preparation in progress.

## INSPIRE Projects Presented In 2014

Project	Lead Investigator	Lead Institution	Description	Current Status
Improving Basic Life Support and Outcomes from Cardiac Arrest: Implementation and Evaluation of the American Heart Association's Resuscitation Quality Indicator (RQI) CPR Training Program	A. Cheng	Alberta Children's Hospital	The objective of this study is to evaluate the effectiveness of the AHA's RQI program when compared with traditional annual BLS recertification (for pediatric healthcare providers).	Study Complete. Published.
Development of simulation-based assessment tools for the general pediatrics milestones	L. Mallory	Maine Medical Center	Will use a modified Delphi method with group of pediatric simulation experts and program directors to identify priority areas for simulation-based assessment aligned with the ACGME Next Accreditation System Pediatric	Study Complete. Published.



# INSPIRE NETWORK REPORT

## 2016-2017

			Specialty Milestones.	
Use of Simulation in Limited Resource Countries. How can it be done?	D. Moro-Sutherland	Texas Children's Hospital	<p>Two projects have come out of the original presentation during the INSPIRE meeting at IMSH 2014.</p> <ol style="list-style-type: none"> <li>1. Education through low-cost simulation in the global health arena</li> <li>2. Use of Simulation in Limited Resource Countries: How can it be done?</li> </ol>	<ol style="list-style-type: none"> <li>1. Low cost sim repository housed b/w Open Pediatrics &amp; IPSS.</li> <li>2. Low cost sim cases written. Pilot in Feb 2016. Incorporate sim into curriculum by summer 2016.</li> </ol>
Handheld High Fidelity Simulation Training For IV Catheterization	D. Weiner M. Ottensmeyer	Boston Children's Hospital/Harvard Medical School	Build/use handheld high fidelity haptic simulation training device to teach PIV catheterization anywhere, anytime independent of infrastructure. Plan to compare to traditional methods of learning i.e. IV arm, instructor.	INSPIRE multicenter study in planning stage.
The effect of random leader role assignment on task and team performance during CPR	S. Ambati	Cohen Children's Medical Center of NY, NSLIJ	The main aim of this project is to show pre-designated leader role will improve team performance and to see whether physician or the nurse in the leader role will make a difference. Intervention-groups that has pre-designated leader role. Control – No leader role.	Recruitment in progress.
A Virtual Pediatric Simulator (VPS) For Emergency Scenario Training of Military Medical Personnel	J. Gerard	Saint Louis University	Project funded by the ONR to develop a game-based virtual reality simulator for training on high-stakes pediatric emergency medicine scenarios.	Game completed. Multicenter study completed, publication accepted.
Resuscitation Review to Guide Educational Interventions	A. Ruscica D. Kessler	Morgan Stanley Children's Hospital, Columbia	Pediatric Emergency medicine practitioners will identify a variety of key points learned or reviewed during resuscitations they have been involved in. These key points	Study Complete.





# INSPIRE NETWORK REPORT

2016-2017

		University, New York	identified during resuscitations will be areas that the rest of the pediatric emergency staff would like more education on and identify as low self-efficacy topics.	
Improving realism of PALS-courses with smart simulation tools & children	W. Burkhard et al	PSRCS Pediatric Simulation Research  Collab. Southtyrol	Currently only use BLS and ALS mannequins during PALS courses. Introduce tablet patient monitors an all PALS stations. Use of real sound sequences on 2 of 3 practical stations comparing learning outcomes of students in differently equipped teaching stations. Integration of real children. Change of skin color.	Research protocol in development.
Simulation using the PECARN Head Trauma Rule to Reduce CT Imaging	K. Ching	New York Presbyterian Hospital – Weill Cornell Medical Center,  Mount Sinai Hospital	Limiting unnecessary CT scans for children with head trauma. PECARN clinical prediction rule helps identify children with very low risk for TBI (Traumatic Brain Injury). Objective of this trial is to develop a pediatric simulation exercise illustrating the use of the PECARN clinical prediction rule.	Second year of pilot study is complete. Now enrolling subjects for multi-center prospective randomized control educational intervention study involving 6 sites.



### INSPIRE Research Project Funding for INSPIRE Network Members from 2015-2017

Year	Project and Funding Agency
2017-2020	The Health Education Neuroassessment Laboratory (THENaL) With: Adam Cheng (Co-I), Alberta Children's Hospital Funded by: John R Evans Leaders Fund, Canada Foundation for Innovation \$380,000 CAD
2017-2020	<i>Improving Cardiac Arrest Outcomes with Resuscitation Research (iCORE): Exploring the role of data-informed debriefing, digital charting, and situational awareness</i> With: Adam Cheng (PI), Alberta Children's Hospital Funded by: Alberta Children's Hospital Research Institute and the Alberta Children's Hospital Foundation \$346,000 CAD
2017-2019	<i>Analysis of variables contributing to bystander CPR rates in out-of-hospital cardiac arrest</i> With: Adam Cheng (Co-I), Alberta Children's Hospital Funded by: Heart and Stroke Foundation of Canada \$40,000 CAD
2017-2019	<i>Improving patient safety during pediatric resuscitation: team performance and error</i> With: Adam Cheng (Co-I), Alberta Children's Hospital Funded by: Maternal Newborn and Child Youth Strategic Clinical Network, Healthy Outcomes \$49,818 CAD
2017-2019	<i>ImPACTS: Improving Pediatric Acute Care Through Simulation</i> With: Dr. Kamal Abulebda (PI), Dr. Travis Whitfill (Co-I), Yale University Funded by: Rbaby Foundation Grant \$150,000 USD
2017-2018	<i>Dynamic vs Static Images for Learning Intussusception Ultrasound interpretation</i> With: Dr. David Kessler (PI), Columbia University College of Physicians & Surgeons Funded by: Rbaby Foundation \$80,000 USD
2017-2018	<i>Improving Cardiac Arrest Outcomes with CPR Coaching</i> With: Adam Cheng (PI), Alberta Children's Hospital Funded by: Alberta Children's Hospital Research Institute and The Office of the Associate Dean of Research, Enhanced Bridge Funding Program, Cumming School of Medicine \$20,000 CAD
2017	<i>QCPR Feedback Trial: Comparison of different feedback methods during randomized pediatric resuscitation training</i> With: Dr. Michael Wagner (PI), Medical University of Vienna Funded by: Laerdal Foundation \$18,288 USD
2017	<i>Improving Pediatric Acute Care Through Simulation (ImPACTS)</i> With: Dr. Wendy Van Ittersum (PI), Akron Children's Hospital Funded by: Akron Children's Hospital Foundation Grant \$15,000 USD



# INSPIRE NETWORK REPORT

## 2016-2017

<b>2017</b>	<p><i>Generalizing TESTPILOT</i>            With: Dr. G. Jesse Bender (PI), Rita Dadiz (Co-I), Beverley Robin (Co-I)            Funded by: Agency for Healthcare Research and Quality (1R18HS023460)</p>
<b>2016-2017</b>	<p><i>ImPACTS</i>            With: Kamal Abulebda, Marc Auerbach (PI), Yale University            Funded by: Indiana University            \$120,000 USD</p>
<b>2016-2017</b>	<p><i>Evaluation of National Resuscitation Quality Improvement Implementation in the UK</i>            With: Prof. Ralph MacKinnon (PI) Royal Manchester Children's Hospital            Funded by Laerdal &amp; British Heart Foundation            £50,000 UK</p>
<b>2016-2017</b>	<p><i>Crisis Resource Management</i>            Overall goal: To develop a massive open online course for "Crisis resource management"            With: Dr. David Kessler (Co-investigator), Columbia University College of Physicians &amp; Surgeons            Funded by: Provost's Massive Open Online Course Request for proposal (PI: Moitra), Columbia University            \$25,000 USD</p>
<b>2016-2017</b>	<p><i>An Adaptive Tutor for Improving Visual Diagnosis</i>            With: Dr. Martin Pusic (PI), NYU School of Medicine            Funded by: U.S. Department of Defense            \$1.4M USD</p>
<b>2016-2017</b>	<p><i>Health Care by the Numbers Curriculum</i>            With: Dr. Marc Triola (PI), NYU School of Medicine            Funded by: American Medical Association            \$1M USD</p>
<b>2016-2017</b>	<p><i>The use of rapid cycle deliberate practice in crisis resource management skill acquisition: a prospective pre-post interventional study</i>            With: Adam Cheng (PI), Alberta Children's Hospital            Funded by: Department of Pediatrics Innovation Grant, Cumming School of Medicine, University of Calgary            \$12,600 CAD</p>
<b>2016-2017</b>	<p><i>Simulation-based regional training of pre-hospital first responders on infant delivery and stabilization</i>            With: Drs. Melissa Carmen and Rita Dadiz (PDs), University of Rochester Medical Center            Funded by: American Academy of Pediatrics District Education Grant            \$1,000 USD</p>
<b>2016-2020</b>	<p><i>Improving the Safety of Pediatric Tracheal Intubations in ICUs</i>            With: Dr. Vinay Nadkarni (PI), Children's Hospital of Philadelphia            Funded by: 1R18HS024511 AHRQ</p>
<b>2016-2019</b>	<p><i>Advancing Family Centered Care and Quality Self-Assessment for Pediatric Resuscitation Readiness</i>            With: Dr. Travis Whitfill (Co-I), Yale University            Funded by: Health Resources and Services Administration in the United States            \$250,000</p>
<b>2016-2019</b>	<p><i>Implementing Simulation Based Education in Managing Maternal Newborn and Child Health Emergencies in a Resource-Constrained Setting: A Global Health Initiative to Save Lives in East Africa (SIM for Life)</i>            With: Dr. Adam Cheng (Senior Investigator), Alberta Children's Hospital and University of Calgary            Funded by: ELMA Philanthropies Foundation            \$1,089,602 CAD</p>



# INSPIRE NETWORK REPORT

2016-2017

<b>2016-2019</b>	<p><i>Implementing Simulation Based Education in Managing Maternal Newborn and Child Health Emergencies in a Resource-Constrained Setting: A Global Health Initiative to Save Lives in East Africa (SIM for Life)</i>            With: Dr. Adam Cheng (Senior Investigator), Alberta Children's Hospital and University of Calgary            Funded by: Laerdal Foundation for Acute Medicine            \$630,00 CAD</p>
<b>2016-2019</b>	<p><i>Improving Rural Pediatric Emergency Care Through Tele-Simulation</i>            With: Dr. Jessica Katznelson (PI), Johns Hopkins University            Funded by: AHRQ            \$250,000 USD (costs per year)</p>
<b>2016-2017</b>	<p><i>Simulation-based regional training of pre-hospital first responders on infant delivery and stabilization</i>            With: Dr. Rita Dadiz and Dr. Melissa Carmen (PIs), University of Rochester Medical Center            Funded by: American Academy of Pediatrics District Education Grant            \$4,000.00</p>
<b>2016-2017</b>	<p><i>Global development of CPR as a Life Skill for High School Leavers</i>            With: Dr. Ralph MacKinnon (PI), Royal Manchester Children's Hospital, Central Manchester University Hospitals NHS Foundation Trust            Funded by: Laerdal Foundation            £12,000 GBP</p>
<b>2016-2017</b>	<p><i>Project Title: Improving Cardiac Arrest Outcomes with Resuscitation Research (iCORE)</i>            With: Adam Cheng (PI), University of Calgary            Funded By: Office of the Associate Dean of Research, Enhanced Bridge Funding Program, Cumming School of Medicine            \$25,000 CAD</p>
<b>2016-2017</b>	<p><i>Optimal Serial Training Frequency for Attainment and Maintenance of High-Quality CPR using Real-Time Automated Performance Feedback Combined with Verbal Feedback from a CPR Instructor</i>            With: Rob Anderson (PI), Northern Ontario School of Medicine, Adam Cheng, Alberta Children's Hospital            Funded by: Northern Ontario Academic Medicine Association, Clinical Innovation Opportunities Grant            \$50,000 CAD</p>
<b>2016-2017</b>	<p><i>Enhancing Medicosurgical Manual Skill Learning with Transcranial Direct Current Stimulation</i>            With: Adam Cheng (PI), Alberta Children's Hospital            Funded by: Health Science and Medical Education Research and Innovation Grant, Office of Health and Medical Education Scholarship, University of Calgary            \$9,915 CAD</p>
<b>2016-2017</b>	<p><i>A Simulation-based Intervention Teaching Illness Management Skills to Caregivers of Children with Adrenal Insufficiency: a Randomized Controlled Study</i>            With: Vincent Grant and Adam Cheng, Alberta Children's Hospital            Funded by: Department of Pediatrics Innovation Grant            \$24,260 CAD</p>
<b>2016</b>	<p><i>Development of Simulation-Based Tools for the Assessment of Interprofessional Teamwork in Pediatric Residents</i>            With: Leah Mallory (PI), Barabara Bush Children's Hospital, Zia Bismilla, SickKids, Pavan Zaveri, Children's National Health System, Tehnaz Boyle, Boston Medical Center, Wendy Van Ittersum, Akron Children's Hospital, Marjorie Lee White, Children's Hospital Alabama, Karen Mangold, Northwestern University            Funded by: 2016 Maine Medical Center Educational Innovations Grant            \$20,000 USD</p>



# INSPIRE NETWORK REPORT

2016-2017

<b>2016</b>	<p><i>Connecticut Emergency Medical Services State Partnership Grant</i>            With: Dr. Marc Auerbach (PI), Pina Violano (PI), Marcie Gawel RN (PI), Dr. Mark Cicero (PI), Yale University            Funded by: HRSA: MCHB: EMSC SP Grant            \$130,000 USD (costs per year)</p>
<b>2016</b>	<p><i>Disaster Preparedness and Response, CT Statewide Pediatric Disaster Coalition</i>            With: Dr. Mark Cicero, Pina Violano, Marc Auerbach, James Parker, Yale University            Funded by: American Academy of Pediatrics and Center for Disease Control            \$5,000 USD(costs per year)</p>
<b>2015-2018</b>	<p><i>Consolidating tools for outcomes in resuscitation (CONTOUR)</i>            With: Dr. Dylan Bould (PI), Dr. Sylvain Boet, University of Ottawa, Dr. Farhan Bhanjji, Montreal Children's Hospital, Dr. Adam Cheng, Alberta Children's Hospital and University of Calgary, Dr. Marc Auerbach, Yale University, Dr. Linda Brown, Hasbro            Funded by: Physicians' Services Incorporated Foundation            \$248,500 CAD</p>
<b>2015-2018</b>	<p><i>PALS RQI Pilot-Test of instructorless skills course delivery system for PALS training and maintenance of skills</i>            With: Dr. Vinay Nadkarni (PI), Children's Hospital of Philadelphia            Funded by: American Heart Association</p>
<b>2015-2017</b>	<p><i>In-hospital QCPR Competition: An International Leaderboard Study</i>            With: Dr. Todd Chang (Collaborator), Children's Hospital Los Angeles            Funded by: American Heart Association            \$200,000 USD (costs per year)</p>
<b>2015-2017</b>	<p><i>North West School's development of a global CPR life skill's initiative</i>            Prof. Ralph MacKinnon (PI), Royal Manchester Children's Hospital, Central Manchester University Hospitals NHS Foundation Trust            Funded by: Enhancing Learning Environments for the support of NHS funded Healthcare education / Training programmes, Forerunner Fund, Health Education North West            £75,000 GBP</p>
<b>2015-2017</b>	<p><i>Improving paediatric trauma care through targeted onsite simulation and crisis checklist implementation – "a child and hospital centred Paediatric Trauma Program"</i>            With: Ralph MacKinnon (PI), Royal Manchester Children's Hospital, Central Manchester University Hospitals NHS Foundation Trust            Funded by: Enhancing Learning Environments for the support of NHS funded Healthcare education / Training programmes, Forerunner Fund, Health Education North West            £75,000 GBP</p>
<b>2015-2017</b>	<p><i>The Effect of a New Training Program on CPR Quality of Paediatric Healthcare Providers: A Randomized Trial with Economic Evaluation</i>            With: Dr. Adam Cheng (PI), Alberta Children's Hospital and University of Calgary            Funded by: The Royal College of Physicians and Surgeons of Canada, Medical Education on Research Grant            \$50,000 CAD</p>
<b>2015-2017</b>	<p><i>Teaching and Assessing Cost- and Time-effective Patient Care using Serious Gaming Strategies</i>            With: Dr. Todd Chang (PI), Children's Hospital Los Angeles            Funded by: Stemmler Fund, National Resident Matching Program            \$150,000 USD</p>



# INSPIRE NETWORK REPORT

## 2016-2017

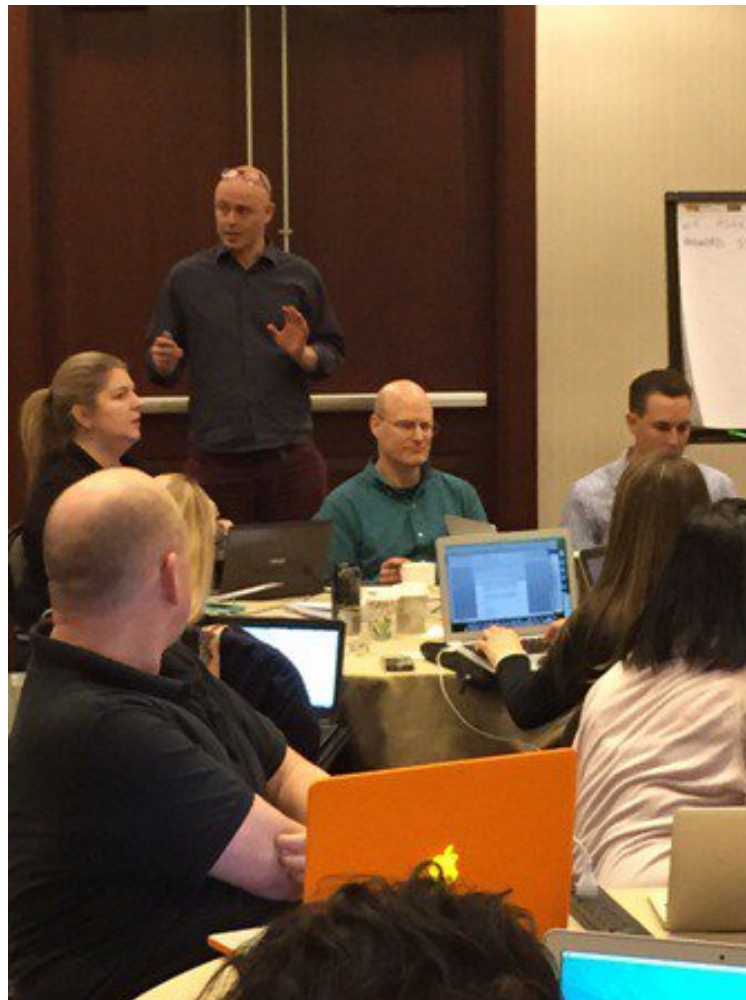
<b>2015-2017</b>	<p><i>Using leaderboards to improve CPR simulation practice among healthcare professionals</i>            With: Dr. Todd Chang (PI), Children's Hospital Los Angeles            Funded by: American Heart Association Western States Affiliates Grant-in-Aid            \$140,000 USD</p>
<b>2015-2017</b>	<p><i>Leaderboards for Improving CPR Training in Schools</i>            With: Dr. Ralph MacKinnon, Royal Manchester Children's Hospital            Funded by: Health England Research Grant            \$100,000 USD</p>
<b>2015-2016</b>	<p><i>Neonatal Intubation Competency Assessment Tool (NICAT): Development and Validation Study</i>            With: Drs. Zia Bimsilla, Emer Fian, Catharine Walsh, University of Toronto            Funded by: Canadian Pediatric Society Neonatal Resuscitation Program Grant            \$25,000</p>
<b>2015-2016</b>	<p><i>Improving paediatric trauma care through targeted onsite simulation and crisis checklist implementation – a child and hospital centred Paediatric Trauma Program</i>            With: Prof. Ralph MacKinnon (PI), Royal Manchester Children's Hospital, Central Manchester University Hospitals NHS Foundation Trust            Funded by: Royal Manchester Children's Hospital            £10,000 GBP</p>
<b>2015-2016</b>	<p><i>Optimizing Integration of CPR Feedback Technology with CPR Coaching for Cardiac Arrest</i>            With: Dr. Adam Cheng (PI), Alberta Children's Hospital and University of Calgary            Funded by: Heart and Stroke Foundation of Alberta Seed Grant            \$45,000 CAD</p>
<b>2015-2016</b>	<p><i>Improving CPR Quality of Pediatric Healthcare Providers with Longitudinal Training and Real-Time CPR Feedback: A Randomized Trial with Economic Evaluation</i>            With: Dr. Adam Cheng (PI), Alberta Children's Hospital and University of Calgary            Funded by: Department of Pediatrics Innovation Grant            \$24,932 CAD</p>
<b>2015-2016</b>	<p><i>Pilot Evaluation of a Novel CPR Feedback Device in PICU: Can We Improve the Quality of CPR we Deliver to Patients?</i>            With: Dr. Adam Cheng (PI), Alberta Children's Hospital and University of Calgary            Funded by: Department of Pediatrics Innovation Grant            \$23,020 CAD</p>
<b>2015-2016</b>	<p><i>INSPIRE Network Training for Pediatric Emergency Care</i>            With: Dr. David Kessler (PI), Columbia University College of Physicians &amp; Surgeons            Funded by: RBaby Foundation            \$55,318 USD</p>
<b>2014-2018</b>	<p><i>Assessing Simulation in Pediatrics: Improving Resuscitation Events: KidSIM-ASPIRE Simulation Research Program Infrastructure Grant</i>            With: Dr. Adam Cheng (PI), Alberta Children's Hospital and Dr. Vincent Grant, University of Calgary            Funded by: Alberta Children's Hospital Research Institute, Alberta Children's Hospital Foundation and Department of Pediatrics Research Grant            \$150,000 CAD</p>



# INSPIRE NETWORK REPORT

## 2016-2017

<b>2014-2018</b>	<i>Pediatric Cardiac Arrest and Resuscitation Quality (pedRES-Q) Collaborative Learning Laboratory</i> With: Dr. Vinay Nadkarni (PI), Children's Hospital of Philadelphia Funded by: Zoll Corporation and Foundation
<b>2014-2017</b>	<i>Computer-based simulation Pediatric disaster Triage Training for Emergency Medical Services Providers</i> With: Dr. Mark Cicero ( Content expert on simulation-based instructional design) Funded by: AHRQ \$750,000 USD
<b>2013-2017</b>	<i>Infant Simulation Program for In-hospital Resuscitation Education - in the Delivery Room (INSPIRE-DR)</i> With: Dr. Vinay Nadkarni (Co-I), Children's Hospital of Philadelphia Funded by: R18 HS022469-01 AHRQ





## INSPIRE Success Stories

### **The International Simulation Data Registry**

*Aaron Calhoun*

The International Simulation Data Registry (ISDR) was developed in 2014 and has grown ever since. The ISDR archives data from cardiac arrest, difficult airway, and malignant hyperthermia simulations, which can then be used for programmatic benchmarking, quality improvement, and research. With 37 current member programs, the ISDR has archived data from over 750 individual simulation sessions. A publication describing the organization's development is currently undergoing peer review.

In late 2017, ISDR and INSPIRE executives formalized a partnership agreement between the two organizations. By doing so the leaders of both organizations hope to open up further avenues for collaborative research that directly improves the education we offer our trainees and ultimately improves the care of children worldwide.

### **Emergency Medical Services for Children (EMSC)**

*Marc Auerbach*

ImpACTS (Improving Pediatric Acute Care Through Simulation) was created to ensure that ill and injured children receive the highest quality of emergency care whenever and wherever it is needed. In the US there are over 5000 general emergency departments and approximately 300 emergency departments dedicated to the care of only children. 90% of the 31 million children cared for in US emergency departments each year present to community emergency departments, where the majority of the patients are adults. Many of these hospitals may not be optimized to care for the sickest pediatric patients and/or have access to pediatric subspecialists. Through ImpACTS academic medical centers collaborate with one another and community hospitals to improve pediatric care. The program has expanded across the US, Canada and the EU to include over 80 hospitals, 160 teams and 1000 providers caring for over 1 million patients per year!

Our research data has demonstrated improvements in the structure and process of care. As we have grown ImpACTS has received communications from sites attributing our work to CHILDRENS LIVES SAVED! An example was a drowning patient who had a fully intact outcome after being cared for at a hospital engaged in our program. Similar SAVES have been reported for patients with sepsis, airway obstructions and seizures. While these are not "rigorous research" they invigorate our team each time we receive them (this is why we do what we do). Over the past year we have started work with a pilot set of hospitals to collect real patient outcomes data in a more structured way that we intend to expand across our network.





### INSPIRE Abstracts (Poster, Oral), Workshops, and Presentations 2016-2017

1. Lin Y, Wan B, Belanger C, Hecker K, Gilfoyle E, Davidson J, Cheng A. Assessing PICU Mattress Compressibility with a Standard Backboard and Real-time Feedback: a Simulation-based study. Royal College Simulation Summit. Montreal, Canada. Nov 1, 2017.
2. MacKinnon RJ (Keynote Speaker) "Is your hospital ready to receive paediatric trauma FACT study" CEPS Conference Jonkoping University, Sweden, October 2017
3. Q CPR Feedback Trial: Comparison of different feedback methods during randomized pediatric resuscitation training IPSSW, Southampton, UK, 09/2017 - **Best Presentation Award**
4. Howard N, Pusic M, Rose R, Cook D. Learning Curves in Health Professions Education Research: A Systematic Review. Presented at: Association for Medical Education in Europe (AMEE) 2017 Symposium; 2017 August 26-30; Helsinki, Finland
5. Quirk M, Cutrer W, Pusic M, Gaglani S. Features of an Adaptive Learning Curriculum for Medical Education. Presented at: Association for Medical Education in Europe (AMEE) 2017 Symposium; 2017 August 26-30; Helsinki, Finland
6. MacKinnon RJ (Keynote Speaker) "Is your hospital ready to receive paediatric trauma FACT study" Countdown to Patient Safety, Lancaster University, UK July 2017
7. Kessler D, Duff J, Whitfill T, Gross I, Auerbach M. New reporting guidelines for simulation-based research in healthcare: how to write and report a simulation-based research study. Pre-conference Workshop, International Pediatric Simulation Society Workshop and Symposia. Boston, MA. 2017.
8. Walsh B, Auerbach M, Gangadharan S, Katz-Nelson J, Whitfill T, Hamilton M, Gawel M. Train the trainer: mobile simulation connecting academic & community sites to bridge gaps in care. Workshop, International Pediatric Simulation Society Workshop and Symposia. Boston, MA. 2017.
9. Biddell E, Estephan S, Nagy K, Van Ittersum W. Beyond Procedures: Designing a Comprehensive Boot Camp Experience. Workshop Presentation. International Pediatric Simulation Symposia and Workshops, Boston, MA, June 2017.
10. Van Ittersum W, O'Connell L. A Novel Approach to Increased Fidelity for Neonatal Circumcision. Poster: International Pediatric Simulation Symposia and Workshops, Boston, MA, June 2017.
11. Bismilla Z, Boyle T, Mangold K, Van Ittersum W, White M, Zaveri P, Mallory L. Development of a simulation-based interprofessional teamwork assessment tool for residents. Oral Presentation: International Pediatric Simulation Symposia and Workshops, Boston, MA, June 2017.
12. Pusic M, Kessler D. On the "Need for Speed": Pros and Cons of Using Speeded Practice in Simulation Education. Presented at: International Pediatric Simulation Symposia and Workshop (IPSSW); 2017 June 1-3; Boston, MA, June 2017.



13. Doughty CB, Welch-Horan TB, Villareal N, Pham N, Davis C, Patricia KE, Arnold JL, Rus M, Lemke DS. Rapid Cycle Deliberate Practice for Interprofessional Teams. Workshop presentation, 9th International Pediatric Simulation Symposia and Workshops, Boston, MA, June 2017.
14. Cheng A, Belanger C, Wan B, Davidson J, Lin Y. Effect of Emergency Department Mattress Compressibility on Chest Compression Depth using a Backboard, Slider Transfer Board and Flat Spine Board: A Simulation-based Study. International Pediatric Simulation Symposium and Workshops, Boston, USA. June 1, 2017.
15. Ciechanski P, Cheng A, Damji O, Lopushinsky S, Kirton A. Enhancing Laparoscopic Skill Acquisition and Retention with Transcranial Direct-Current Stimulation. International Pediatric Simulation Symposium and Workshops, Boston, USA. June 1, 2017.
16. Lin Y, Wan B, Belanger C, Hecker K, Gilfoyle E, Davidson J, Cheng A. Assessing PICU Mattress Compressibility with a Standard Backboard and Real-time Feedback: a Simulation-based study. International Pediatric Simulation Symposium and Workshops, Boston, USA. June 1, 2017.
17. Kennedy, C, MacKinnon RJ, Toy, S & Aitken D. Implementation of the FACT: Five to Survive.
18. Poster (prize winner) International Pediatric Simulation Society Symposia and Workshops, Boston May, USA 2017
19. Stoddard H, Pusic M, Cestone C, Cook D. Are Educational Informatics the Future of Medical Education? Or Another Niche Trend? Presented at: Society of Directors of Research in Medical Education (SDRME) Meeting; 2017 May 21-23; Orlando, FL.
20. Fairbrother H, Pusic M. Establishing Competency Thresholds for ECG Interpretation by Emergency Medicine Clerkship Students. Presented at: Society for Academic Emergency Medicine Meeting; 2017 May 16-19; Minneapolis, MN
21. Arnold C, Walden B, Burhans K, Dadiz R. Development of a multicenter interprofessional shoulder dystocia simulation-based training program for neonatal injury prevention. Poster: New York State Perinatal Association, Albany, NY, 2017.
22. Carmen M, Dadiz R. A program to train providers in the use of telemedicine during neonatal resuscitation. Platform presentation: Northeastern Group on Educational Affairs, Association of American Medical Colleges, Rochester, NY, 2017.
23. Yoon JS, Boutis K, Pecaric M, Ericsson KA, Pusic M. A Cognitive Model of Learning During Practice of Radiograph Interpretation: Implications for the Design of Deliberate Practice. Presented at: Northeast Group on Educational Affairs (NEGEA) Annual Retreat; 2017 May 4-6; Rochester, NY
24. Cirigliano M, Guthrie C, Pusic M. Click-Level Learning Analytics in an Online Medical Education Learning Platform. Presented at: Northeast Group on Educational Affairs (NEGEA) Annual Retreat; 2017 May 4-6; Rochester, NY
25. Fairbrother H, Tempesta C, Poles J, Hatala R, Triola M, Pusic M. Establishing Competency Thresholds for ECG Interpretation by Emergency Medicine Clerkship Students. Presented at: Northeast Group on Educational Affairs (NEGEA) Annual Retreat; 2017 May 4-6; Rochester, NY



26. Dadiz R, Riccio J, Brown K, Emrich P, Robin B, Bender J. Qualitative study of latent safety threats identified during team simulations before transition into a single-family-room NICU. E-PAS 2017;4135.2. Poster: Pediatric Academic Societies, San Francisco, CA, 2017.
27. Jee SH, Baldwin C, Dadiz R, Alpert-Gillis L. Promoting an experiential integrated mental health curriculum for pediatric residents and psychology interns/fellows. Poster: Northeastern Group on Educational Affairs, Association of American Medical Colleges, Rochester, NY, 2017.
28. Jee S, Baldwin C, Dadiz R, Jones MR, Alpert-Gillis. Development and evaluation of an integrated mental health curriculum for pediatric residents and psychology interns/fellows. Poster: Pediatric Academic Societies. San Francisco, CA, 2017.
29. Jones MR, Alpert-Gillis, Baldwin C, Dadiz R, Jee S. Using simulated patient encounters with interprofessional teams to teach integrated behavioral health in a primary care medical home. Poster: Pediatric Academic Societies, San Francisco, CA, 2017
30. Stanley RM, Whitfill T, Scherzer DJ, Shi J, Xian H, Auerbach M. Emergency care for children in the US: Epidemiology and trends over time. Poster Presentation, Pediatric Academic Society. San Francisco, CA. 2017.
31. Whitfill T, Gawel M, Violano P, Cicero M, Auerbach M. Improvement in EMSC Pediatric Readiness in hospitals participating in a simulation-based quality improvement collaborative. Poster Presentation, Pediatric Academic Society. San Francisco, CA. 2017.
32. Tay Y, Butler L, Whitfill T, Auerbach M, Lavoie M. Pennsylvania prehospital provider pediatric emergency skills: a self-reported needs assessment. Poster Presentation, Pediatric Academic Society. San Francisco, CA. 2017.
33. Abulebda K, Lufti R, Abuslutameh S, Leeper K, Montgomery E, Kirby M, Whitfill T, Auerbach M. Measuring quality of care of simulated critically ill pediatric patients in community emergency departments and its correlation to pediatric readiness scores. Poster Presentation, Pediatric Academic Societies Meeting. San Francisco, CA. 2017.
34. Cicero M, Whitfill T, Diaz M, Kessler D, Scherzer DJ, Goldberg S, Munjal K, Bowen A, Arteaga G, Walsh B, Auerbach M. A prehospital pediatric disaster triage video game and improvement in live simulation triage decisions. Poster Presentation, Pediatric Academic Societies Meeting. San Francisco, CA. 2017.
35. Bismilla Z, Boyle T, Mangold K, Van Ittersum W, White M, Zaveri P, Mallory L. Development of a Simulation-Based Interprofessional Teamwork Assessment Tool. Poster: Pediatric Academic Societies Meeting, San Francisco, CA, April 2017.
36. M Kadden, N Shah, J Sestokas, D Agrawal. "Tracheostomy Care: Efficacy of a Blended Curriculum with a Web-Based Module and Supplemental Hands-on Simulation Training for Pediatrics Residents." Abstract selected for poster presentation at the PAS Annual Meeting, San Francisco, CA; May 2017.
37. Pusic M. We'll Build a Cognitive Training Program Just for You. Presented at: American Medical Association ACE Spring Consortium Meeting; 2017 March 26-28; Scottsdale, AZ



38. M Cicero, T Whitfill, M Diaz, D Kessler, DJ Scherzer, S Goldberg, K Munjal, A Bowen, G Arteaga, B Walsh, M Auerbach. A Prehospital Pediatric Disaster Triage Video Game And Improvement in Live Simulation Triage Decisions. Pediatric Academic Societies Meeting. Poster presentation. San Francisco, CA. 2017.
39. R Stanley, T Whitfill, D Scherzer, H Xiang, M Auerbach Emergency care for children in the US: Epidemiology and trends over time. Poster presentation, Pediatric Academic Society. San Francisco, CA. 2017.
40. T Chang and the INSPIRE In-Hospital QCPR Leaderboard Investigators. Influence of CPR Provider Characteristics on adherence to 2015 AHA Guidelines for Chest Compressions. Poster presentation, Pediatric Academic Society. San Francisco, CA. 2017.
41. Kalet A, Ark T, Elias K, Nick M, Ng G, Szyld D, Zabar S, **Pusic M**, Riles T. A Simulated Night on Call (NOC): Assessing the Entrustment of Near Graduating Medical Students from Multiple Perspectives. Society of General Internal Medicine (SGIM) Annual Meeting; 2017 April 19-22; Washington, DC.
42. Kalet A, Elias K, Ng G, Szyld D, Zabar S, **Pusic M**, Gillespie C, Buckvar-Keltz L, Joan Cangiarella, Abramson S, Riles T. Are Accelerated 3-year MD Pathway Students Prepared for Day One of Internship? Society of General Internal Medicine (SGIM) Annual Meeting; 2017 April 19-22; Washington, DC.
43. Walsh CM, Nagamuthu C, Kaye M, Cheng A, Ng S. Communication failures during in situ pediatric resuscitation simulations: Characterization of recurrent types and effects. Canadian Conference on Medical Education 2017, Winnipeg, Canada. April 30, 2017
44. Crowe R, Elysee G, Nicholson J, **Pusic M**, Schwartz M, Triola M. Health Care by the Numbers. American Medical Association ACE Spring Consortium Meeting; 2017 March 26-28; Scottsdale, AZ
45. Adalgais K, Abdoo D, Snyder K, Caffrey S, Pusic M, Boutis K. Development of Child Abuse Recognition Education For EMS Providers using Deliberate Practice. National Association of State EMS Officials (NASEMSO) 2017 Spring Meeting; 2017 March 6-9; New Orleans, LA - **First Place in the 2017 NASEMSO Abstract Competition.**
46. Pusic M. Better Ways of Climbing the Learning Curve: Cognitive Skill Simulation for Medical Diagnosis. Presented at: The Children's Hospital of Philadelphia; 2017 February 21-22; Philadelphia, PA
47. Pusic M. Cognitive Skill Simulation for Medical Diagnosis. Presented at: Children's Hospital of Boston. 2017 February 9; Boston, MA
48. Calhoun A, Adler M. Assessment Methodologies: Concepts and Newly Validated Tools. International Meeting on Simulation in Healthcare, Orlando, FL 2016.
49. M Auerbach, R Mistry, J Nagler, F Babl, T Whitfill, J Cheek, L D Nguyen, A Rao, S Dalton, G Loncarica, P Rino, S Dalziel, M Lyttle, A Dixon, E Oakley, S Craig. Experience and Confidence in Performing Invasive Pediatric Procedures: An International Survey of EM, Pediatric EM and Pediatric Attending Physicians. Poster Presentation, Society for Academic Emergency Medicine. Orlando, FL. 2017.



50. T Whitfill, M Auerbach. ImPACTS update: Improving Pediatric Acute Care through Simulation. Talk, INSPIRE meeting at IMSH. Orlando, FL. 2017.
51. L Butler, T Whitfill, M Gawel, M Auerbach. The Impact of a Telepresent Team Leader on Pediatric Resuscitation: A Randomized Controlled Trial. Society for Academic Emergency Medicine 2017. Orlando, Florida. 2017.
52. T Chang and the INSPIRE In-Hospital QCPR Leaderboard Investigators. Influence of a Competitive Leaderboard on Simulated CPR Practice and Performance among Healthcare Professionals. International Meeting for Simulation in Healthcare. Poster presentation. Orlando, FL. 2017.
53. Cicero M, Goldberg S, Diaz M, Whitfill T, Kessler D, Walsh B, Symons N, Auerbach M, Bowen A. 60 Seconds to Survival: Asynchronous Pediatric Disaster Triage Learning Via a Novel Video Game. International Meeting for Simulation in Healthcare. Oral presentation. Orlando, FL. 2017.
54. Pusic M. The Learning Curve Framework in Simulation Education Research. Presented at: Society for Simulation in Healthcare (SSH) Research Summit; 2017 January 27-28; Orlando, FL.
55. Welch-Horan TB, Arnold JL, Bagby LB, Bastero P, Doughty CB, Khattab M, Lemke DS, Patricia KE, Peterson T, Rus M, White ML. Rapid Cycle Deliberate Practice: Structure and Application. Workshop presentation, 17th International Meeting for Simulation in Healthcare, Orlando, FL, Jan. 2017.
56. Kennedy C, MacKinnon RJ. Implementation of the FACT: Five to Survive. Poster (prize winner) Pediatrics Section of International Medical Simulation in Healthcare conference, Orlando, USA January 2017
57. Walsh CM, Ng S, Fernandes J, Correia R, Nagamuthu C, Kaye M, Cheng A. Mastery-based Just in Time Training to Improve Clinical and Non-Technical Skills: A Randomized Controlled Study. International Meeting for Simulation in Healthcare. Orlando, Florida, USA. January 30, 2017.
58. Ciechanski P, Cheng A, Damji O, Lopushinsky S, Kirton A. Enhancing Laparoscopic Skill Acquisition and Retention with Transcranial Direct-Current Stimulation. International Meeting for Simulation in Healthcare. Orlando, Florida, USA. January 30, 2017.
59. Kessler D, Peterson D, Lin Y, Bragg A, Cheng A for the INSPIRE CPR Investigators. Causes for Pauses: An Analysis of Simulated Cardiac Arrest. International Meeting for Simulation in Healthcare. Orlando, Florida, USA. January 30, 2017.
60. Marohn, K, Cheng, A, Tofil, N, Peterson D, Brown L, Bragg A, Hunt E, Nadkarni V, Kessler D, Sudikoff, S for the INSPIRE QCPR Investigators. Barriers to Performance of High Quality Chest Compressions among Pediatric Providers: A Qualitative Multicenter Study. International Meeting for Simulation in Healthcare. Orlando, Florida, USA. January 30, 2017.
61. Hui J, Smith J, Cheng A. Publication of Abstracts Presented at the International Meeting for Simulation in Healthcare. International Meeting for Simulation in Healthcare. Orlando, Florida, USA. January 30, 2017
62. S Gangadharan, B Walsh, T Whitfill, M Gawel, M Auerbach. Safety Threats Related to Dextrose Administration in a simulated pediatric patient with seizure. Society of Critical Care Medicine Annual Congress. Oral presentation. Honolulu, Hawaii. 2017.



63. T Chang and the INSPIRE In-Hospital QCPR Leaderboard Investigators. Influence of Biometric Variables on Quality of CPR. Society of Critical Care Medicine Annual Congress. Oral presentation. Honolulu, Hawaii. 2017.
64. Cicero M, Whitfill T, Arteaga G, Diaz M, Scherzer DJ, Redlener, M, Walsh B, Paesano G, Auerbach M. 60 Seconds to Survival: A Disaster Triage Video Game and Improved Triage Accuracy for Prehospital Care. National Association of EMS Physicians Annual Meeting. Poster presentation. New Orleans, LA. 2017.
65. Pusic M. So What? Matching your Challenges to Data. Presented at: Mayo Clinic Education and Technology Forum; 2017 January 18; Rochester, MN.
66. Nadkarni L, Roskind C, Auerbach M, Calhoun A, Adler M, Kessler D, The Development and Validation of a Concise Tool for Assessing Team Leader Performance During Pediatric Simulated Resuscitations. International Meeting for Simulation in Healthcare. Orlando, Florida. January, 2017.
67. Marohn K, Cheng A, Tofil N, Peterson D, Brown L, Bragg E, Hunt E, Nadkarni V, Kessler D, Sudikoff S, Barriers to Performance of High Quality Chest Compressions Among Pediatric Providers: A Qualitative Multicenter Study. International Meeting for Simulation in Healthcare. Orlando, Florida. January, 2017.
68. MacKinnon RJ (Keynote Speaker) "Is your hospital ready to receive paediatric trauma FACT study" LEARN Symposium Groningen University Medical Centre, Netherlands December 2016
69. Pusic M. The Science of Deliberate Practice. Presented at: Johns Hopkins Children's Center: Pediatric Emergency Medicine Grand Rounds; 2016 December 1; Baltimore, MD
70. Estephan S, Nagy K, Van Ittersum W. Incorporating Rapid Cycle Deliberate Practice into Educational Programs. Workshop. Cincinnati Children's Hospital Faculty Development & Health Care Educators Conference, Cincinnati, OH, October 2016.
71. Kessler D, Peterson D, Lin Y, Bragg A, Cheng A for the INSPIRE CPR Investigators. Causes for Pauses: An Analysis of Simulated Cardiac Arrest. Royal College of Physicians and Surgeons of Canada Simulation Summit. St Johns, Canada. October 14, 2016.
72. Pusic M, Eliaz K. The Need for Speed – Pros and Cons of Using Speeded Practice in Simulation Education. Presented at: Hot Topics in Simulation Education Symposium; 2016 October 16; New York, NY
73. Marin M, Pusic M. Design Based Research with Learning Analytics. Presented at: NYU Technology Enhanced Education Meeting; 2016 October 27; New York, NY
74. Teman, Susan. In Situ Simulation for High Reliability. Press Ganey/Healthcare Performance Improvement Annual Safety Summit, Chicago, IL, September 2016.
75. Pusic M. Learning Analytics: Tools to gauge learning an accelerate education? Presented at: International Conference on Residency Education (ICRE); 2016 September 29-October 1; Niagara Falls, Ontario
76. Skinner, A., Nicholson, A, Teman, S. Utilizing In Situ Simulation to Advance Patient Safety. National Patient Safety Foundation Safety Congress, Orlando, Florida, May 2016.

77. Kessler D, Peterson D, Lin Y, Bragg A, Cheng A for the INSPIRE CPR Investigators. Causes for Pauses: An Analysis of Simulated Cardiac Arrest. International Pediatric Simulation Symposium and Workshops. Glasgow, Scotland. May, 2016.
78. T Whitfill, M Gawel, D Kessler, B Walsh, L Butler, S Gangadharan, M Hamilton, B Schultz, A Nishisaki, V Nadkarni, K-Y Tay, M Lavoie, J Katznelson, J Baird, L Brown, M Auerbach. The Quality of Pediatric Resuscitative Care in United States Emergency Departments. International Pediatric Simulation Symposium and Workshops. Glasgow, Scotland. May, 2016.
79. B Walsh, M Gawel, D Kessler, S Gangadharan, M Hamilton, T Whitfill, J Katz-Nelson. Mobile In Situ Simulation Connecting Academic Centers and Community Hospitals: Bridging Gaps in Care. International Pediatric Simulation Symposium and Workshops. Glasgow, Scotland. May, 2016.
80. Cheng A, Kessler D, MacKinnon R, Chang T, Nadkarni V, Hunt EA, Duval-Arnould J, Lin Y, Cook DA, Pusic M, Hui J, Moher D, Auerbach M for the INSPIRE Network Reporting Guidelines Working Group. Reporting Guidelines for Health Care Simulation Research: Extensions for the CONSORT and STROBE Statements. International Pediatric Simulation Symposium and Workshops. Glasgow, Scotland. May 10, 2016
81. Kessler D, Peterson D, Lin Y, Bragg A, Cheng A for the INSPIRE CPR Investigators. Causes for Pauses: An Analysis of Simulated Cardiac Arrest. International Pediatric Simulation Symposium and Workshops. Glasgow, Scotland. May 10, 2016
82. Tofil N, Brown L, Lin Y, Zhong J, Peterson D, White LM, Grant V, Grant D, Gottesman R, Sudikoff S, Adler M, Marohn K, Davidson J, Doan Q, Cheng A, for the INSPIRE CPR Investigators. Workload of Team Leaders and Team Members during a Simulated Sepsis Scenario. International Pediatric Simulation Symposium and Workshops. Glasgow, Scotland. May 10, 2016
83. Cheng A, Lin Y, Nadkarni V, Duff J, Brown L, Bhanji F, Kessler D, Tofil N, Hecker K, Hunt E for the INSPIRE CPR Investigators. Impact of Stepstool Use and Provider Height on Quality of Chest Compressions: A Multicenter Study. International Pediatric Simulation Symposium and Workshops. Glasgow, Scotland. May 10, 2016.





### INSPIRE Peer Reviewed Publications 2016-2017

1. Whitfill T, Gawel M, Auerbach M. A simulation-based quality improvement initiative improves pediatric readiness in community hospitals. *Pediatric Emergency Care*. 2017 (In Press).
2. Cicero MX, Whitfill T, Munjal K, Madhok M, Diaz MCG, Schwerzer DJ, Walsh B, Bowen A, Redlener M, Goldberg S, Symons N, Burkett J, Santos J, Kessler K, Barnicle R, Paesano G, Auerbach M. 60 Seconds to Survival: A Randomized Controlled Trial of a Disaster Triage Video Game For Prehospital Care Providers. *American Journal of Disaster Medicine*. (In Press).
3. Chang TP, Doughty CB, Mitchell D, Rutledge C, Auerbach MA, Frisell K, Jan P, Kessler DO, Wolfe H, MacKinnojn RJ, Dewan M, Pirie J, Lemke D, Khattab M, Tofil N, Nagamuthu Ch, Walsh CM, INSPIRE In-Hospital QCPR Leaderboard Investigators. Leveraging Quick Response code technology to facilitate simulation-based leaderboard competition. *Simulation in Healthcare*. 2017 (In Press).
4. Walsh B, Gangadharan S, Whitfill T, Gawel, M, Auerbach M. Safety threats during the care of infants with hypoglycemic seizures in the emergency department: a multicenter, simulation-based prospective cohort study. *J Emerg Med*. 2017 (In press).
5. Lin Y, Wan B, Belanger C, Hecker K, Gilfoyle E, Davidson J, Cheng A. Assessing PICU Mattress Compressibility with a Standard Backboard and Real-time Feedback: a Simulation-based study. *Advances in Simulation*. Accepted and In Press.
6. Thoma B, Brazil V, Spurr J, Palaganas J, Eppich W, Grant V, Cheng A. Establishing a Virtual Community of Practice in Simulation: The Value of Social Media. *Simulation in Healthcare*. Accepted and In Press.
7. Cheng A, Auerbach M, Calhoun A, MacKinnon R, Chang TP, Nadkarni V, Hunt EA, Duval-Arnould J, Pusic M, Peiris N, Kessler D for the INSPIRE Investigators. Building a Community of Practice for Researchers: The International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE). *Simulation in Healthcare*. Published online Nov 8, 2017. Doi: 10.1097/SIH.0000000000000269
8. Auerbach M, Rudolph J, Cheng A. Rapport Management: Opening the Door for Effective Debriefing. *Simulation in Healthcare*. Published online Nov 8, 2017. Doi: 10.1097/SIH.0000000000000266
9. Bajaj K, Meguerdichian M, Thoma B, Huang S, Eppich W, Cheng A. The PEARLS Healthcare Debriefing Tool. *Academic Medicine*. Published online Sept 14, 2017. Doi: 10.1097/ACM.00000000000002035
10. Lin Y, Cheng A, Hecker K, Grant V, Currie G. The Application of Economic Evaluation in Simulation-based Medical Education: Opportunities and Challenges. *Medical Education*. Published online Sept 26, 2017. doi: 10.1111/medu.13411.
11. Kessler D, Peterson DT, Bragg A, Lin Y, Zhong J, Duff J, Adler M, Brown L, Bhanji F, Davidson J, Grant D, Cheng A; International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE) CPR Investigators. Causes for Pauses During Simulated Cardiac Arrest. *Pediatr Crit Care Med*. 2017 Aug 18(8):e311-e317.





12. Grunwell JR, Kamat PP, Miksa M, Krishna A, Walson K, Simon D, Krawiec C, Breuer R, Lee JH, Gradidge E, Tarquinio K, Shenoi A, Shults J, Nadkarni V, Nishisaki A; National Emergency Airway Registry for Children (NEAR4KIDS) and the Pediatric Acute Lung Injury and Sepsis (PALISI) Network. Trend and Outcomes of Video Laryngoscope Use Across PICUs. *Pediatr Crit Care Med*. 2017 Aug;18(8):741-749. doi: 10.1097/PCC.0000000000001175.
13. Niles DE, Nishisaki A, Sutton RM, Elci OU, Meaney PA, O'Connor KA, Leffelman J, Kramer-Johansen J, Berg RA, Nadkarni V. Improved Retention of Chest Compression Psychomotor Skills With Brief "Rolling Refresher" Training. *Simul Healthc*. 2017 Aug;12(4):213-219. doi: 10.1097/SIH.0000000000000228.
14. Ohta K, Kurosawa H, Shiima Y, Ikeyama T, Scott J, Hayes S, Gould M, Buchanan N, Nadkarni V, Nishisaki A. The Effectiveness of Remote Facilitation in Simulation-Based Pediatric Resuscitation Training for Medical Students. *Pediatr Emerg Care*. 2017 Aug;33(8):564-569. doi: 10.1097/PEC.0000000000000752.
15. Leary M, Buckler DG, Ikeda DJ, Saraiva DA, Berg RA, Nadkarni VM, Blewer AL, Abella BS. The association of layperson characteristics with the quality of simulated cardiopulmonary resuscitation performance. *World J Emerg Med*. 2017;8(1):12-18. doi: 10.5847/wjem.j.1920-8642.2017.01.002.
16. Cheng A, Belanger C, Wan B, Davidson J, Lin Y. Effect of Emergency Department Mattress Compressibility on Chest Compression Depth using a Cardiopulmonary Resuscitation Board, a Slider Transfer Board and a Flat Spine Board: A Simulation-based Study. *Simulation in Healthcare*. Published online July 10, 2017. doi: 10.1097/SIH.0000000000000245
17. Tofil N, Brown L, Lin Y, Zhong J, Peterson D, White M, Grant D, Grant V, Gottesman R, Sudikoff S, Adler M, Marohn K, Davidson J, Doan Q, Cheng A for the INSPIRE CPR Investigators. Workload of Team Leaders and Team Members during a Simulated Sepsis Scenario. *Pediatric Critical Care Medicine*. Published online June 24, 2017. doi: 10.1097/PCC.0000000000001258
18. Kessler D, Peterson D, Bragg A, Lin Y, Zhong J, Duff J, Adler M, Brown L, Bhanji F, Davidson J, Grant D, Cheng A for the INSPIRE CPR Investigators. Causes for Pauses during Simulated Pediatric Cardiac Arrest. *Pediatric Critical Care Medicine*. Published online June 8, 2017. doi: 10.1097/PCC.0000000000001218
19. Cheng A, Grant V, Huffman J, Burgess G, Szyld D, Eppich W. Coaching the Debrief: Peer Coaching to Improve Debriefing Quality in Simulation Programs. *Simulation in Healthcare*. 2017; 12(5):319-325. doi: 10.1097/SIH.0000000000000232
20. Cheng A, Lin Y, Nadkarni V, Wan B, Duff J, Brown L, Bhanji F, Kessler D, Tofil N, Hecker K, Hunt E for the INSPIRE CPR Investigators. The effect of step stool use and provider height on quality of chest compressions during pediatric cardiac arrest: A simulation-based multicentre study. *Canadian Journal of Emergency Medicine*. Published online April 3, 2017. doi: 10.1017/cem.2017.12



21. Cheng A, Lin Y, Smith J, Wan B, Belanger C, Hui J. Publication of Abstracts Presented at an International Healthcare Simulation Conference. *Simulation in Healthcare*. 2017; 12(4):107-212. doi: 10.1097/SIH.0000000000000229
22. Natal B, Szyld D, Pirie J, Bismilla Z, Cheng A. Simulation Fellowship Programs: An International Survey of Fellowship Program Directors. *Academic Medicine*. 2017; 92(8):1204-1211. doi: 10.1097/ACM.0000000000001668.
23. Cheng A, Kessler D, Mackinnon R, Chang T, Nadkarni V, Hunt EA, Duval-Arnould J, Lin Y, Pusic M, Auerbach M. Conducting Multicenter Research in Healthcare Simulation: Lessons Learned from the INSPIRE Network. *Advances in Simulation*. 2017;2:6. doi: 10.1186/s41077-017-0039-0
24. Jones J, Wilkins M, Caird J, Kaba A, Cheng A, Ma I. The impact of clinical interruptions on central venous catheterizations: A Simulation-based Randomized Trial. *Advances in Simulation*. 2017; 2:5. doi: 10.1186/s41077-017-0038-1
25. Gilfoyle E, Koot DA, Annear JC, Bhanji F, Cheng A, Duff JP, Grant VJ, St. George-Hyslop CE, Delaloye NJ, Kotsakis A, McCoy CD, Ramsay CE, Weiss MJ, Gottesman RD for the Teams4Kids Investigators and the Canadian Critical Care Trials Group. Improved Clinical Performance and Teamwork of Pediatric Interprofessional Resuscitation Teams with a Simulation-based Educational Intervention. *Pediatric Critical Care Medicine*. 2017; 18(2):e62-69. doi:10.1097/PCC.0000000000001025.
26. Bonafide CP, Localio AR, Holmes JH, Nadkarni VM, Stemler S, MacMurchy M, Zander M, Roberts KE, Lin R, Keren R. Video Analysis of Factors Associated With Response Time to Physiologic Monitor Alarms in a Children's Hospital. *JAMA Pediatr*. 2017 Jun 1;171(6):524-531. doi: 10.1001/jamapediatrics.2016.5123.
27. Ades A, Nadkarni V, Nishisaki A. Stress in Simulation-Based Resuscitation Education-Seeking Objective Measures to Spit and Swallow? *Pediatr Crit Care Med*. 2017 May;18(5):487-489. doi: 10.1097/PCC.0000000000001133. No abstract available.
28. Cheng A, Lin Y, Nadkarni V, Wan B, Duff J, Brown L, Bhanji F, Kessler D, Tofil N, Hecker K, Hunt EA. The effect of step stool use and provider height on CPR quality during pediatric cardiac arrest: A simulation-based multicenter study *CJEM*. 2017 Apr 3:1-9.
29. Kessler D, Chang T, Auerbach M, Fein D, Lavoie M, Trainor J, Lee M, Gerard J, Grossman D, Whitfill T, Pusic M. Screening residents for infant lumbar puncture readiness with just-in-time simulation-based assessments. *BMJ Simulation & Technology Enhanced Learning*. 2017;3:17-22.
30. Braun C, Kessler D, Auerbach M, Mehta R, Scalzo A, Gerard J. Can Residents Assess Other Providers' Infant Lumbar Puncture Skills? Validity Evidence for a Global Rating Scale and Subcomponent Skills Checklist. *Pediatr Emerg Care*. 2017;33(2):80-85.
31. Campbell DM, Dadiz R. Simulation in neonatal transport medicine. *Sem Perinatol* 2016;40:430-7.
32. Dadiz R, Spear ML, Denney-Koelsch E. Teaching the Art of Difficult Family Conversations. *J Pain Symptom Manage* 2017;53:157-61.
33. Jee SH, Baldwin C, Dadiz R, Jones M, Alpert-Gillis L. Integrated mental health training for pediatric and psychology trainees using standardized patient encounters. *Acad Pediatr* 2017.



34. Auerbach M, Whitfill T, Gawel M, Kessler D, Walsh B, Gangadharan S, Hamilton MF, Schultz B, Nishisaki A, Tay KY, Lavoie M, Katznelson J, Dudas R, Baird J, Nadkarni V, Brown L. Differences in the Quality of Pediatric Resuscitative Care Across a Spectrum of Emergency Departments. *JAMA Pediatr*. 2016 Oct 1;170(10):987-994. PubMed PMID: [27570926](#).
35. Gisondi MA, Bavishi A, Burns J, Adler M, Wayne DB, Goldstein J. Use of a Chief Resident Retreat to Develop Key Leadership Skills. *Med Sci Educ*, 2017;27(2):173-176.
36. Salzman DH, Wayne DB, Eppich WE, Hungness E, Adler MD; Park C, Barsness K, McGaghie WC, Barsuk JH. An Institution-wide Approach to Submission, Review, and Funding of Simulation-Based Curricula. *Adv Sim*, 2017;2(1):9.
37. Harris TH, Adler M, Unti SM, McBride ME. Pediatric heart disease simulation curriculum: Educating the pediatrician. *Congenit Heart Dis*. 2017;92(3):324
38. Kessler DO, Peterson DT, Bragg A, Lin Y, Zhong J, Duff J, Adler M, Brown L, Bhanji F, Davidson J, Grant D, Cheng A; International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE) CPR Investigators. Causes for Pauses During Simulated Pediatric Cardiac Arrest. *Pediatr Crit Care Med*. 2017 Jun 8.
39. Pusic M, Triola M. Determining the Optimal Pace and Time for Procedural Education. *BMJ Quality and Safety*. 2017 Aug 9. Epub ahead of print.
40. Tofil NM, Lin Y, Zhong J, Peterson DT, White ML, Grant V, Grant DJ, Gottesman R, Sudikoff SN, Adler M, Marohn K, Davidson J, Cheng A; International Network for Simulation-Based Pediatric Innovation, Research and Education Cardiopulmonary Resuscitation (INSPIRE CPR) Investigators. Workload of Team Leaders and Team Members During a Simulated Sepsis Scenario. *Pediatr Crit Care Med*. 2017 Jun 24.
41. Scherzer DJ, Chime NO, Tofil NM, Hamilton MF, Singh K, Stanley RM, Kline J, McNamara LM, Rosen MA, Hunt EA; INSPIRE Epinephrine Research Investigators. Survey of pediatric trainee knowledge: dose, concentration, and route of epinephrine. *Ann Allergy Asthma Immunol*. 2017 Apr;118(4):516-518. doi: 10.1016/j.anai.2017.01.024. Epub 2017 Mar 7. PubMed PMID: 28283276.
42. Cutrer WB, Miller BM, Pusic MV, Mejicano G, Mangrulkar RS, Gruppen LD, Hawkins R, Skochelak SE, Moore DE. Fostering the Development of Master Adaptive Learners: A Conceptual Model to Guide Skill Acquisition in Medical Education. *Academic Medicine*. 2017 Jan;92(1):70-75.
43. Law B, Cheung PY, Wagner M, van Os S, Zheng B, Schmölzer G, Analysis of neonatal resuscitation from the view of the resuscitator using eye-tracking: a pilot study. *Arch Dis Child – Fetal Neonatal Ed* (2017).
44. Wagner, M., Miledler, L. P., Goeral, K., Klebermass-Schrehof, K., Cardona, F. S., Berger, A., Schmölzer, G. M. and Olischar, M., Student peer teaching in paediatric simulation training is a feasible low-cost alternative for education. *Acta Paediatr* (2017)
45. Everett, T.C., MacKinnon, R.J., Beer, D., Taylor, M. and Bould, M.D. (2017) 'Ten years of simulation-based training in pediatric anesthesia: The inception, evolution, and dissemination of



- the Managing Emergencies in Pediatric Anesthesia (MEPA) course'. *Pediatric Anesthesia*, 27(10), pp.984-990.
46. Alphonso A, Auerbach M, Bechtel K, Bilodeau K, Gawel M, Koziel J, Whitfill T, Tiyyagura GK. Development of a Child Abuse Checklist to Evaluate Prehospital Provider Performance. *Prehosp Emerg Care*. 2016 Oct 4;PubMed PMID: [27700209](#).
  47. Promoters and Barriers to Implementation of Tracheal Intubation Airway Safety Bundle: A Mixed-Method Analysis. Finn Davis K, Napolitano N, Li S, Buffman H, Rehder K, Pinto M, Nett S, Jarvis JD, Kamat P, Sanders RC Jr, Turner DA, Sullivan JE, Bysani K, Lee A, Parker M, Adu-Darko M, Giuliano J Jr, Biagas K, Nadkarni V, Nishisaki A; National Airway Emergency for Children (NEAR4KIDS) and Pediatric Acute Lung Injury and Sepsis Investigators (PALISI) Network. *Pediatr Crit Care Med*. 2017 Oct;18(10):965-972. doi: 10.1097/PCC.0000000000001251.
  48. Cicero MX, Whitfill T, Overly F, Baird J, Walsh B, Yarzebski J, Riera A, Adelgais K, Meckler GD, Baum C, Cone DC, Auerbach M. Pediatric Disaster Triage: Multiple Simulation Curriculum Improves Prehospital Care Providers' Assessment Skills. *Prehosp Emerg Care*. 2016 Oct 17;PubMed PMID: [27749145](#).
  49. Emerson BL, Whitfill T, Baum CR, Garlin-Kane K, Santucci K. Effects of alcohol-based hand hygiene solutions on breath alcohol detection in the emergency department. *Am J Infect Control*. 2016 Dec 1;44(12):1672-1674. PubMed PMID: [27614708](#).
  50. Pusic MV, Boutis K, Pecaric MR, Savenkov O, Beckstead J, Jaber M. A Primer on the Statistical Modelling of Learning Curves in Health Professions Education. *Advances in Health Sciences Education*. Accepted for Publication. 2016 Oct. 3. Epub ahead of print.
  51. Chime NO, Pusic MV, Auerbach M, Mehta R, Scherzer DJ, Van Ittersum W, McAninch B, Fein DM, Seelbach E, Zaveri P, Jackson JM, Kessler D, Chang TP; Script Concordance Testing to Determine Infant Lumbar Puncture Practice Variation. *Pediatr Emerg Care*. 2016 Sep 23. DOI: 10.1097/PEC.0000000000000851
  52. Johnston L, Chen R, Whitfill T, Bruno C, Levit Orly, Auerbach Marc. Do you see what I see? A randomized trial of simulation-based master training with videolaryngoscopy for neonatal intubation. *BMJ Simulation & Technology Enhanced Learning*. 2016.
  53. K Zoltowski, R Mistry, D Brousseau, T Whitfill, P Aronson. What parents want: an analysis of parental expectations and satisfactions in the pediatric emergency department. *Acad Pediatr* 16(4):343-349. doi:10.1016/j.acap.2016.01.020.
  54. M Auerbach, D Fein, T Chang, J Gerard, P Zaveri, D Grossman, W Van Ittersum, J Rocker, T Whitfill, M Pusic, D Kessler, ImPACTS/INSPIRE collaborative. The correlation of workplace simulation-based assessments with interns' infant lumbar puncture success: a prospective, multi-center, observational study. *Simulation in Healthcare* 11(2):126-33. 2016. doi: 10.1097/SIH.0000000000000135.
  55. Chime NO, Pusic MV, Auerbach M, Mehta R, Scherzer DJ, Van Ittersum W, McAninch B, Fein DM, Seelbach E, Zaveri P, Jackson JM, Kessler D, Chang TP; INSPIRE Network. Script Concordance



- Testing to Determine Infant Lumbar Puncture Practice Variation. *Pediatric Emergency Care*. 2016 Sep 23. Epub ahead of print.
57. N Shah, P Bhansali, A Davis, J Sestokas, D Agrawal. "Care of the Child With Medical Complexity: A Multimedia Curriculum for Residents Across North America." *Acad Pediatr* August 2016; 16(6): e8-e9.
58. K Toner, D Agrawal, P Bhansali, N Shah. "Resident Perspectives of Virtual Simulation in an Online Complex Care Curriculum." *Acad Pediatr* August 2016; 16(6): e13-e14.
59. Auerbach M, Whitfill T, Gawel M, Kessler D, Walsh B, Gangadharan S, Fiedor M, Schultz B, Nishisaki A, Khoon-Yen T, Lavoie M, Katznelson J, Dudas R, Baird J, Nadkarni V, Brown L. Differences in the Quality of Pediatric Resuscitative Care across a spectrum of Emergency Departments. *JAMA Pediatrics*. 2016;170(10), 987-994.
60. Chime NO, Pusic MV, Auerbach MA, Mehta R, Van Ittersum W, McAninch B, Fein DM, Seelbach E, Zaveri P, Jackson J, Kessler D, Chang TP. Script Concordance Testing to Determine Infant Lumbar Puncture Practice Variation. *Pediatr Emerg Care*. 2016.
61. Auerbach MA, White ML, Bhargava S, Zaveri P, Seelbach E, Burns R, Mehta R, McAninch B, Fein DM, Chang TD, Kessler D. Are graduating pediatric residents prepared to perform infant lumbar punctures? A multi-institutional descriptive study. *Pediatr Emerg Care*. 2016.
62. Hunt EA, Duval-Arnould J, Chime NO, Auerbach M, Kessler D, Duff JP, Shilkofski N, Brett-Fleegler M, Nadkarni V, Cheng A, Alqahtani A. Building consensus for the future of paediatric simulation: a novel 'KJ Reverse-Merlin' methodology. *BMJ Simulation and Technology Enhanced Learning*. 2016 Jun 1;2(2):35-41.
63. Pasternack JR, Dadiz R, McBeth R, Gerard J, Scherzer D, Tiyyagura G, Zaveri P, Chang T, Auerbach M, Kessler D. Qualitative study exploring implementation of a point-of-care competency-based lumbar puncture program across institutions. *Academic Pediatrics*. 2016;16:621-9.
64. Auerbach M, Fein DM, Chang TP, Gerard J, Zaveri P, Grossman D, Van Ittersum W, Rocker J, Whitfill T, Pusic M, Kessler D. The Correlation of Workplace Simulation-Based Assessments With Interns' Infant Lumbar Puncture Success: A Prospective, Multicenter, Observational Study. *Simul Healthc*. 2016;11(2):126-133.
65. Cheng A, Kessler D, Mackinnon R, Chang TP, Nadkarni VM, Hunt EA, Duval-Arnould J, Lin Y, Pusic M, Auerbach M. Conducting multicenter research in healthcare simulation: Lessons learned from the INSPIRE network. *Advances in Simulation*. 2017;2(1):6.
66. Cheng A, Kessler D, Mackinnon R, Chang TP, Nadkarni VM, Hunt EA, Duval-Arnould J, Lin Y, Cook DA, Pusic M, Hui J. Reporting guidelines for health care simulation research: extensions to the CONSORT and STROBE statements. *Advances in Simulation*. 2016;25;1(1):25.
67. Jointly published in *Simulation in Healthcare*, *Clinical Simulation in Nursing* and *BMJ Simulation and technology enhanced learning*. (*SimulHealthc*. 2016;11(4):238-248; *Clinical Simulation in Nursing*. 2016;12(8): iii-xiii.; *BMJ STEL*. 2016;2:51-60.)



68. Cheng A, Nadkarni VM, Chang T, Auerbach M. Highlighting Instructional Design Features in Reporting Guidelines for Health Care Simulation Research. *Simulation in Healthcare*. 2016; 11(5):363-364. doi: 10.1097/SIH.0000000000000202
69. Eppich W, Brett-Fleegler M, Mullan P, Cheng A. "Let's Talk About it": Translating Lessons from Healthcare Simulation to Clinical Event Debriefings and Coaching Conversations. *Clinical Pediatric Emergency Medicine*. 2016; 17(3):200-211.
70. Cheng A. Simulation Applied to Pediatric Emergency Medicine: From Luxury to Necessity. *Clinical Pediatric Emergency Medicine*. 2016; 17(3):157-158. doi: 10.1016/j.cpem.2016.05.003
71. Donoghue A, Lin Y, Duff J, Cheng A. Application of Simulation-based Research for Pediatric Emergency Medicine. *Clinical Pediatric Emergency Medicine*. 2016; 17(3):231-237.
72. Cheng A, Grant V, Robinson T, Catena H, Lachapelle K, Kim J, Adler M, Eppich W. The Promoting Excellence and Reflective Learning in Simulation (PEARLS) Approach to Health Care Debriefing: A Faculty Development Guide for Simulation Programs. *Clinical Simulation in Nursing*. 2016; 12(10):419-428. doi: 10.1016/j.ecns.2016.05.002
73. Adler M, Overly F, Nadkarni V, Davidson J, Gottesman R, Bank I, Marohn K, Sudikoff S, Grant V, Cheng A for the INSPIRE CPR Investigators. An Approach to Confederate Training within the Context of Simulation-based Research. *Simulation in Healthcare*. 2016; 11(5):357-362. doi:10.1097/SIH.0000000000000172
74. Cheng A, Kessler D, MacKinnon R, Chang T, Nadkarni V, Hunt EA, Duval-Arnould J, Lin Y, Cook DA, Pusic M, Hui J, Moher D, Auerbach M for the INSPIRE Network Reporting Guidelines Working Group. Reporting Guidelines for Health Care Simulation Research: Extensions to the CONSORT and STROBE Statements. *Simulation in Healthcare*. 2016; 11(4):238-248. doi: 10.1097/SIH.0000000000000150
75. Cheng A, Kessler D, MacKinnon R, Chang T, Nadkarni V, Hunt EA, Duval-Arnould J, Lin Y, Cook DA, Pusic M, Hui J, Moher D, Auerbach M for the INSPIRE Network Reporting Guidelines Working Group. Reporting Guidelines for Health Care Simulation Research: Extensions to the CONSORT and STROBE Statements. *BMJ STEL*. 2016; 2:51-60. doi: 10.1136/bmjstel-2016-000124
76. Cheng A, Kessler D, MacKinnon R, Chang T, Nadkarni V, Hunt EA, Duval-Arnould J, Lin Y, Cook DA, Pusic M, Hui J, Moher D, Auerbach M for the INSPIRE Network Reporting Guidelines Working Group. Reporting Guidelines for Health Care Simulation Research: Extensions to the CONSORT and STROBE Statements. *Clinical Simulation in Nursing*. 2016; 12(8): iii-xiii. doi: 10.1016/j.ecns.2016.04.008
77. Cheng A, Kessler D, MacKinnon R, Chang T, Nadkarni V, Hunt EA, Duval-Arnould J, Lin Y, Cook DA, Pusic M, Hui J, Moher D, Auerbach M for the INSPIRE Network Reporting Guidelines Working Group. Reporting Guidelines for Health Care Simulation Research: Extensions to the CONSORT and STROBE Statements. *Advances in Simulation*. 2016; 1:25. doi: 10.1186/s41077-016-0025-y.
78. Sawyer T, Eppich W, Brett-Fleegler M, Grant V, Cheng A. More Than One Way to Debrief: A Review of Healthcare Simulation Debriefing Methods. *Simulation in Healthcare*. 2016; 11(3):209-217. doi: 10.1097/SIH.0000000000000148.



79. Auerbach, M., Cole, J., Violano, P., Roney, L., Doherty, C., Shepherd, M. and MacKinnon, RJ. (2016) 'An International Interprofessional Study of Mental Models and Factors Delaying Neuroimaging of Critically Head-Injured Children Presenting to Emergency Departments'. Pediatric emergency care.

### Other INSPIRE Publications 2016-2017

1. Gupta AG, Adler MD. Management of an Unexpected Delivery in the Emergency Department. Clin Pediatr Emerg Med. 2016;17(2):89-98.
2. Grant, V. J., Wolff, M., & Adler, M. (2016). The Past, Present, and Future of Simulation-based Education for Pediatric Emergency Medicine. Clinical Pediatric Emergency Medicine, 17(3), 159–168. <http://doi.org/10.1016/j.cpem.2016.05.005>
3. Cheng A. Foreward. In Oriot D, Alinier G. Pocket Book for Simulation Debriefing in Healthcare. Springer. 2017 (In Press).
4. Assaad M, Gupta A, Eppich W, Cheng A. Codebriefing for Simulation-based Education. In Soghier L, Robin B. Neonatal Simulation Guidebook. American Academy of Pediatrics. 2017 (In Press)
5. Gupta A, Assaad M, Cheng A, Eppich W. PEARLS Blended Method Debriefing. In Soghier L, Robin B. Neonatal Simulation Guidebook. American Academy of Pediatrics. 2017 (In Press)
6. Levin H, Cheng A. Curricular Integration and Development. In: Naik V, Seropian M. Simulation Program Development. Springer International Publishing, Switzerland, 2017. (In Press).
7. Cheng A, Auerbach M. Procedural Competency and Simulation. In: Schafermeyer R, Tenenbein M, Macias C, Yamamoto L, Sharieff G. Fifth Edition of Pediatric Emergency Medicine. Media, PA. McGraw-Hill, 2017.
8. Cheng A, Eppich W, Sawyer T, Grant V. Debriefing: State of the Art and Science in Healthcare Simulation. In: Nestel D, Jolly B, Watson M, Kelly M. Healthcare Simulation Education: Evidence, Theory and Practice. John Wiley & Sons, Ltd. 2017.
9. Andreatta P, Freeman K & MacKinnon RJ. The value of professional societies to the healthcare simulation community of practice. Healthcare Simulation Education: Evidence, Theory and Practice. Nestel Ed. Wiley-Blackwell 2017
10. Cheng A. Guest Editor. Clinical Pediatric Emergency Medicine. Simulation (Special Issue). 2016.
11. Grant V, Cheng A, eds. Comprehensive Healthcare Simulation: Pediatrics. Springer International Publishing Switzerland, 2016.
12. Grant D, Grant V, Cheng A. The Future of Pediatric Simulation. In: Grant V, Cheng A. Comprehensive Healthcare Simulation: Pediatrics. Springer International Publishing Switzerland, 2016.

13. Kessler D, Auerbach M, Chang T, Lin Y, Cheng A. Simulation Research. In: Grant V, Cheng A. Comprehensive Healthcare Simulation: Pediatrics. Springer International Publishing Switzerland, 2016.
14. Grant V, Cheng A. Preface. In: Grant V, Cheng A. Comprehensive Healthcare Simulation: Pediatrics. Springer International Publishing Switzerland, 2016.
15. Festa M, Sigalet E, Eppich W, Cheng A, Grant V. Simulation Education Program Development. In: Grant V, Cheng A. Comprehensive Healthcare Simulation: Pediatrics. Springer International Publishing Switzerland, 2016.

