KidSIM

Annual Report

2020 - 2021

kidSIM™

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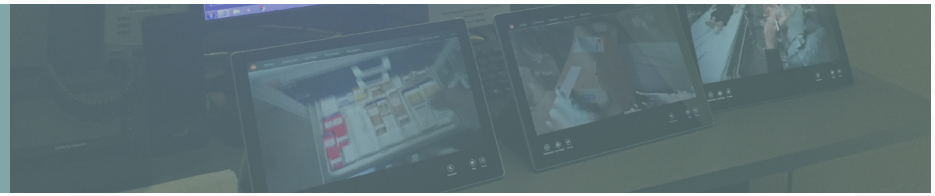
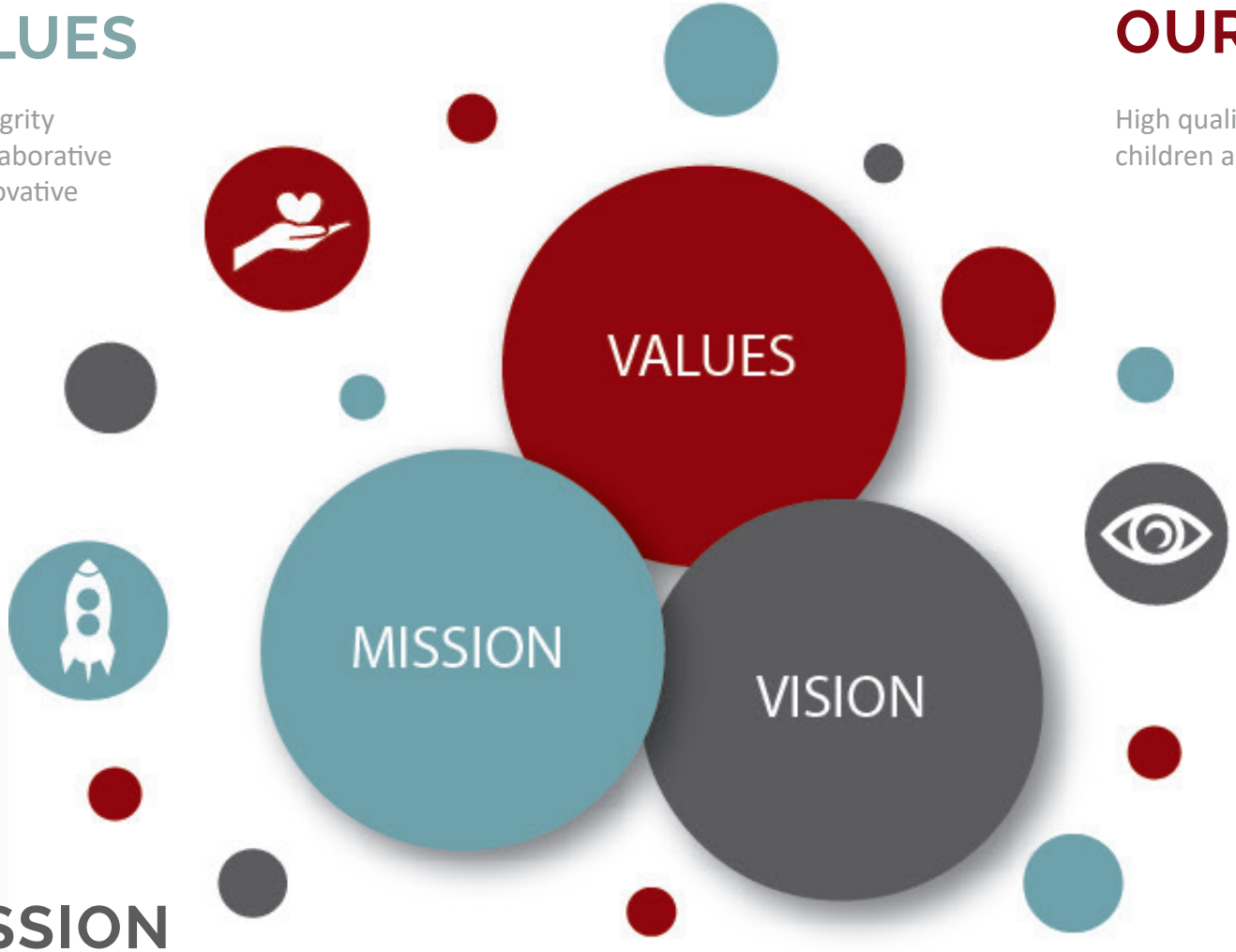


OUR VALUES

Respect
Supportive
Honesty
Inclusivity
Integrity
Collaborative
Innovative

OUR VISION

High quality healthcare for all children and families.



OUR MISSION

Promote and measure high quality interprofessional pediatric education by:
Ensuring optimal accessibility to this education tool;
Providing leadership and excellence in academic delivery and evaluation of simulation-based education;
Developing and mentoring high quality simulation educators;
Innovating and disseminating best practice;
Supporting Quality and Patient Safety Initiatives;
Conducting high quality simulation-based research

OUR STORY

The KidSIM Pediatric Simulation Program based out of the Alberta Children's Hospital has been training health care professionals both as individuals and as part of interprofessional teams since October of 2005. Since that time, the KidSIM Program has become a world-class program, known for delivering top-notch educational programs and conducting cutting-edge research. The KidSIM program works to provide learners surrogate clinical experiences with pediatric patients in as close to a 'real-life' situation as possible through the use of high-fidelity mannequins as well as a teaching space that mimics the clinical setting. Additionally, KidSIM provides education and support to help families and other non-clinical care providers to be better prepared for looking after children with high-risk medical situations that might occur outside the healthcare setting.

The KidSIM Program will honor our vision, mission & values by:

- Using medical simulation technology to enhance and assist with the ongoing professional development of front-line providers in our health care communities.
- Improving efficiency, availability and integration of simulation technology and scenarios into the educational programs of all pediatric stakeholders.
- Using medical simulation technologies to provide pediatric-focused acute care education and training to clinical areas within the ACH, as well as facilities that perform pediatric care in the Calgary Health Region, and rural and regional centers in Southern Alberta, Central Alberta and Southeastern British Columbia.
- Recruitment and facilitation of the training and development of future simulation educators providing a respectful, supportive and non-threatening learning environment for learners.
- Promoting excellence in simulation-based research by securing grant funding, mentoring novice researchers, collaborating with global experts, and engaging community partners to ensure broad dissemination of evidence.
- Creating an environment for improved patient safety and quality of care through uncovering and addressing patient safety threats.

OUR CENTER

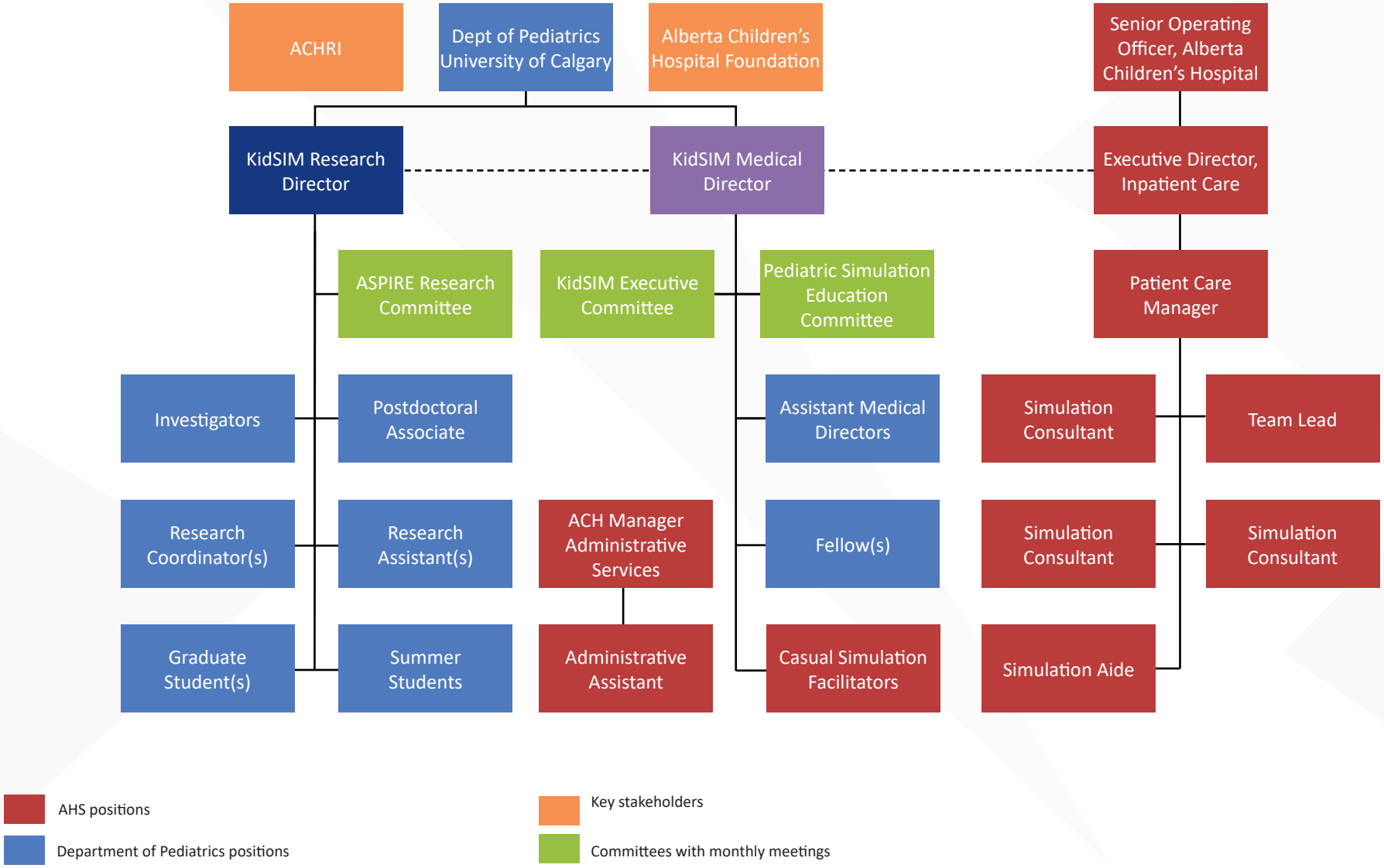
Through various fundraising endeavors, the $2.4 million dollar KidSIM Simulation Center opened in January 2014. The KidSIM Center is a 3,600 square foot facility and is the largest pediatric simulation facility in Canada. The center is housed on the 4th floor of the Alberta Children's Hospital and accommodates four simulation suites with individual control rooms, two proper debriefing rooms, a dedicated storage room, and space for administrative and program staff. Each of the teaching spaces is outfitted with an advanced multimedia system to be able to enhance the education experience and continue to offer the possibility of video recording for both research and quality assurance purposes. With the ability to run concurrent simulations in multiple labs, the KidSIM Program has been able to provide more learning opportunities than ever before, especially for large interprofessional teams. The versatility of the space has allowed it to serve the diverse needs of both clinical and academic / research groups, including clinical education and training, faculty development, research, advocacy, family centered care and community outreach. In 2020, due to the COVID-19 pandemic, a higher number of sessions took place in-situ as KidSIM supported staff in pandemic preparedness.

KidSIM Center
39%

In situ
59%

Mobile
2%

OUR GOVERNANCE



OUR TEAM

DR. KERRI LANDRY

Medical Director

Dr. Kerri Landry is originally from Montreal, Quebec where she attended McGill University and completed her MD/MBA, her Pediatrics' Residency and finally her Pediatric Emergency Medicine Fellowship. During her time at McGill, her interest in simulation education was sparked when they opened the Steinberg Centre for Simulation and Interactive Learning in 2006. She quickly fell in love with sim and became an active participant and educator in their emergency program. In 2009, she left the east, excited to join the Emergency Medicine Group at the Alberta Children's Hospital. Once in Alberta, Kerri became an active instructor with the KidSIM program, teaching at the undergraduate, resident, fellowship and staff levels as well as helping out with the Mobile Outreach Education program and various conferences and workshops. Delighted by the chance to take on a more formal role with the KidSIM program, in the spring of 2016, Kerri jumped at the chance to become an Assistant Medical Director overseeing the Mobile Outreach Education program. While she loved her role as the lead for Mobile Education, Kerri has recently taken on the new role of Interim Medical Director of the KidSIM Program. So far, she has worked with the team to navigate the Covid-19 pandemic and the program's Royal College Accreditation and is excited to explore how KidSIM can contribute its simulation expertise to help further the Quality Improvement work being done at the Alberta Children's Hospital.

DR. ADAM CHENG

Director, Research and Development

Dr. Adam Cheng is a Professor with the Department of Pediatrics and Emergency Medicine at the University of Calgary. As a scientist and researcher at the Alberta Children's Hospital Research Institute, he oversees a program of simulation-based research focused on improving outcomes from cardiac arrest. Currently, he is leading the simulation research program (KidSIM-ASPIRE) at ACH and is also the Co-Director of the KidSIM Fellowship Program. Adam is internationally known for his work in simulation-based education and research. He has developed numerous simulation-based curricula, both at the local and national levels. His research in cardiac arrest, cardiopulmonary resuscitation and debriefing, includes a number of highly cited, simulation-based randomized controlled trials that have informed changes in international resuscitation courses. In 2018, he was lead author on the American Heart Association's Scientific Statement on Resuscitation Education that was published in the journal Circulation. He has edited several textbooks and is lead author of the Education Science of the 2020 American Heart Association Cardiopulmonary Resuscitation guidelines. Adam has been an active international leader. He is past-chair of the International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE), which is the largest simulation research network in the world, comprised of over 250 pediatric hospitals and simulation programs.

DR. GAVIN BURGESS

Assistant Medical Director

Dr. Gavin Burgess trained at the University of Cape Town, South Africa and moved to Canada in 2000, working as a Family MD in rural BC before moving to Calgary as an Emergency Physician at ACH. Gavin took on the role of Assistant Medical Director in 2016 and teaches simulation education and runs simulations for a variety of experience levels of learners. He is also involved with teaching in the Just in Time and the Mobile Education program. He played a key role in organizing and overseeing the Pediatric Acute Care Education Program (PACE) and teaches PALS, ATLS, and TRIK courses. He is the co-chair of the Pediatric Airway Course, a multidisciplinary pediatric airway course developed at ACH focused on airway management along with PICU and Anaesthesia. Gavin teaches the ASSET courses and shares his expertise at international conferences, presenting workshops with the KidSIM team.

DR. CHRISTINE KENNEDY

Assistant Medical Director

Dr. Christine Kennedy is originally from Winnipeg and attended medical school at the University of Manitoba before moving to Calgary for her Pediatrics residency and Emergency Medicine fellowship. During her fellowship she developed a passion for medical education and completed the Teaching Scholars in Medicine Certificate Program at the University of Calgary. She has been working as an Emergency Physician at the Alberta Children's Hospital since 2011 and has a very active role in teaching simulation with the KidSIM program. She teaches trainees, staff physicians and allied health professionals and thoroughly enjoys going out on mobile education trips to teach with the KidSIM team. Christine is excited to take on a formal role as Assistant Medical Director with the KidSIM program to oversee the Mobile Outreach Education Program and help grow other educational programs within KidSIM.

DR. VINCENT GRANT

Director, Fellowship Program

Dr. Vince Grant is the Co-Director of the KidSIM Fellowship Program and has been the Provincial Medical Director of the eSIM Program for Alberta Health Services since 2019. He is an Emergency Physician at ACH and a Professor of Pediatrics and Emergency Medicine at the Cumming School of Medicine at the University of Calgary. Vince was the Founding Medical Director for the KidSIM Program from 2005-2020, as well as the Founding Medical Director for the ATSSL at the University of Calgary. He has been an integral part of the growth of simulation-based education locally and has developed a national and international reputation for his work in this area. His main academic interests include simulation faculty development, debriefing and feedback methods, interprofessional simulation education, rural mobile outreach simulation, and innovation in medical education technologies.

HELEN CATENA

Simulation Education Consultant

Helen graduated from Oxford UK with a pediatric nursing degree and after working in the UK for 2 years moved to work at The Hospital for Sick Children in Toronto. 2 years later Helen relocated to the Alberta Children's Hospital in Calgary, working in the Intensive Care Unit since 2004. She became interested in simulation in 2006 when she started teaching in the KidSIM Program. Helen helped lead the development of the Undergraduate Interprofessional Education program as well as the Inpatient Hospital Pediatrics program. Helen formally joined the KidSIM Program part-time in 2011 as the KidSIM Simulation Education Consultant helping to co-ordinate all aspects of education that occurs in the program.

AMY CRIPPS

Simulation Education Consultant

Amy has a wide range of knowledge from her acute care experience in PICU and as a 2-person pediatric transport team as a RRT. This helps her be able to teach any level of learner from any discipline. She has been involved in simulation since 2008 and has been essential for the success of the Just-In-Time inpatient program that started in 2011 and continues to run bi-monthly. Amy has helped this unique delivery of simulation spread into other areas including PICU, NICU and Oncology/Hematology unit, making it a huge success. Amy works to organize and assist in all aspects of the program, particularly mentoring and faculty development. Amy assumed the role of Simulation Education Consultant in 2016.

JENNY CHATFIELD

Simulation Education Consultant

Jenny is an Emergency Department nurse, her career has incorporated roles within education from a clinical nurse instructor for student nurses, to a teaching position at Mount Royal University, to most recently being a Clinical Nurse Educator in the Emergency Department. She has been heavily involved in many aspects of KidSIM since 2008 including teaching and management of portfolios such as mobile education. With Jenny's experience and her Masters in Management Nursing she played a pivotal role as a research assistant during the Family Centered Care research study, to see how simulation can help families prepare for discharge, and has continued her interest in this project with the on-going training of families. Jenny assumed the role of Simulation Education Consultant in 2016.

NICOLA PEIRIS

Team Lead

Nicola graduated with her BSc. from the University of Calgary. She has worked at the Alberta Children's Hospital since 2008 and joined the KidSIM-ASPIRE team in 2011, providing operational and research support. Nicola assumed the role of Team Lead for KidSIM in 2016 and works with the Education Consultants to oversee the day-to-day operations in the program. Nicola has also managed numerous research projects since 2009 and has worked with research teams within the PICU and the KidSIM-ASPIRE Program. She was the Network Manager for the International Network for Simulation-based Pediatric Innovation, Research and Education (INSPIRE), which is the largest pediatric simulation research network in the world.

KEELY PISCOPO

Administrative Assistant

Keely has a Medical Office Administration Diploma which she obtained from CDI College. Her career with AHS started in 2012 where she worked for the Regional Scheduling Offices. Keely came to the Alberta Children's Hospital in June of 2015 where she worked for the Department of Pediatrics, Section of Emergency Medicine as administrative support for three emergency physicians. Keely has a wide array of experience with computer software, and technology troubleshooting. She brings with her talent, organizational experience, and in depth knowledge and she has been a real asset since joining our team. Keely assumed the role of Administrative Assistant in 2016.

KERIANNE CRAIG

Simulation Aide

Kerianne has been at AHS Supply since 2003 and moved in 2009 to work in Supply management, specifically for Alberta Children's Hospital. This experience has been essential in how she has been able to help ensure all the labs are constantly organized and restocked for both the facilitators and the learners. She has helped organize and tidy the center and is already relied on by all of KidSIM. Kerianne's other interest is learning to run the wide range of mannequins used for all levels of sessions so that she can be more involved in the scenarios themselves. Kerianne assumed the new role of Simulation Aide in 2016.

OUR SUPPORT

ADMINISTRATION
Kerri Landry
Christine Kennedy
Gavin Burgess
Nicola Peiris
Helen Catena
Amy Cripps
Jenny Chatfield
Louise Simonot
Kerianne Craig
Keely Piscopo

FELLOWSHIP PROGRAM
Genevieve Gravel
Rob Carey
Tyson Savage
Kathleen Smith

RESEARCH
Adam Cheng
Jeffrey Lin
Jennifer Davidson
Viktoriya Lambert
Brandi Wan

MOBILE EDUCATION
Christine Kennedy
Jenny Chatfield

BIOMED SUPPORT
Dan Duperron
Darren Steidel

TRAUMA SERVICES
Jonathan Guilfoyle
Sherry MacGillivray

PEDIATRIC TRANSPORT
Caitlin Colvin
Chris Broderick
Eli Gilad
Jenna Camphaug
Kimberley Menzies
Neil Baribeau
Shannon Lindsay
Troy Carmichael

EMERGENCY MEDICINE
Andrea Boone
Antonia Stang
Benjamin Thomson
Caitlin Fernley
Christie Li Pi Shan
Connie Abrey
Dana Stys
Debra Lum
Deborah Tamura
Diane Hamel
Erin Lalande
Gord McNeil
Heather Boucher
Hussein Unwala
Ian Wishart
Jennifer Boulton
Jennifer Graham
Jennifer Thull-Freedman
Jillian Gautschi-Nichol
Jodi Christoffersen
Julie Wallin
Johnson Fong
Kelly Millar
Kida Stevens
Kristen Johnson
Laura Tak
Lorraine Mabon
Melanie Willimann
Michele Bjornson
Naminder Sandhu
Paula Espinoza
Peggy Thomson-Gibson
Roxanne Turnbull
Russell Lam
Shabnam Minoosepehr
Sherry Wilson
Shirmee Doshi
Tammy Nelson
TJ Kodeeswaran

RESPIRATORY THERAPY
Alicia Tisnic
David Neufeld
Jeanine Johnson
Jennifer Oliverio
Michelle Vizard

STEP
Coty Ong
Kathryn Le-Williams
Leslie Ramos-Charlton

ECLS
Pat Yee
Steve Menzies

PICU
Andrea Jesney
Catherine Ross
Eli Gilad
Dori-Ann Martin
Jaime Blackwood
Joy Handley
Laurie Lee
Meagan Mahoney
Rob Catena
Tanya Drews
Wendy Bissett

NICU
Amelie Strizke
Blair Becker
Claire Wattleworth
Jan Lind
Lori Stephen
Norma Oliver
Trish Loeb

INPATIENT PEDIATRICS
Angie Arcuri
Carolyn Robson
Chantelle Barnard
Coty Ong
Danielle Maubert
Deanna Cook
Dominique Eustace
Heather Breault
Jenna Wiseman
Jennifer Walker
Jennifer Shehata
Jodi Meyer
Laura Davies
Lily Ragan
Lindsay Long
Marsha Bucsis
Maria Clowater
Maria Vera
Maribeth Faustino Hill
Matthew Jansen
Megan Allison
Michael Friesen
Michelle Jackman
Preet Sandhu
Renee Jackson
Sarah Schindel
Sharon Spicer
Suzette Cooke
Tobi Reisig

SURGERY
Corey Dowler
Laura Dunbar-Pubben
Shannon Warner
Steve Lopushinksy
Tara Bourque
Caitlin Chester

OPERATING ROOM
Adam Spence
David Lardner
Duncan McLuckie
Elisabeth Dobereiner
Jamin Mulvey
Jeremy Luntley
Mark Gale
Mary Brindle
Michael Letal

PACU
Karen Bibaud
Tara Bourque

HOME CARE
Amber Deus
Deborah Tamura
Juanita Davis
Meredith Luipasco

ROTARY FLAMES HOUSE
Kathryn daSilva Curiel
Suzanne Tinning

CLINIC
Wendy Schwarz
Rebecca Perry
Eileen Pyra

CASUAL
Ashley Holloway
Louise Simonot

OUR EDUCATION COMMITTEE

The purpose of the Pediatric Simulation Education Committee (PSEC) is to provide leadership, expertise and guidance in relation to the dissemination of pediatric simulation education, simulation curriculum, scenario design, evaluation, and simulation research. PSEC objectives include:

- To develop, review and disseminate peer-reviewed scenarios for use within the simulation program.
- To ensure excellence in the quality of program curricula and scenarios.
- To evaluate needs assessments from various user groups and design curriculum and scenarios to support these needs.
- Encourage and champion interprofessional education.
- Support the development of education models which integrate simulation technology.
- To review summative evaluations of user groups.
- To critically evaluate education provided by the KidSIM Program.
- To advise the Medical Director of the KidSIM Program as to resource needs from various user groups.
- Through the Medical Director of the KidSIM Program: To advise the Department Chair, Pediatrics; the Facility Medical Director and the Vice President of the Alberta Children's Hospital, the Child Health Advisory Committee, the Executive Director of eSIM, the Director of eSIM South, and the ACH Foundation about resource issues and needs in pediatric simulation.
- To provide a leadership role in experiential education related to pediatric patient simulation in Southern and Central Alberta, and Southeastern British Columbia.
- At the request of the Medical Director, KidSIM Program: To provide representation on related local, regional and provincial committees when required.
- To facilitate and support research projects incorporating pediatric human patient simulation.

Nicola Peiris (chair) - Team Lead, KidSIM
Dr. Kerri Landry - Medical Director, KidSIM
Dr. Vincent Grant - Medical Director, eSIM Provincial Simulation Program
Dr. Adam Cheng - Lead, Research & Development, KidSIM-ASPIRE
Dr.Gavin Burgess - Assistant Medical Director, PACE, KidSIM
Dr. Christine Kennedy - Assistant Medical Director, Mobile Education, KidSIM
Helen Catena - Simulation Consultant, KidSIM
Amy Cripps - Simulation Consultant, KidSIM
Jenny Chatfield - Simulation Consultant, Mobile Program, KidSIM
Dr. Ian Wishart - Section of Emergency Medicine
Dr. Mark Gale / Dr. Michael Letal - Department of Anesthesia
Andrea Jesney - Pediatric Intensive Care Unit
Sherry MacGillivray - ACH Trauma Program
Dr. Eli Gilad - ACH Transport Program STEP Team
Jeffrey Lin - Fellow, KidSIM-ASPIRE
Genevieve Gravel - KidSIM Fellow
Rob Carey - KidSIM Fellow
Tyson Savage - KidSIM Fellow
Dr. Suzette Cooke - Section of Hospital Pediatrics
Corey Dowler - PACU
Karen Bibaud - PACU
Jennifer Davidson - Research Coordinator, KidSIM-ASPIRE
Connie Abrey - PALS Program Coordinator
Dr. Sharron Spicer - Child Health Safety Committee
Resident/Fellow representatives (up to 2)

OUR FUNDING

The KidSIM Program is privileged and grateful to have received financial support for infrastructure, equipment and operations from various sources since 2005. In particular, the KidSIM Program is extremely proud of its long-standing relationship with the Alberta Children's Hospital Foundation, without whose support the pediatric simulation program would likely not exist.

ALBERTA CHILDREN'S HOSPITAL FOUNDATION (ACHF)		
2004	$262,898	Purchase of School-Aged Mannequin (METI) and AV equipment
2005	$7,400	Purchase of Multimedia Equipment
2006	$60,000	Purchase of Infant Mannequin (METI)
2007	$203,740	Purchase of Portable Infant (Laerdal), School-Aged (METI) and Adolescent Mannequins (Laerdal)
2007	$20,000	Physiological Monitor for Simulation Laboratory
2007	$20,700	Funding for Simulation Facilitators
2008	$76,000	Outreach equipment and portability solutions
2008	$21,000	Funding for Simulation Facilitators
2008	$2,394,500	Construction and Outfitting of the KidSIM Centre (2012-2013)
2009	$150,000	Three year funding commitment for Simulation Facilitators (2010-2013)
2014	$100,000	Funding for Simulation Facilitators
2015-2019	$1,582,000	Funding for Infrastructure Support and Simulation Facilitators
2018-2019	$181,000	Support for KidSIM Innovation: ACH 3D Printing Challenge
2019	$93,685	Radiothon Support for purchase of new mannequins
2019	$90,000	Radiothon Support for KidSIM Innovation: Virtual and Augmented Reality at ACH
2019-2022	$1,350,000	Funding Extension for Infrastructure and Operations Support
2019-2020	$51,784	Baby Sim Doll, Radiothon 2019
2019-2020	$985	4 Little Junior CPR Trainers, Radiothon 2019
2019-2020	$14,435	4 Resusci Juniors CPR Trainers, Radiothon 2019
2019-2020	$490,000	Virtual & AR Technology, Radiothon 2019
2019-2020	$26,480	Additional Funding, Radiothon 2019

FAMILY CENTERED CARE AND TECHNOLOGY PROGRAM (FUNDED BY ACHF)		
2011	$30,000	Purchase of Toddler-Aged Mannequin (Gaumard)
PGME PROGRAM - DEPARTMENT OF PEDIATRICS		
2010	$30,000	Purchase of School-Aged Mannequin (Gaumard)
2010	$30,000	Purchase of Toddler-Aged Mannequin (Gaumard)
2013	$25,000	Purchase of School-Aged Mannequin (Laerdal)
2015	$30,000	Purchase of Toddler-Aged Mannequin (Gaumard)
2021	$26,200	Purchase of School-Aged Mannequin (Laerdal)
DEPARTMENT OF PEDIATRICS		
2005-present	0.4 FTE	Medical Director, KidSIM
2005-present	0.5 FTE	Program Coordinator/eSIM Consultant, KidSIM
2005-2013	07/08 - $15,000 08/09 - $27,886 09/10 - $26,285 10/11 - $22,258 11/12 - $18,716 12/13 - $19,227	KidSIM Operations • General Supplies • Small / Minor Equipment • Program Travel (Continuing Education) • Warranties
2006-present		MD Facilitation Hours
2011-present	0.5 FTE	Research & Development Director, KidSIM-ASPIRE
2011-present	0.5 FTE	Administrative Assistant, KidSIM
eSIM PROVINCIAL SIMULATION PROGRAM		
2008-present	0.2 FTE	eSIM Consultant, KidSIM
2011-present	0.4 FTE	eSIM Consultant, KidSIM
2018-present	0.2 FTE	eSIM Consultant, KidSIM
2010	$30,000	Infant Mannequin (Gaumard)
2012	$30,000	Infant Mannequin (Gaumard)
OTHER PROGRAMS		
2017	$20,000	Purchase of Premie-Aged Mannequin (Gaumard) - NICU Program, Family Donor
2017	$3,000	Purchase of Premature Anne Task Trainer (Laerdal) - NICU Program, Family Donor

OUR PROGRAMS

KidSIM is responsible for the training of approximately 6, 000 learners per year. These learners come from all levels of training, from undergraduate learners all the way through to practicing health professionals, and also includes the parents and family supports who care for children at home or in schools. The breadth of the education programs offered by KidSIM demonstrate our commitment to providing accessible, comprehensive, integrated and coordinated health education delivery to both healthcare providers and families.

Our objective of delivering simulation-based education to all individuals and interprofessional teams across the ACH and our focus on expanding this education to families aligns our work with the ACH vision of providing excellence in family-centered care. Our track record also demonstrates alignment with the strategic directions of AHS, in that we are bringing health care education to the communities that serve their local populations, striving for a safer and more efficient care system, and increasingly showing that we are working towards better health outcomes.

KidSIM Program Outcomes:

- Improved performance of skills of ACH staff and emergency staff in hospitals across the catchment area
- Improved adherence to established clinical guidelines and protocols of ACH staff and emergency staff in hospitals across the catchment area
- Improved teamwork and collaboration of ACH staff and emergency staff in hospitals across the catchment area
- Improved performance of skills of family/caregivers providing in-home care to children with acute illness
- Improved patient safety and quality of care through uncovering and addressing patient safety threats
- Conduct innovative, high-quality, simulation-based research to inform healthcare providers, administrators and families of best practices, which will optimize pediatric patient outcomes from illness.

As a Royal College of Physicians and Surgeons of Canada accredited simulation program, all activities developed and provided by KidSIM are automatically approved as accredited activities within the Maintenance of Certification (MOC) Program. The Royal College of Physicians and Surgeons of Canada (Royal College) established a formal accreditation system for simulation programs with the goal of building capacity in simulation-based medical education. Simulation program accreditation is a voluntary process that reflects a simulation program's ability to provide simulation-based education activities that model the highest administrative, educational, and ethical standards. Accredited simulation programs are internationally recognized as leaders in simulation-based learning and providers of activities that are planned and delivered according to the latest educational research to ensure patient safety and quality care provided by health professionals.


Non Active
Simulation Only
CODE
PULL FOR HELP
Antibiotics

PEDIATRIC EMERGENCY MEDICINE

Undergraduate Interprofessional Education

The Undergraduate Interprofessional Education Program is one of the first of its kind in the entire world. This program allows undergraduate learners from five different health professions in their final year of training to work together to manage common pediatric illnesses and injury. These sessions include nursing students from the University of Calgary and Mount Royal University, respiratory therapy (RT) students from SAIT, licensed practical nurse (LPN) students from Bow Valley College, Emergency Medical Services (EMS from SAIT) and medical students from the University of Calgary during their clerkship rotation in Pediatric Emergency Medicine. These sessions focus primarily on teamwork skills such as communication, roles and leadership while also learning to manage common pediatric acute care presentations (such as shock, respiratory distress, seizures and anaphylaxis). This program runs on a weekly basis year round.

Pediatric Emergency Medicine Senior Resident / Fellow Interprofessional Team Training

The Emergency Medicine interprofessional team training program links senior residents (typically PGY3 and above) who are performing their rotation in Pediatric Emergency Medicine, as well as Pediatric Emergency Medicine Fellows (as part of their academic half-day schedule) with experienced emergency department nurses from the Alberta Children's Hospital. This session runs twice monthly and incorporates cases related to complex emergency department patients. The program focuses on allowing senior residents and pediatric emergency medicine fellows the opportunity to lead resuscitation teams from the pediatric emergency department. Team training is a compulsory part of the education curriculum for emergency room nurses and they must attend one session per year. The curriculum focuses on teamwork skills and management of complex pediatric acute care patients.

Pediatric Emergency Medicine Fellowship Simulation Education

The curriculum for pediatric emergency medicine fellowship training was developed with help from leaders the Alberta Children's Hospital. The new national curriculum adopted by the Royal College of Physicians and Surgeons of Canada has 16 required subjects embedded into it over the 2 years, to create a total of 24 scenarios. This fellowship training not only focuses on the medical management of the patient in these scenarios but also developing and improving teamwork and communication skills by ensuring that they are all interprofessional. Nursing and Respiratory Therapists from the emergency department are a vital component in these monthly sessions.

Pediatric Emergency Medicine Attending Physician Interprofessional Simulation Education

Recognizing the importance of team training and continuing competence, the emergency department has implemented monthly simulation sessions involving attending physicians, staff nurses and respiratory therapists. Whenever possible, the training occurs in the Trauma room of the Alberta Children's Hospital Emergency Department to enhance the realism of the scenario and evaluate current systems. These sessions focus primarily on the management of acutely ill pediatric patients.

Pediatric Emergency Medicine Junior Resident Simulation Education

This program runs twice monthly and is aimed at junior residents (PGY1 and 2) during their Pediatric Emergency Medicine rotation. These residents come from various postgraduate programs and this program is intended to teach them various aspects of the care of common pediatric acute care scenarios (including respiratory distress, shock, seizures, anaphylaxis and trauma care).

Managing Pediatric Emergencies for Adult Emergency Department Nurses

This program provides valuable experience and teaches basic management of pediatric emergencies to adult emergency department nurses during their orientation period. The learners are new nurses from all Calgary Emergency Departments and Urgent Care Centers. Objectives of this program are based on management and identification of common pediatric emergency presentations.

Pediatric Trauma Services Simulation Program

This Pediatric Trauma Program provides simulation opportunities to any healthcare providers that work with trauma patients to teach both teamwork and medical management. These Trauma simulation sessions help to look at issues, guide revisions to the system and educational needs. Learners come from a variety of clinical backgrounds that includes: the pre-hospital environment for Emergency Medical Services, the Emergency Department, Diagnostic Imaging, Transfusion Medicine, the Intensive Care Unit, the Operating Room, and the inpatient Trauma Unit (Unit 4). Involving multiple services across the trauma care continuum enables better communication and care management necessary to effectively treat multiple injured pediatric patients; doing this with simulation is felt to be the best, most realistic technique. The Pediatric Trauma Program also collaborates with KidSIM in the Mobile Education Program. As a Level 1 Pediatric Trauma Centre, the Trauma Program is mandated to provide education for the ACH referral centers. Scenarios are developed on needs assessment from those centers, as well as real cases that were identified as being challenging. The interprofessional teams take part in the scenario in their own resuscitation/ trauma room which helps to identify equipment, resources, logistical and educational needs. This proves to be invaluable for the referral centers in multiple ways. Of note, the Accreditation Canada survey September 2019 for Provincial Trauma Distinction highlighted this robust outreach program as a clear demonstration of commitment to provide quality trauma care to the pediatric population of Southern Alberta.

PEDIATRIC INTENSIVE CARE UNIT (PICU)

Mock Code Program

This long-standing program provides code blue (resuscitation) teams and the corresponding 'host' staff where the mock code blue occurs to practice resuscitation skills on a monthly basis. Various areas around the hospital are selected to 'host' mock code training. Scenarios are built specifically for the 'host' area and involve a deterioration of a patient that would typically be seen in that clinical area. The scenarios are geared to the interprofessional on-call resuscitation team. However, staff from the 'host' unit is also included in the simulation. There is also a significant focus on process related components within the mock code to identify gaps or issues around those aspects of calling a code blue.

This program involves the real team that would be running the code. To maintain a safe learning and debriefing environment, there is always a hospital pediatrician and intensivist as part of the team facilitating the mock. Following each mock code there is a summary document circulated with learning points from the event (system, communication / teamwork skills, etc.)

PICU Continuous Renal Replacement Therapy (CRRT) and Therapeutic Plasma Exchange (TPE) Programs

The PICU based CRRT program was initiated in the fall of 2016 and the team consists of PICU physicians and RN specialists. For 2020 we have just launched a TPE program using the same CRRT equipment and team members. This team of 30 Specialists receives initial training sessions of 2-3 days, and then annual re-certifications of 4-8 hours. All these sessions incorporate simulation approaches to create optimal learning for the participants and help the educators evaluate education processes. A big challenge for the team has been maintaining skills for these low volume/high acuity therapies and we have found simulation helps the team feel confident providing excellent care for our critically ill pediatric patients.

Extracorporeal life support (ECLS) Team Training

This is a program involving training interprofessional and interdisciplinary teams to manage critically ill pediatric patients requiring initiation of ECLS. This essential care was initiated in October 2011 and has required a lot of training for the staff. Curriculum for this training has been created with objectives focusing around the initiating of ECLS for pediatric patients (newborn to 18yrs) who have received maximal medical management including CPR requiring heart and/or lung support similar to bypass. These sessions include a large interprofessional team including Nurses/Respiratory therapy, General Surgeons, Intensivists, Cardiologists and Perfusionists. This allows them to practice the entire procedure of stabilizing and connecting a patient to the ECLS and can include simulating complications and rare events that the team may face during this complex process.

The program owns its own ECLS simulator which allowing staff to train on circuit and patient troubleshooting complications. The ECLS team have developed their own cannulation mannequins in both infant and pediatric sizes that allow appropriate CPR delivery, cannulation of neck vessels, and attachment and circulation on pump. Simulation is also routinely used to map out process throughout different aspects of the program. All patients at ACH have access to ECLS therapy as the program has now expanded to include all inpatient areas, the NICU and the emergency department. The ACH ECLS program is unique worldwide and success can be largely attributed to simulation as the core of the educational curriculum.

As of January 2021, the program has placed 57 children on ECLS with 40 of those children surviving to hospital discharge. Survival to hospital discharge for ACH ECLS patients is 70%, as compared to international averages of 41-58% (depending on diagnosis).

PEDIATRIC INTENSIVE CARE UNIT (PICU)

STEP Team Training

The STEP team is a pediatric critical care response team who provides early assessment, education and management of evolving unstable pediatric patients admitted to inpatient units, as well as transition care for patients being transferred out of the PICU to the inpatient units. The STEP team is involved in a number of interprofessional simulation sessions and use the venue to provide education to healthcare teams on the role of the STEP team, as well as patient management of acutely ill children.

The team uses simulation to orientate new team members, maintain skills and practice management of the deteriorating pediatric patient. The team is involved in many different educational courses that simulate the need for the healthcare team to activate the STEP team. If the STEP team is available and not busy with a real patient they will respond to this call and take part as a participant in the simulation.

PICU Interprofessional Team Training

This program focuses on critical care medicine and team training in the Intensive Care Unit. The participants are PICU Nurses, Respiratory Therapists and Attending PICU physicians. The objectives focus primarily on teamwork skills and medical management of the most critically ill and complex children cared for in the PICU. They have used simulation to change systems and introduce new equipment to staff ensuring that they are well trained and prepared for any situation.

Pediatric Intensive Care Unit (PICU) Just-In-Time Training

The education team in the PICU has established regular interprofessional sessions based on real patients. The benefit is that the worst case scenario of a deterioration of a patient is practiced in a safe environment so that the team knows what to do and how to manage the change in condition.

Pediatric Transport Program

The Pediatric Critical Care Transport Team (PCCTT) is responsible for the safe transfer of critically ill children from across southern Alberta and southeastern British Columbia to the Alberta Children's Hospital for escalating care, and to transfer patients to the Stollery Children's Hospital (Edmonton) for cardiac surgical services. This team currently has 34 RN's and RT's trained to fly transport patients without physician accompaniment (RN/RT team only). In 2020, 92% of pediatric transports performed used a two person (nurse and respiratory therapist) transport team, and a medical control physician consulting via phone.

Last year the Transport numbers tapered off with the surge of the pandemic in our province. 2020 had 203 children transported by the transport team. Simulation is a key component to the educational curriculum, including a formalized simulation program that runs the team through weekly sessions. Simulation is used for initial training, skill maintenance, process improvement, and equipment familiarizations. The transport team partners with EMS, STARS and Air Ambulance to run simulation sessions incorporating their team members and to utilize their vehicle simulators to run scenarios in the real environment. The program utilizes a simulation exam as a part of the certification process for RNs and RTs. The transport team has partnered with the mobile education program over the last number of years to have a transport team member trained as a facilitator to participate on every mobile outreach session.

The past 4 years have seen the transport team regularly incorporate telehealth during mobile education sessions. This provides an added layer of realism and education to mobile education, and is a launching pad for the transport program to widely implement the use of telehealth technology for all calls coming in to the team. Simulation provides the opportunity to be one of the most well-trained pediatric transport teams in the country.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OPERATING ROOMS/DAY SURGERY/POST-ANESTHETIC CARE UNITS

Day Surgery

This program runs monthly simulation sessions capitalizing on previous set education time, currently 45 minutes on Friday mornings. These sessions are uni-professional focusing on nursing staff of the Short Stay Surgical Unit and occasionally the Nursing Support Team. The objectives focus on managing a variety of routine post-surgical complications, emergency scenarios, addressing past complex cases or safety concerns, and recently, the addition of safest together initiatives.

Post-Anesthetic Care Unit (PACU)

Simulation education is built right into existing education time for PACU staff which is currently 45 minutes on Friday mornings. Historically this program runs session 2-3 times / year for nursing staff. The team is trying to include Anesthesia into the sessions when they are available. Most of the sessions to date have focused on emergency events that may happen in PACU, such as airway management. PACU also includes simulation in annual continuing education skills day, which every staff member must complete.

Surgical Services Simulation - Combined OR/PACU/SSSU

This program runs monthly with members for all three nursing teams in surgical services (OR, PACU and the Short Stay Surgical Unit). Scenarios are based on a variety of emergency management scenarios that all areas may see like anaphylaxis. A big focus is to facilitate communication and team building by bringing nurses from all areas of Surgical Services together. These sessions have allowed teams to work and learn together while helping to identify the different skill sets and supports that each area brings to the care of our surgical patients. Objectives depend on the environment that the scenario is set but focus mostly on the nursing management of common surgical complications. This past year, simulation was used to help implement the Entonox program, so the nurses could have a scenario on what using Entonox would look and feel like.

OR Education On Demand

This is a relatively new simulation program within the Operating Room. "Education on Demand" has a similar design to Just In Time Simulation. The intent of this program is to provide a simulation experience based on potential situations that have a high probability of occurring within the OR clinical environment. These scenarios require a high functioning team to manage but the OR team may not experience these situations on a regular basis. With Education on Demand sessions, everyone gets an opportunity to work through an acute situation and together determine how to provide the best care to the patient. The OR team involved in these scenarios work together throughout the rest of the day; the idea is that participating in these simulations will provide them with the ability to plan, practice and discuss how they will work together in the event of an actual crisis. In order to respect the needs of our learners and the flow of patients through the OR, these simulation experiences will be kept to 30 minutes. Targeted learning objectives focus mainly on potential system issues that can arise during an acute situation and on building the perioperative team. Currently, we are trying to run these simulations on a quarterly basis using already scheduled education on a Friday morning.

MEPA (Managing Emergencies in Pediatric Anesthesia)

This is an all-day simulation course focusing on 4 Pediatric Anesthesia Crises. Every resident in the U of C Anesthesia Program has been taught through this internationally-recognized program that is offered every 6 months. MEPA is a well- established course in the UK which we have brought to the ACH to improve comfort and competence in Pediatric anesthesia management for our resident trainees.

Operating Room and Post Anesthetic Care Unit Just-In-Time Training

This unit has been successful in implementing Just-In-Time training into the OR and PACU. They have the unique situation in being able to prepare educational sessions based on the planned surgical cases. This allows them time to predict potential situations that need to be practiced to ensure the best possible outcomes.

Perioperative Crisis Management Course (POCM)

POCM is a full one-day course at Alberta Children's Hospital designed and developed to improve crisis management in our operating rooms. POCM is a multidisciplinary, inter-professional course involving operating room RNs, post-operative recovery room RNs, Pediatric Anesthesiologists, Pediatric Surgeons, and Respiratory Therapists. This is a 6 hour course involving 4 simulated crises scenarios based on our last 1 year of experience in the peri-operative environment. Those cases which have been reviewed at our Quality Improvement/Quality Assurance rounds are used as a foundation for scenario development. In this way we have united our QI/QA initiative with a simulation initiative with a goal to optimize patient care. POCM participants receive extensive feedback on their performance. In addition to self-assessment, participants engage in prolonged debriefings where team assessment is the focus. Both individual and team performance are highlighted within each debrief and all members of the team are involved in each scenario and debrief. The objectives include the recognition of the importance of a multidisciplinary team and the impact of human factors on the delivery of safe and effective care during a perioperative crisis.

Pediatric Anesthesia Core Sessions

This is a 9 week program offered every two years at ACH. Over 9 Thursday afternoons, all U of C anesthesia residents (from R1-R4) participate in a four hour session with didactic lectures covering a broad range of pediatric anesthesia subjects. Prior to the lectures we facilitate simulations which are germane to the proceeding lectures for that particular session.

INPATIENT PEDIATRIC UNITS

Pediatric Interdisciplinary In-patient Simulation Education

The Section of Hospital Pediatrics has been running interprofessional training sessions with in-patient unit nurses and respiratory therapists since 2007. This is a truly novel program that includes the attending staff hospital pediatricians. These bi-monthly sessions incorporate specific cases related to the inpatient unit where the participating staff normally works. The sessions are designed to highlight both medical objectives and teamwork skills. The Section of Hospital Pediatrics has made this a mandatory education session for all Pediatric Attending Hospital Pediatricians working at the Alberta Children's Hospital. Simulation sessions have incorporated other departments to highlight new policies and processes, including PICU and the ECMO team, anesthesia, sub-specialty medical and surgical services, and Child Life, to make these simulations truly relevant to current in-patient practice.

Pediatric Residents' Academic Half-Day Interprofessional Simulation Team Training with In-patient Nurses

On a yearly basis, each post-graduate year (PGY) level of resident is offered two complete afternoons dedicated to simulation team training with in-patients nurses (total 8 times per year). During these sessions, the pediatric residents are paired up with nurses from the various in-patient units and work through pediatrics scenarios. The cases are run with respect to the unit from which the nurses come, so that these are the types of patients they would be likely to see on their unit. For example, the PGY2 residents might run a scenario of shock, which would be modified to fit an oncology patient if the nurses are from Unit 1. The residents are given the opportunity to act both as team leaders and team members during each of the scenarios. These sessions focus on teamwork skills, as well as medical management.

General Nursing Orientation Programs

Clinical Nursing Educators (CNEs) from across the hospital created a new orientation for every RN and LPN that starts at the Alberta Children's hospital. This is an intense 2 week course allowing the new staff to obtain all the information they need to in a short time. New in 2018, the program has incorporated Pediatric Emergency Assessment, Recognition, and Stabilization course (PEARS, Heart & Stroke Foundation) along with simulation to consolidate the knowledge that they obtain from the lectures. The feedback has been very positive in both how much they enjoy the simulation and how much they learned during it. Following this positive introduction to KidSIM and simulation the hope is that they will become more comfortable in taking part in simulation as their career develops at ACH.

Nursing Education Programs

Clinical Nursing Educators (CNEs) from across the hospital regularly build simulation into a variety of their educational programs. This includes everything from orientation of new staff to mandatory annual education to targeted education days. New policies and procedures are introduced using simulation as a teaching tool. Scenarios are built to be unit specific and focus on teamwork and patient management. Simulation is used to help staff familiarize themselves with new equipment and create a safe environment for trouble shooting issues that may have arisen.

Inpatient Just-In-Time Training

The In-patient Just-in-Time Program, focuses on in-patient teams that include nurses, pediatric residents and respiratory therapists. Simulation scenarios are designed around 'real' admitted patients identified by the in-patient medical teaching teams as being 'high risk' for potential deterioration. The scenario objectives are designed specifically around the most likely type of deterioration of that patient. Each scenario incorporates at least 1 core teamwork principle and 1 core medical objective. The learners for these sessions are the actual healthcare team that is currently caring for or potentially providing care for that patient. As such, it is hoped that deteriorations in the actual patient will be better cared for as a result of this deliberate practice. Specific care concerns identified during these sessions might actually be incorporated into the patient's plan of care.

Oncology and Hematology Inpatient Unit Just-In-Time Training

New in 2015 the Oncology and Hematology unit has been using Just In Time simulation training to assist the interprofessional teams care for these complex patients more effectively. This unit is new to simulation and have found that this has been a useful way of integrating simulation into the unit for all the staff to get familiarized with simulation and how if improves patients care. They have been able to successfully predict and practice high risk scenarios using simulation prior to a patient's deterioration allowing the healthcare team to manage the situation more effectively.

CAR-T

Unit 1 started a new transplant process in the unit called CAR-T. The side effects of this treatment can be life threatening and a significant number of patients need PICU admission to support them through these side effects which is similar to sepsis and assessing for neurologic Toxicity. As this is new to everyone (Oncology unit and PICU healthcare workers) and required collaboration with many different groups to understand the process and be aware of the side effects and the process of managing the symptoms for Oncology teams and PICU teams. Training included theory information followed by simulation to provide them the opportunity to practice this management and experience all the potential deterioration to help them prepare. This also included targeted simulation for each unit, with the scenarios being just for each unit.

OUTPATIENT SIMULATION PROGRAM

Outpatient Simulation Program

KidSIM routinely offers training to specific outpatient clinical areas. The learners practice skills as a 'first-responder' and come from a variety of backgrounds such as infectious diseases, cardiology (including ECG technicians), dentistry and diagnostic imaging, among others. Scenarios and objectives are specific to the clinical area and are based on rare and uncommon patient adverse events. These sessions often include the STEP team or Mock Code program.

"I was informed by the gold senior and unit staff that a nearly identical scenario to the one we rehearsed in sim this morning occurred on the ward. The team and nurses performed just as we rehearsed, and the seizures were aborted after Fosphenytoin. That's why we train!"
- RN, Inpatient Unit

"We had a code on the unit yesterday involving a Covid pending / ILI patient. Everyone who came to me stated they felt prepared to navigate the PPE precautions in a code scenario thanks to all the simulation. This patient actually followed the sim scenario, the staff felt they were better able to respond to the code confident in PPE practices, medical management pre code / first few minutes of a code, and RRC cart use because of having recently participated in simulation. Thank you for all you do!!"
- CNE, Inpatient Unit

NEONATAL INTENSIVE CARE UNIT (NICU)

Neonatal Resuscitation Program (NRP)

The ACH NICU Education team has incorporated simulation in the Neonatal Resuscitation Program. This is a required course for all nurses, respiratory therapists and physicians. They run monthly courses to ensure all the staff are kept up to date and maintain their skills. This course has been very successful; simulation has added to the realism for the learners.

NICU Interprofessional team training

The NICU educational team has worked hard providing regular in situ simulation sessions for the entire medical team working that day. They have created common scenarios that they would see and have managed to engage the staff in taking part in simulation. They are also focusing on medical management, teamwork and communication as well as systems. Simulation has helped them adapt the unit to fit their needs better with simple changes helping the staff become more efficient.

Neonatal Intensive Care Unit (NICU) Just-In-Time Training

The Neonatal Intensive Care unit has established a Just-In-Time simulation on real patients that are admitted in the unit. This provides the entire team, novice to expert the skills and knowledge to predict and anticipate potential deterioration of that patient with the hope that the change in condition is able to be prevented.

PALLIATIVE CARE

Rotary Flames House

This program has utilized simulation in a variety of ways. Rotary Flames House has grown to care for patients with greater medical needs, such as ventilated tracheotomy patients. They have incorporated interprofessional in situ simulation for the staff to become more familiar with the specialized needs of their patients. They have also adopted the 'Just-In-Time' philosophy and run scenarios based on the care needed for their patients that are presently admitted in the Rotary Flames House.

SYSTEMS SIMULATIONS

Evacuation Simulations

In preparing for the unknown, simulation can play a valuable role in systems simulations which allow the team to practice potential real events. In 2018, the Alberta Children's Hospital, along with KidSIM, practiced evacuation simulations with several different pieces of equipment. Staff involved safety, simulated within the hospital, what it might be like to have to evacuate patients. Going down different staircases, over different types of flooring and with multiple sizes of patients. By preparing for evacuation events, it can allow for all disciplines within the hospital to be equipped and supported if a real event was to occur.

Systems Simulations

Simulation is being used on a regular basis to test systems/environment in most areas within the hospital. This has included simulating moving sick children from one area to another (ER to OR, inpatient unit to PICU during CPR), to work out new processes and discover some unforeseen challenges in caring for the child in this situation. The simulation helps identify high risk processes that are often unpredicted and also allows staff to experience these scenarios prior to them occurring. Simulation has also been utilized to practice new/changes in processes or test new areas of patient care prior to an adverse event occurring.

Emergency Management Disaster Preparedness

Simulation is the foundation of testing emergency management disasters to prepare staff for an unpredicted event. This has included Code purple (Hostage or threatening situation) and Ebola exposure allowing staff to safely practice an event occurring within the hospital. The staff involved are fully supported during and after the event with a special focus on maintaining psychological wellness while practice distressing events. Systems issues or gaps in education can be identified and a solution created prior to real event.

OUR MOBILE EDUCATION

Mobile Education is an interprofessional program designed to deliver in-situ pediatric education to our Rural and Community partners. We foster supported learning environments where team members can work through common pediatric scenarios and have the opportunity to respond in real time to pediatric medical emergencies in a controlled and safe environment. Participants talk with their patient, gather information, work as a team, perform physical examinations and procedures and work on team communication. A great benefit to having scenarios in your own working environment is being able to find your own equipment, medications, and pediatric references, in order to identify potential problems and challenges prior to having an actual patient. An adjunct to our Simulation Education is a hands-on workshop where key critical resuscitation skills are reviewed and practiced. Our program is committed to supporting our rural partners and helping to identify and correct any obstacles to our pediatric population being able to receive the best possible care. Telehealth is used to regularly incorporate the transport team during mobile education sessions. This provides an added layer of realism and education to mobile education, and is a launching pad for the transport program to widely implement the use of telehealth technology for all calls coming in to the team.

In 2020, like the rest of the world, the Mobile Education team was forced to adapt to the evolving Covid-19 pandemic. While we initially had to shut down, once cases stabilized, sites were no longer overwhelmed, PPE supplies were replenished and front line workers were vaccinated, we were able to resume our program. Following strict guidelines and ensuring that the receiving sites had the capacity, staffing and room to accommodate us, we took up once again the important work of providing pediatric simulation and education to our rural partners. Despite the shut down, we were still able to visit 7 sites in 2020 and we returned with a renewed sense of enthusiasm and commitment to continue this important work. This past year, the mobile team presented a webinar at the Children's Healthcare Canada Spark: Live series to a national audience highlighting our work. The program also completed and published a project assessing the level of Pediatric Readiness of all Emergency Departments and Urgent Cares in the Province of Alberta

The ImPACTS (Improving Pediatric Acute Care through Simulation) collaborative was created to ensure that ill and injured children receive the highest quality of emergency care whenever and wherever it is needed. Currently, there are disparities in pediatric emergency readiness, quality of care and outcomes across emergency departments in Canada and the U.S. and the majority of children are cared for in non-pediatric hospitals who may lack the resources and personnel to effectively care for pediatric emergencies. The ImPACTS 2018 Protocol is an innovative improvement intervention involving Children's Hospitals "hubs" collaborating with Community Hospital "spokes" supported by a central "core" based out of Yale University with the goal of improving overall pediatric readiness at "spoke" sites. The KidSIM Mobile Education Program joined ImPACTS in January 2019 and is currently actively engaged with "spoke" sites in this quality improvement intervention.

10

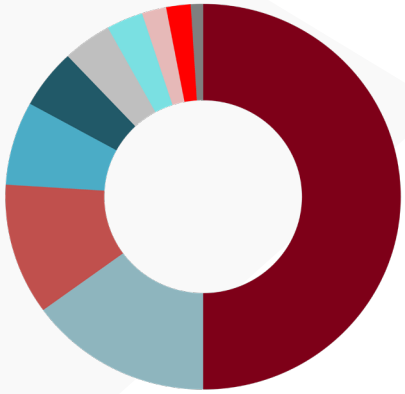
MOBILE TRIPS

Due to the COVID-19 pandemic, the KidSIM Mobile Education Program saw a decrease in mobile site visits in 2020; 10 visits across 7 sites.

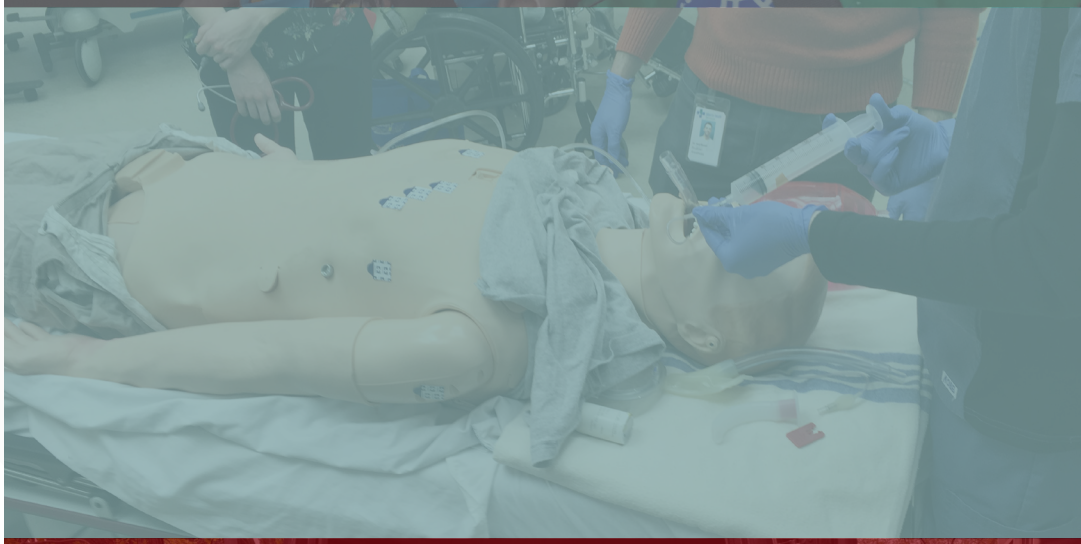
7

SITES

Airdrie, Medicine Hat, Innisfail Peter Lougheed Centre, Olds, Crowsnest Pass, Red Deer.



- Attending Physicians 15%
- Fellows/Residents 7%
- Medical Students 5%
- Nurse Practitioners 2%
- Registered Nurses 50%
- Nursing Students 2%
- Licenced Practical Nurses 11%
- Respiratory Therapists 3%
- Emergency Medical Services 4%
- Other 1%



OUR FAMILY CENTERED CARE

FCC CPR Training

KidSIM has become involved in families whose children have a life threatening cardiac condition that would require them to perform compressions and rescue breathing (CPR) and potentially the need to use an AED to treat the cardiac arrhythmias through defibrillation, the application of electricity to reset the heart into an effective rhythm. Teaching occurs in the Cardiology clinic on the use of the AED and then they are referred to KidSIM to have CPR and AED training that is adapted to suit their specific child. Traditional CPR courses do not address these unique types of situations. Families and their supports attend a 3-4 hour individualized course allowing them to practice CPR with feedback and practicing an emergency situation from start of the emergency, initiating CPR, using the AED, and to simulating EMS arriving. Families have appreciated their improved confidence and feeling of readiness. KidSIM has also been asked by families and schools to help them prepare for a child with a medical emergency in a school setting. Similar to Fire or Lock Down drills these schools are now incorporating medical emergency drills. This training has helped schools create, trial and train staff in their medical emergency plan. This program has slowed slightly due to the COVID-19 pandemic and the number of children homeschooling.

FCC Seizure Program with CPR Training

This program allows families the opportunity to practice the emergency management and care of their child while seizing who stops breathing. A need was identified that families are sent home with children who can have life threatening conditions and these families do not have any opportunity to learn how to deal with these emergencies. Traditional CPR courses do not address these unique types of situations. Families and their supports attend a 3-4 hour individualized didactic and hands on teaching session which includes seizure management teaching and lifesaving skills and CPR training. The goal of these sessions is to provide the family and the child's support system the opportunity to practice using high fidelity simulators and CPR feedback manikins to become skillful at lifesaving skills.

FCC Seizure Program

This program aims to explore the benefits of using simulation to support traditional seizure discharge teaching for families going home from hospital with a child who has a seizure condition. Using simulation, this program increases the confidence and skill level of family members who are discharged home with children who are at high risk of suffering seizures at home. This program was developed from a project that was generously supported by a grant through the ACH Foundation.

FCC Simulation in Educational Centers

Challenges in integrating children with complex health care needs into the educational system (preschool, daycare, kindergarten and schools) have been identified. Simulation has been used regularly to help the educational centers have a better understanding of the child and their needs, and to practice the specialized emergency care that child may require. This program occurs in the educational centers and provides education and simulation for all the staff involved in the child's care, including bus drivers in their centers and utilizes the child's personal equipment such as wheelchairs and standing frames. The staff become prepared for an emergency situation and have had the opportunity to create and trial a plan prior to an incident. Emergency Medical Services (EMS) have also been involved in these simulations to create a plan identifying the unique emergency care requirements of each child to mitigate risks and to prepare EMS staff.

FCC Home Care

Children with complex health care needs are cared for in the community. Simulation has been used to train home care staff to care for the children in a variety of settings including home and schools. This training includes new equipment that a child requires, maintenance of competency and to prepare staff for emergencies in the community.

FCC Tracheostomy Program

The CCAN (Children with Complex Airway Needs) Program, which was supported by the ACH Foundation in development and design, has been in place since January 2019. The past year was incredibly challenging for the program due to COVID-19 and its effects on the hospital. Restrictions limited family coming into the facility and halted all training of community staff. The tracheostomy team quickly learned about virtual delivery of teaching information and were able to ensure that most components of training could be delivered virtually for caregivers, and supplemented for family bedside training. The Tracheostomy Program was eventually able to secure permissions to allow caregiver and family training by a hybrid of virtual and in person training with screening and all precautions in place. 7 families went through the program with 76 caregivers trained via the tandem caregiver training program. Revisions of all materials are underway as well as a redesign of the FCRC website.

2020 brought 2 firsts to the Tracheostomy Program:

1. The first community patient to be placed on mouthpiece ventilation for home ventilation support ;
2. The first pediatric patient to be diaphragmatically paced.

Most patients who require ventilatory support noninvasively do so by mask. We were approached by a physician for a patient whose mask use was deforming her facial structure to see if mouthpiece ventilation would be suitable. We then met the patient and family, assessed her ventilator needs, and devised a plan to trial mouthpiece ventilation. Mouthpiece ventilation is done by a mouthpiece that the patient can utilize to trigger a breath on demand but be able to be off the ventilator for periods of time as well. We created a teaching program for her and her family using low fidelity simulation, and were able to transition her successfully to mouthpiece ventilation during the day and noninvasive mask ventilation at night.

In December of 2019, we received a patient who was suddenly paralyzed with no known cause. She required both tracheostomy and 24 hour ventilation early in her course. She was very unstable and require PICU level of care for months. We were able to train both parents for tracheostomy and ventilator care quickly using extensive simulation due to her high care needs and the family began successfully assuming all respiratory care activities while in hospital. Due to the unknown origin of her paralysis, we connected with the supplier of DP and the Adult Chronic Ventilator Support Program in Calgary to investigate the possibility of using diaphragmatic pacing (DP) for this patient. This procedure is rare in Canada, with only 3 other DP patients in Western Canada. Several meetings later, the medical team decided with the family to proceed with DP. We created clinical tools and resources, simulations, and teaching resources for the family and medical team in preparation. With support both in person and virtually, we have started the process with the hope that she will be able to come off her ventilator support for periods of time during the day. We expect this will be a long process, and we are all learning on the way.

38

Total number of FCC Sessions

56

Family members trained

104

Caregivers and teachers trained

3

Schools/daycares recieved training

OUR COVID-19 SUPPORT

The KidSIM Program provided invaluable support and training within the Alberta Children's Hospital during the Covid-19 pandemic. Simulation played a key role in designing and practicing new protocols in order to adapt to new safety measures and to minimize the risk of cross contamination.

Standardize Processes

Using simulation to coach staff on proper donning and doffing of PPE

Standardizing PPE processes

Identifying and testing a checklist to minimize exposure to staff members inside the room and determine the roles of the staff members outside the room

Reduce Risk of Cross Contamination

Identifying and testing new locations for COVID-19 patient treatment

Identifying and testing the need to declutter resuscitation rooms and hallways

Identifying and testing of new patient drop off location for EMS

Identifying and managing risk factors associated with a variety of specific environments

Optimize Systems

Testing the transfer process of a COVID-19 patient to reduce the possible contamination of the environment, staff, equipment and patients, and to reduce the possible contamination to other departments

Improve Patient Care

Testing new COVID-19 screening processes for families and patients

Identifying and testing patient safety techniques

Lending KidSIM equipment to real patient areas

1619

LEARNERS

The KidSIM Program provided training and COVID-19 support for staff from all areas of ACH.

278

SESSION HOURS

Simulation played a key role in designing and practicing new protocols in order to adapt to new safety measures and to minimize the risk of cross contamination.

255

SESSIONS

The KidSIM Program provided invaluable support and training within the Alberta Children's Hospital during the COVID-19 pandemic.

AREAS SIM SUPPORTED

Calgary Lab Services
Cancer Care/Hematology
Cardiology Clinic
Child Life & Speech Language Clinic
CT
Dental Clinic
Diabetes & Dietician
Diagnostic/Radiology
Emergency Department
Environmental Services
Home Care
Inpatient Units
Mental Health
NICU
Optometry
Orthopedic Clinic
Outpatient Clinics
PACU/OR/Surgical Services
PICU
Porters
Protective Services
Sensory Clinic

"I have had so much positive feedback from the learner groups over the COVID months who have been so grateful to have some hands-on practice and learning in a safe environment. I have seen how these learners have started the simulation seeming more nervous and stressed than ever before, and left feeling more empowered and rewarded than they may have if times were normal"
- RN, Surgical Unit

Simulation has been playing a key role in Covid-19 preparedness across all areas of the Alberta Children's Hospital. The following programs highlight some of the important work that the KidSIM Team has been involved with to improve safety and patient care.

Personal Protective Equipment

Personal Protective Equipment (PPE) was identified as being the main target for all simulations at the start of the COVID-19 pandemic. KidSIM and Safest Together's focus was to target staff in all areas of the hospital who come into contact with patients and train staff to improve PPE adherence. Through simulation training it was discovered that staff were able to prepare better and enter a patient room quicker and safer by creating the role of a PPE Coach. The role of the PPE Coach is to walk staff through the donning and doffing process and double check their PPE has been properly applied before entering a room. Coaches are available any time to answer calls to support staff with the PPE donning and doffing process anywhere in the hospital. Simulation gave staff the opportunity to learn crucial communication skills to ensure that every staff member who entered a room was appropriately dressed and would be safe. In order to conserve essential supplies, the KidSIM Program uses expired masks, gloves, glasses and uses stickers to simulate N95 masks.

Emergency Department

Simulation was used to test a new patient care trauma space for COVID-19 patient treatment and to manage covid positive patients without the wasting of equipment and supplies that may have been contaminated. Simulation was also used to test new COVID-19 screening processes for families and patients coming to the Emergency Department and to trial the flow of patients through the process of initial screening to transferring the patient to the appropriate department (Inpatient, PICU, CT, etc). Simulation training helped standardize procedures for donning and doffing personal protective gear for contact and droplet isolation.

Code Blue Response

New protocols to protect patients and staff during a code blue were trialled, adapted and taught to the bedside health care providers (MD staff and residents, Nursing (RN and LPN), RRT, Social work). Simulation was used on all units to run simulated code blue sessions, testing the uptake of new protocols and how to support and educate staff during a code blue. Simulation highlighted potential risks for cross contamination and test solutions, such as: changing bagger filters to one universal filter, and the need for standardized 'rapid response carts' on every unit. Simulation improved the functionality of these carts and highlighted the importance that carts need to be standardized so that staff on all units can find and access essential equipment quickly and safely.

Resident Code Blue Response

Simulation was used for resident teaching of a code blue situation where staff have to work through COVID-19 precautions and proper PPE. The residents manage a patient who is a code blue until the code team arrives. Simulation is used to work through equipment and safety issues that may happen and practice as a team around situational awareness and communication skills. Testing the new Rapid Response Cart was recognized to be helpful and through these simulations was developed across all the inpatient units including mental health.

NICU Code Blue Response

The NICU has been trialling their new code blue and intubation guidelines; making amendments to these to fit the unit and their patients.

Outpatient Clinics

With 72 outpatient clinics, staff have been trialling how to manage patient load, clinical space, the effect on patient flow, and how to make the overall process of screening and communication between clinics as efficient as possible. Simulation has been used in the outpatient clinics, for booking clerks who carry out screening, to help them communicate information to the rest of the team. When families have to visit more than one clinic during their visit to ACH, Simulation was used to test communication flows to other units. Simulation was utilized in the roll out and trial of a new online family COVID-19 health questionnaire to be filled out prior to arrival at the hospital. Having the ability to show that they had already been screened reduced the wait times for families entering the hospital and allowed for the smooth transition of patients to other clinics during their visit to ACH, all while maintaining the safety of families, patients and staff.

Adult Patients

To prepare for a potential surge in adult ICU patient admissions, the PICU at the Alberta Children's Hospital has been preparing for the possibility of caring for adult patients. Simulation was used for staff to become familiar with different equipment used for adult patients, such as lifts and different beds.

Mobile Education

The KidSIM Mobile Education Lead reached out to our mobile sites to provide support and education for Covid-19 and pediatric management and treatment. A newsletter was created to provide ongoing up-to-date information.

OUR ANNUAL SUMMARY

1423

SESSION HOURS

Due to the COVID-19 pandemic, KidSIM's total hours were down from previous years.

94%

TEAM TRAINING

Team training continues to be a main priority for the KidSIM Program.

475

SESSIONS

In 2020 there was an emphasis on COVID-19 preparedness simulation support.

35%

CAPACITY

The KidSIM Center continues to maximize center usage by booking the space during off-peak hours in the evenings and weekends.

3248

LEARNERS

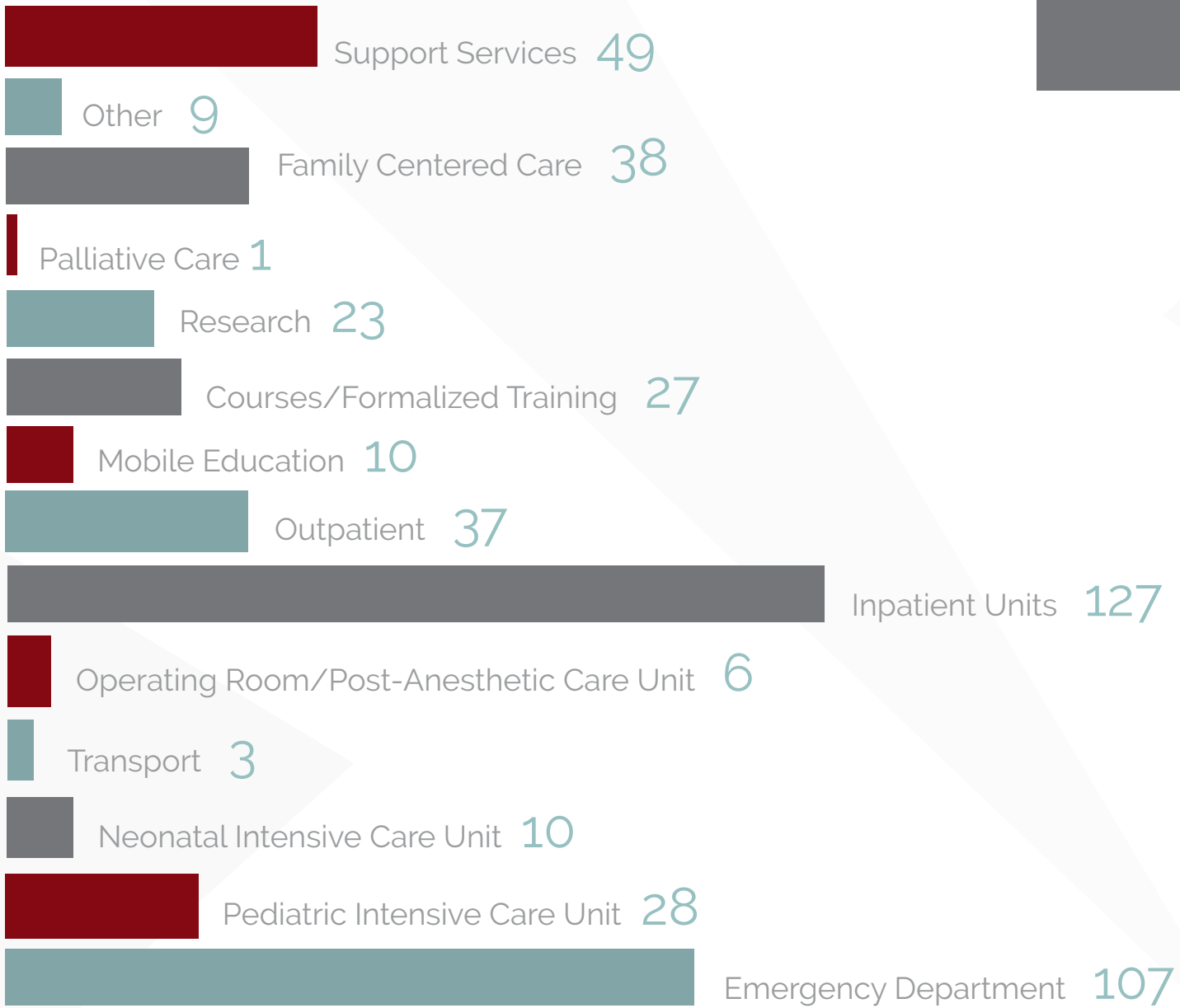
The KidSIM Program continued to support learners form different programs and institutions.

52%

INTERPROFESSIONAL

The KidSIM Program maintains a steady, yet impressive interprofessional rate.

2020 SESSIONS



OUR FELLOWS

The KidSIM Pediatric Simulation Program offers a Fellowship in Simulation Education and Research. This Fellowship is offered in collaboration with the Medical Education Specialization Program at the University of Calgary. The overall aim of this fellowship is to prepare the candidate for an academic career as a simulation educator, with advanced knowledge and skills in the delivery of simulation-based education and research. KidSIM trained 3 fellows in 2020: Geneviève Gravel, Emergency Medicine, Laval University; Tyson Savage, Emergency Medicine, University of Calgary; and Rob Carey, Emergency Medicine, University of Saskatchewan.

Educators from the University of Calgary have developed a longitudinal simulation-based education and research curriculum for fellows from across the various simulation fellowship programs associated with the University of Calgary. It is hoped that this curriculum will provide an opportunity for fellows to collaborate and work with a broad array of simulation-based educators and researchers in Calgary. The program aims to foster a solid grounding in the theory and practice of simulation via interactive teaching on various elements of simulation in education, research, and integration into systems, quality and patient safety programs. The KidSIM Program was involved in the planning and launch of this curriculum and several KidSIM Faculty are instructors.

KIDSIM FELLOWSHIP OBJECTIVES

1. Demonstrate knowledge of concepts in adult learning theory, experimental design, evaluation, and computer applications in simulation-based education.
2. Participate in the development of innovative simulation-based teaching strategies for all levels of learning: undergraduate and postgraduate trainees, as well as continuing education for healthcare providers.
3. Participate in the delivery of interprofessional education by an interprofessional teaching team.
4. Demonstrate knowledge of key issues in simulation-based education relevant to both the simulation learner and the simulation educator.
5. Initiate, design, conduct, present and or publish a simulation-based research project with the mentorship of the KidSIM-ASPIRE research program leaders.
6. Participate in the structured KidSIM Simulation Fellowship curriculum and other educational opportunities (ie outreach simulation, rounds).
7. Demonstrate a commitment to medical education by considering enrollment in a graduate degree program in education (Masters or PhD).

JOURNAL CLUB

KidSIM Fellows and Graduate Students participate in a regular monthly journal club, which serves three main purposes:

1. To review the latest evidence and best practices in simulation; and
2. For the trainees to be exposed to the various methods of conducting simulation-based research; and
3. To provide the trainees further experience in formal presentation skills.

LECTURE SERIES

The KidSIM Fellowship Program offers a monthly lecture series inviting different experts in the simualtion and debriefing community to present on a highlighted topic each month. In the 2020-21 fellowship academic year, the following guest lecturers presented:

- Kristin Fraser - Cognitive Load and Emotion in Simulation
- Stuart Rose - Clinical Debriefing
- Mirette Dube - Patient Safety and Systems Integration
- Marcia Clark, Mersime Berkolli, Dary Michalchul - Curriculum Design and Program Evaluation

ROUNDS

As the KidSIM program continues to grow, program leadership recognized the need to provide on-going simulation-based professional development opportunities for all facilitators. As of the Spring of 2016, KidSIM has introduced monthly KidSIM Rounds. These hour long sessions are open to anyone who teaches in the program and includes a variety of both practical and academic topics.

OUR ELECTIVES

The KidSIM program developed an elective rotation for residents and fellows with an interest in developing skills and experience in simulation-based education. In 2020, 3 residents completed the elective rotation.

FOUR MAJOR COMPONENTS

SIMULATION PROGRAM OPERATIONS

Residents will demonstrate an understanding of the basic planning, organization and operation of a simulation center. Residents will also understand the value of experiential learning in adult education and how simulation is an ideal tool for that type of learning. Residents will also demonstrate an understanding of the different simulation equipment available.

SIMULATOR TECHNICAL SKILLS

Residents will demonstrate the basic use of the simulation equipment and software being used in the KidSIM Program. Residents will also demonstrate how to facilitate a scenario for learners.

DEBRIEFING SKILLS

Residents will demonstrate how to run an effective debriefing session following a simulation scenario. Most of the time in the rotation will be spent practicing and consolidating these skills. Residents are encouraged to get involved in as many sessions as possible, and to take advantage of this practice in the presence of an experienced facilitator.

SCENARIO DEVELOPMENT

Residents will demonstrate an understanding of the aspects and development of an objective-based scenario, including relevant roles, props and audiovisual aides.

OUR FACULTY DEVELOPMENT

The ASSET (Advanced Skills for Simulation Educators and Teachers) program introduces participants to all of the concepts of simulation, as well as provides practical experience in the delivery of simulation-based education. Courses consist of learners from various healthcare provider backgrounds, including medicine, nursing, respiratory therapy, among other healthcare professionals. In 2020, KidSIM redeveloped ASSET courses to a virtual format in order to continue to provide valuable simulation and debriefing education and training during the COVID-19 pandemic.

ASSET FOUNDATIONS

Foundation of Simulation Education and Debriefing

ASSET Foundations is a two-day course that provides a broad overview of core simulation concepts and principles to novice and intermediate simulation educators. By the end of the course, the participants will be able to design and run their own simulation, and feel comfortable facilitating the debriefing session that follows. KidSIM also offers a one day ASSET Foundations Refresher course for those who have already taken Foundations and require an overview of core simulation concepts and principles.

ASSET CO-DEBRIEFING

Strategies for Effective Co-Debriefing

ASSET Co-Debriefing is a one-day course for intermediate simulation instructors who have experience with running simulation with another colleague and the difficulties that arise from doing this. By the end of the course the participants will learn techniques to address these challenges and skills to effectively run scenarios and debrief with colleagues.

ASSET FAMILY

Strategies to Integrate Simulation Education into Discharge Teaching

ASSET Family is a one-day course for anyone involved in patient and family education or discharge teaching. By the end of the course the participants will learn specific strategies to design, deliver, and debrief simulation scenarios targeted specifically to patients and families.

ASSET ADVANCED

Advanced Toolbox for Difficult Debriefing Situations

ASSET Advanced is a one-day course for intermediate simulation instructors (ideally with at least 12 months of simulation and debriefing experience) designed to provide advanced debriefing skills and techniques. Participants will be introduced to common debriefing challenges and pitfalls, including some important ways to avoid them. Participants will also be introduced to an advanced toolbox of debriefing skills designed to help overcome difficult debriefing situations. Videos of simulation scenarios will be used as the basis for discussion, debriefing practice and feedback.

ASSET PEER COACHING

Strategies for Providing Effective Feedback to Peers and Colleagues

ASSET Peer Coaching is a one-day course for intermediate simulation instructors who have experience running simulations with another colleague. Participants will explore how to provide effective feedback to peers and colleagues in a way that is non-threatening and how to seek constructive feedback from colleagues to identify learning gaps in their own practice. By the end of the course the participants will learn techniques to define and describe the benefits of peer coaching; highlight strategies for creating a culture for peer coaching; describe elements of pre-briefing, scenario execution and debriefing performance that can be explored when coaching peers; and apply tools designed to help with peer coaching.

55 Total number of formally trained Simulation Facilitators

23 ASSET Foundations (newly trained facilitators)

11 ASSET Co-Debriefing (advanced training for facilitators)

17 ASSET Advanced (advanced training for facilitators)

4 ASSET Peer Coaching (advanced training for facilitators)

95% Overall KidSIM Facilitator Retention from previous year

OUR VISITING PROFESSORS

CARA DOUGHTY, MD

Dr. Cara Doughty is Associate Fellowship Director and Director of the Pediatric Resident Rotation in the Emergency Department at Texas Children's Hospital. Her research interests lie in developing the use of medical simulation in the ED, including in-situ simulation, procedural workshops, and outreach to pre-hospital providers. In addition, she has developed an educational curriculum (GEMS) for general pediatricians working in the emergency setting, which has led to general pediatricians taking on increasingly advanced roles in the department. She continues her work on treatment of sickle cell patients in the emergency department. Dr. Cara Doughty and Royanne Lichliter gave a presentation on quality improvement and simulation.

ROYANNE LICHLITER, MSN, RN, CPN

Royanne Lichliter, Assistant Director of Quality Education and Simulation at Texas Children's Hospital, has been part of the healthcare arena for over 16 years. She received her Bachelor of Science in Nursing from Mesa State College, and her Masters of Science in Nursing Leadership from Western Governors University. Royanne has been actively involved in quality improvement and simulation with a focus in complex care, and has gained over 12 years of leadership experience. Royanne Lichliter and Dr. Cara Doughty gave a presentation on quality improvement and simulation.

OUR CURRICULUM OPPORTUNITIES

PACE PROGRAM

www.pace4kids.org
pace@kidsim.ca

PACE is Pediatric Acute Care Education for health care providers. The PACE Program provides hands-on teaching for emergency physicians, pediatricians, family physicians, NPs, nurses and allied healthcare professionals using the latest evidence-based medicine practice. The PACE courses all have a simulation component and take place at the KidSIM Center. Learners receive hands-on training in an as real as possible scenario using high-fidelity patients. In 2020, KidSIM redeveloped the PALS Provider course to a hybrid virtual / in-person format in order to continue to provide valuable education and training, while minimizing the amount of time trainees needed to come onsite during the COVID-19 pandemic.

The PACE Program offers the following courses:

- Pediatric Advanced Life Support (PALS) Provider
- Pediatric Advanced Life Support (PALS) Provider Hybrid
- Pediatric Advance Life Support (PALS)Renewal
- The Pediatric Airway Course (TPAC)
- Basic Cardiac Life Support (BCLS)
- Pediatric Emergency Assessment, Recognition, and Stabilization (PEARS) Provider Course
- Neonatal Resuscitation Program (NRP) Course
- Emergency Nursing Pediatric Course (ENPC)
- Trauma Nurse Core Course (TNCC)

DEBRIEF 2 LEARN

www.debrief2learn.org

Effective feedback and debriefing play a critical role in healthcare education in both simulated and workplace-based environments. Developed by KidSIM leadership in collaboration with global experts in simulation, Debrief2Learn supports clinical educators by sharing resources to guide faculty development and exploring the latest innovations. We aim to create an online community of practice for health professions educators while advancing knowledge through cutting-edge collaborative research.

OUR KIDSIM-ASPIRE PROGRAM

The KidSIM-ASPIRE (Assessing Simulation in Pediatrics: Improving Resuscitation Events) Simulation Research Program at Alberta Children's Hospital was established to bring together an interprofessional group of Alberta-based leaders in clinical care, research methodology, education, human factors and psychology interested in improving the delivery of healthcare to sick infants and children. Our team has developed a solid foundation which positions us well to address the main objectives of the acute and life-saving care pillar of ACH. Studies are formulated to identify novel and innovative methods of healthcare delivery in order to improve effectiveness and efficiency of care. In our collaborative research model, we also aim to facilitate the academic growth of young investigators and trainees by exposing them to established mentors both locally and worldwide and nurturing the skills necessary to become successful researchers. After completion of several successful large-scale studies that have provided significant results and insight into acute care, KidSIM-ASPIRE is committed to translating the knowledge gained by the research findings. National pediatric emergency and pre-hospital care conferences, annual nursing education sessions, local nursing conferences, and several simulation conferences are venues where the research team has presented findings. Perhaps most importantly, these presentations focused on how recent findings need to be applied to improve provider education and patient care.

PROGRAM GOAL

The goal of the program is to conduct innovative, high-quality, simulation-based research to inform healthcare providers, administrators and families of best practices, which will optimize pediatric patient outcomes from illness. As lifesaving treatment in pediatric patients involves effective interprofessional care, we strive to conduct single and multicenter studies which involve various professions (nursing, respiratory therapy, paramedics, physicians etc) in order to optimize the impact of our research on patients.

RESEARCH PILLARS

CPR AND CARDIAC ARREST

Develop, assess and implement novel techniques for improving CPR and care of pediatric patients suffering from cardiac arrest.

FAMILY CENTERED CARE

Design and evaluate unique simulation-based training opportunities for families of pediatric patients to help enhance the care they provide to their children in the home environment.

TECHNOLOGY IN THE RESUSCITATION ROOM

Develop and study new technology designed to interact with healthcare providers in the resuscitation environment to improve process of care and patient outcomes.

TEAM TRAINING

Develop, assess and implement innovative techniques for team training in order to improve life-saving care for pediatric patients.

DEBRIEFING AND FEEDBACK

Evaluate existing and new methods of post-simulation and post-resuscitation debriefing for the purposes of improving healthcare provider performance and patient outcomes.

INTERPROFESSIONAL EDUCATION

Assess and evaluate the impact of various models of interprofessional training on healthcare provider skills, knowledge and behaviors.

OUR KIDSIM-ASPIRE TEAM

Dr. Adam Cheng
Director, Research
KidSIM-ASPIRE

Dr. Vincent Grant
Medical Director,
eSIM

Dr. Gavin Burgess
Assistant Medical
Director, KidSIM

Dr. Kerri Landry
Medical Director,
KidSIM

Jeffrey Lin
Post Doc Associate,
KidSIM-ASPIRE

Jennifer Davidson
Research Coordinator,
KidSIM-ASPIRE

Nicola Peiris
Team Lead, KidSIM

Brandi Wan
Research Assistant,
KidSIM-ASPIRE

Jennifer Chatfield
Research Coordinator,
KidSIM-ASPIRE

Helen Catena
Simulation Education
Consultant, KidSIM

Amy Cripps
Simulation Education
Consultant, KidSIM

Keely Piscopo
Administrative Assistant,
KidSIM-ASPIRE

Kerrianne Craig
Simulation Aide,
KidSIM-ASPIRE

Viktoriya Lambert
Research Assistant,
KidSIM-ASPIRE

Geneviève Gravel,
KidSIM Fellow

Tyson Savage
KidSIM Fellow

Rob Carey
KidSIM Fellow

Omar Damji
Emergency Medicine
Physician, ACH

Wendy Bissett
Research Educator,
ACH

Kent Hecker
Researcher,
University of Calgary

Sherry MacGillivray
Trauma Coordinator,
ACH

Dr. Steve Lopushinsky
Pediatric General Surgeon,
ACH

Dr. Glenda Bendiak
Pediatric Respirology
Physician, ACH

Tanya Spence
Research Educator,
ACH

Dr. Ian Wishart
Emergency Medicine
Physician, FMC

Alyshah Kaba
Provincial Scientific Lead,
eSIM, PI & IHOT

Tom O'Neill
Psychologist,
University of Calgary

30 Publications

2 Research Awards

4 Books / Book Chapters

3 Internal Grants

3 External Grants

18 Presentations

2 Abstracts

OUR GRANTS

INTERNAL GRANTS		
2021 – 2023	$25,000 CAD	Project Title: Postdoctoral Scholarship. Funded By: Cumming School of Medicine. Project Involvement: Yiqun Lin, Postdoctoral Associate
2021 – 2022	$12,500 CAD	Project Title: Postdoctoral Fellowship Award. Funded By: Alberta Children's Hospital Research Institute. Project Involvement: Yiqun Lin, Postdoctoral Associate
2021 – 2022	$3,000 CAD	Project Title: VITAL – Virtual Reality for Intubation Training as a Lifesaving Measure. Funded By: Alberta Children's Hospital Research Institute - ACHRI Trainee Small Research Grant. Project Involvement: Omar Damji, Co-Investigator

EXTERNAL GRANTS		
2021 – 2023	$248,625 CAD	Project Title: Impact of Aerosol Box Use on Patterns of Contamination Healthcare Provider and Environmental Contamination during Aerosol Generating Medical Procedures: A Multicenter Study. Funded By: Canadian Institutes of Health Research – Project Grant, COVID-19 Initiative. Project Involvement: Adam Cheng, Principal Investigator
2021 – 2023	$30,000 USD	Project Title: Impact of Aerosol Box Use on Patterns of Contamination Healthcare Provider and Environmental Contamination during Aerosol Generating Medical Procedures: A Multicenter Study. Funded By: International Network for Simulation-based Pediatric Innovation, Research and Education. Project Involvement: Adam Cheng, Principal Investigator
2021 – 2023	$10,000 USD	Project Title: Patterns of Inattentional Blindness during Cardiac Arrest Care: Do Healthcare Providers See and Correct Critical Errors? Funded By: International Network for Simulation-based Pediatric Innovation, Research and Education Project Involvement: Adam Cheng, Senior Investigator; Yiqun Lin, Principal Investigator

OUR INTERNATIONAL PROGRAM

MISSION

To improve the quality of healthcare provided to infants and children around the world by collaborating with global partners through education, research and innovation using simulation.

PRIMARY STRATEGIES

INTERPROFESSIONAL EDUCATION

KidSIM has a wealth of experience in the provision of interprofessional simulation-based education, where healthcare providers from various professions train together in a collaborative work environment. Training in this type of environment using simulation helps to improve collective knowledge and skills, teamwork, communication and efficiency, which ultimately improve the care delivered to real patients.

RESEARCH

As one of the most successful simulation research programs in North America, KidSIM-ASPIRE will conduct research to study the impact of the education and innovation being delivered through KidSIM international programs, and also work hard to share and integrate knowledge acquired from existing research to global partners.

ASSESSMENT & EVALUATION

Assess and evaluate the impact of various models of interprofessional training on healthcare provider skills, knowledge and behaviors.

SIMULATION EXPERTISE & PROGRAM BUILDING

KidSIM has been the 'model' program in North America for growth based on little operational funding while keeping the education 'free' for the learners. Our experience in collaboration, identifying and grooming champions and growth based on limited resource will be a valuable asset to developing programs.

FACULTY DEVELOPMENT

As some educational techniques in simulation are more effective than others, our team have worked hard disseminate this knowledge to simulation educators locally and internationally by creating an instructor training course called ASSET.

FELLOWSHIP TRAINING

We train fellows to be future global leaders in simulation, who will take the knowledge, skills and experience from KidSIM fellowship back to their respective countries in order to save lives and improve outcomes of children in their area of the world.


Medical Face Shield
Medical Face Shield


Medical Face Shield

OUR PROJECTS

Patterns of Contamination from Aerosol Generating Medical Procedures (AGMP)

Dr. Adam Cheng, Dr. Arielle Levy, Dr. Jonathan Pirie, Dr. Todd Chang, Dr. Jeffrey Lin, Jennifer Davidson

This study involves a prospective, randomized controlled trial at four INSPIRE network sites (Alberta Children's Hospital, Ste. Justine Hospital, and Children's Hospital of Los Angeles and The Hospital for Sick Children). The primary aim of this study is to evaluate the effectiveness of an aerosol box - a hard sided plexiglass box that fits over the torso of a patient to act as a physical barrier that contains infectious droplets. Aerosol box use will be compared with no aerosol box use for reducing Health Care Provider (HCP) and environmental contamination during performance of AGMPs. These airway procedures will be carried out by a trained airway team during care of a simulated patients in respiratory failure due to COVID-19. The secondary aim is to determine if aerosol box use influences the time to successful completion and first-pass success rate for ETI and LMA insertion in trained airway teams. We aim to describe patterns of HCP and environmental contamination caused by AGMPs during the care of a simulated patient in respiratory failure due to COVID-19. Other secondary aims are: (a) to compare provider workload during AGMPs in aerosol box vs. no aerosol box groups; (b) to compare quality of intubation performance in aerosol box vs. no aerosol box groups; and (c) describe the pros and cons of aerosol box use during AGMPs. This study is funded by the Canadian Institutes of Health Research (CIHR) and the International Network for Simulation-based Pediatric Innovation, Research, & Education (INSPIRE).

Patterns of Inattentional Blindness during Cardiac Arrest Care: Do Healthcare Providers See and Correct Critical Errors?

Dr. Adam Cheng, Dr. Vince Grant, Dr. Jeffrey Lin, Dr. Elaine Gilfoyle, Tyler Williamson, Jeff Caird

Each year, more than 15,000 infants and children in Canada and the United States receive cardiopulmonary resuscitation (CPR) as a treatment of cardiac arrest. Survival rates from pediatric cardiac arrest are very poor. Providing effective care involves effective team function, dynamic leadership and situational awareness amongst all team members. In order to improve the quality of care provided to cardiac arrest patients, it is imperative to have a better understanding of the types of errors that are missed during cardiac arrest. Inattentional blindness is a phenomenon defined as the failure to see things that are in plain sight on account of being unexpected. The notion of inattentional blindness has been largely unexplored in healthcare, and specifically, in the context of resuscitation. In our study we propose to describe patterns of inattentional blindness by identifying the types of mistakes that are missed by team leaders and members during cardiac arrest. This study is funded by the Laerdal Foundation for Acute Medicine, the Department of Pediatrics Innovation Award (University of Calgary), the Cumming School of Medicine Bridge Grant, and a Seed Grant from the University of Calgary.

The KidSIM MODEL (Maintenance of Debriefing Skills for Enhanced Learning Program: A Pilot Project

Jenny Chatfield, Dr. Adam Cheng, Dr. Vince Grant, Dr. Jeffrey Lin

Simulation based medical education (SBME) has become a well-established and integral component of various specialty and subspecialty training programs across North America. Recent studies demonstrate that lessons learnt via SBME positively impact learners' knowledge and skills, translate to real changes in their daily practice and ultimately improve patient outcomes. Furthermore, where positive patient outcomes are associated with reductions in complications, the cost saving gained by avoidance of the complications can be shown to pay for the SBME program several times over. The MODEL program will serve as an important faculty development resource for simulation programs to help ensure debriefing during simulation-based education is delivered at a consistently high standard across educators and curricula. By showing the effectiveness of the MODEL program, we will provide the international simulation community with an innovative program model for faculty development, which can be utilized to enhance debriefing skills, and subsequently have a positive impact on learner's knowledge, skills and behaviors.

Improving Cardiac Arrest Outcomes with Resuscitation Research (iCORE): Exploring the Role of Data-Informed Debriefing, Digital Charting, and Situational Awareness

Dr. Adam Cheng, Dr. Elaine Gilfoyle, Dr. Vincent Grant, Dr. Jeffrey Lin, Jennifer Davidson

Debriefing has been shown to improved provider performance, while CPR data-informed debriefings have been associated with a near-doubling of the survival rate from cardiac arrest in one single-center study. Unfortunately, CPR data is rarely used during debriefing at most institutions, causing providers to consistently overestimate the quality of CPR delivered during care. Part of the issue is lack of reliable data. Paper charting of resuscitation events is highly inaccurate, thus leading to unreliable data (that serve as stimulus for discussion during debriefing) for key variables known to influence survival from cardiac arrest (eg. time to epinephrine administration, defibrillation, and/or initiation of CPR). Recently, digital charting in the form of a handheld tablet device offers a novel alternative to paper charting during resuscitation. Furthermore, new CPR feedback defibrillators collect quantitative CPR data that can be used during debriefing. The combination of quantitative data from a digital chart and the CPR feedback defibrillator has the potential to enhance the quality and impact of debriefings after cardiac arrest. In this study, we will assess the impact of using quantitative data collected from a digital chart and CPR defibrillator during post-event debriefings. This study is funded by the Alberta Children's Hospital Foundation.

Improving Quality of CPR with Distributed Practice and Real-time Feedback in Pediatric Healthcare Providers – A Randomized Trial and Cost-effectiveness Analysis

Dr. Jeffrey Lin, Dr. Adam Cheng, Dr. Vincent Grant, Dr. Gillian Currie and Dr. Kent Hecker

Current CPR training (i.e. BLS recertification course) does not utilize a competency-based approach, resulting in poor short and long term retention of CPR skills. The goal of this project was to assess the efficacy and cost effectiveness of a new CPR training method (distributed CPR training with real-time feedback in the workplace). We demonstrated that in pediatric healthcare providers, distributed CPR training with real-time feedback results in improved long term retention of CPR and increased cost effectiveness compared to annual CPR recertification. Our results have informed changes to 2020 International Resuscitation Guidelines, and informed the design of courses offered by the American Heart Association and the Heart and Stroke Foundation of Canada. This project was funded by Laerdal Foundation for Acute Medicine, Royal College Medical Education Research Grant and Department of Pediatrics Innovation Award (University of Calgary).

Measuring the Cognitive Load of Expert and Novice Facilitators During the Debriefing Phase of a Clinical Simulation.

Dr. Jolene Haws, Dr. Vincent Grant, Dr. Alejandra Boscan, Dr. Jeffrey Lin, Dr. Adam Cheng.

Facilitating a simulation debrief is a complex, dynamic skill that places significant demand on facilitators' working memory. Cognitive load theory proposes that our working memories have a finite ability to process information. When the cognitive load of the task is high our working memory may be overwhelmed, and as a result, performance on the task suffers. The objective of the study is to measure the cognitive load of facilitators during the debriefing phase of a clinical simulation. We aim to identify whether cognitive load differs between novice and expert facilitators, and between different key events during the debriefing process. We will subsequently create faculty development tools to reduce the cognitive load of facilitators and ultimately improve the quality of education delivered to learners in simulation debriefing. This project is funded by an Office of Health and Medical Education Scholarship (OHMES) Health Science Medical Education Research and Innovation Grant.

Every minute counts: Uncovering and mitigating delays in Maternal Cardiac Arrest First Response

Dr. Fatemah Qasem, Dr. Jeffery Lin, Mirette Dube, Dr. Christopher Dyte, Dr. Adam Cheng

Maternal cardiac arrest is underreported and continues to occur at rate of 1:20,000 pregnancies. During these critical events aggressive maneuvers

and multidisciplinary team efforts are required because of the anatomical and physiological changes associated with pregnancy, in addition to taking care of two patients. Advanced cardiac life support (ACLS) must be rapidly administered. Previous work suggests deficits in cardiac arrest care during maternal cardiac arrest. The primary goal of this study is to characterize the quality of actions by first responders during simulated in-hospital maternal medical emergencies. Secondary goal is to determine the systems issues that contribute to a delayed response and initiation of ACLS. Specific objectives are: (1) To examine critical delays by measuring the median duration of the interval between when a resuscitation maneuver was indicated and when it was initiated by first responders; (2) To describe the type and frequency of resuscitation errors identified as deviations from AHA guidelines during obstetric cardiac arrest. By addressing this gap in the literature, we hope to highlight areas of future education and/or innovation aimed at improving performance during maternal cardiac arrest care; 3.) The uncover systems issues reported that contribute to a delay in performing ACLS and/or reduced quality and safety of care.

Can You RELATE? Navigating Difficult Conversations and Building Trust with Parents in the Pediatric Hospital Setting: A Workshop and Simulation-Based Curriculum for Health Care Providers.

Dr. Suzette Cooke, Dr. Chantelle Barnard, Dr. Amonpreet Sandhu, Dr. Vincent Grant, Helen Catena

RELATE is a tool for healthcare professionals to use to navigate difficult and challenging situations with parents and caregivers of children in hospital. A full day workshop was created to help healthcare workers be trained and provide them with the opportunity to practice some of these challenging scenarios. The curriculum in the morning consisted of developing an understanding of how communication breakdowns occur and the results of this as well as the strategies and tools used to navigate these situations. The interprofessional participants engaged a variety of simulations with professional actors serving in the role of parents and caregivers to either navigate the situation or to be an observer of the situation. These scenarios are commonly encountered and have the potential to cause deterioration or destruction of trust, garner trust or rebuild trust. After each simulation the participants and the observers were debriefed allowing self-reflection and insight from the 'parent' on how the conversation went and what went well and what could have been improved. Preliminary analysis of the data demonstrated that participants who received this curriculum displayed significant improvements pre/post in their ability to navigate these difficult situations. Participants reported the "relate" curriculum increased their confidence in approaching these scenarios and also in their ability to cope. Participants also reported that they enjoyed trying different techniques in a safe learning situation while engaging realistic scenarios and receiving individual feedback. A session was held in September 2020 for 24 University of Calgary pediatric residents. The goal is to also teach pediatric residents at the University of Alberta to ensure all residents will have taken this course in Alberta. Currently courses have been on hold due to the COVID-19 pandemic. The next course is scheduled for October 2021, with the bigger plan to run 4 per year at ACH to encourage all professions to take this course and provide them with skills to manage difficult conversations. This study was funded by a grant from the section of hospital pediatrics.

Health Advocacy in Medical Education: The Opportunity is NOW

Dr. Stephen Mintsioulis, Dr. Aliya Kassam, Dr. Ghazwan Altabbaa, Dr. Ryan Iwasiw, Dr. Jeffrey Lin

The Health Advocate (HA) role is central to responsive, safe, and timely actions by physicians to address the needs of the patients and communities they serve. Regrettably, the HA role is considered among the least relevant to clinical practice by both educators and learners and is among the most challenging to teach and assess. Competing priorities and pressure on the available time for formal teaching hinders potential interventions, while learners feel their educational needs are not being met. Thus, residency programs require assistance to evolve their approach to teaching the HA role at a time when the need for strong physician advocacy skills is rising. There is no clear consensus on how the HA role should be taught and assessed. The overall aim of this study is to develop, deploy, and evaluate a simulation

curriculum that addresses existing gaps in HA education. Specifically, we look to implement a powerful teaching technique and apply a strategic design of HA content. The main goals of the proposed study are to: (1) shift learners' mindset in how HA opportunities unfold on daily basis in healthcare practice; and (2) train residents to use effective HA tools within, and beyond, the clinical environment. We hypothesize that through the introduction of a unique simulation curriculum designed to teach HA knowledge and strategies, physicians will improve their confidence and awareness to navigate through hidden opportunities to become better health advocates for their patients.

Exploring Debriefer Approaches to Difficult Debriefing through Eye Tracking Analysis

Dr. Ryan Wilkie, Dr. Jeffrey Yin, Dr. Amanda Lee Roze des Ordons, Dr. Adam Cheng, Dr. Vince Grant

The goal is to explore eye gaze patterns during difficult debriefing with confrontational and emotional learners. Secondarily, we aim to develop an evidence base for the use of eye tracking technology as a research tool in simulation debriefing. Data gathering is complete and video review and data analysis is underway. The project was presented at the 2020 INSPIRE Annual Research Meeting at IMSH in San Diego, California.

Optimizing Personal Protective Equipment (PPE) Donning and Doffing Training with Objective Feedback

Dr. Genevieve Gravel, Dr. Adam Cheng, Dr. Jeffrey Lin, Jennifer Davidson

Appropriate PPE (personal protective equipment) is essential for healthcare providers (HCP) and patient safety. Actual reported rate of self-contamination of HCP high between 24 and 46%. The current PPE training strategy is limited by lack of individualized, outcome-oriented and objective feedback. The goal of this project is to evaluate a new PPE donning/doffing training using simulation training as well as objective feedback with simulated contamination particles (fluorescent tracer) and compare its effectiveness with conventional PPE training methods. We believe this new training will help prevent HCPs contamination while donning and doffing PPE.

Who is the Leader? What are the observed leadership characteristics of a CPR Coach and Team Leader during a Cardiac Arrest Resuscitation

Dr. Tyson Savage, Dr. Genevieve Gravel, Dr. Adam Cheng, Dr. Jeffrey Lin, Jennifer Davidson

Previous work has demonstrated that the addition of a CPR Coach to simulated pediatric cardiac arrest team enhances CPR metrics associated with improved survival outcomes. What we do not know is how the addition of a CPR Coach to the resuscitation team impacts the overall team leadership and crisis resource management. Our study aims to better describe what leadership and crisis resource management qualities are demonstrated by the CPR Coach in comparison to the Team Leader. This will be done through use of the Behavioural Assessment Tool, a previously validated tool to assess crisis resource management skills and leadership performance. Our findings will provide important insight on how to optimize the integration of the CPR Coach role into the resuscitation team structure.

In-situ Simulation Guidelines

Dr. Rob Carey, Dr. Aaron Calhoun, Dr. Jeffrey Lin

Working with an international team to develop in-situ simulation guidelines through systematic review and an expert panel. These guidelines will provide important insight on how to optimize the integration of the CPR Coach role into the resuscitation team structure.

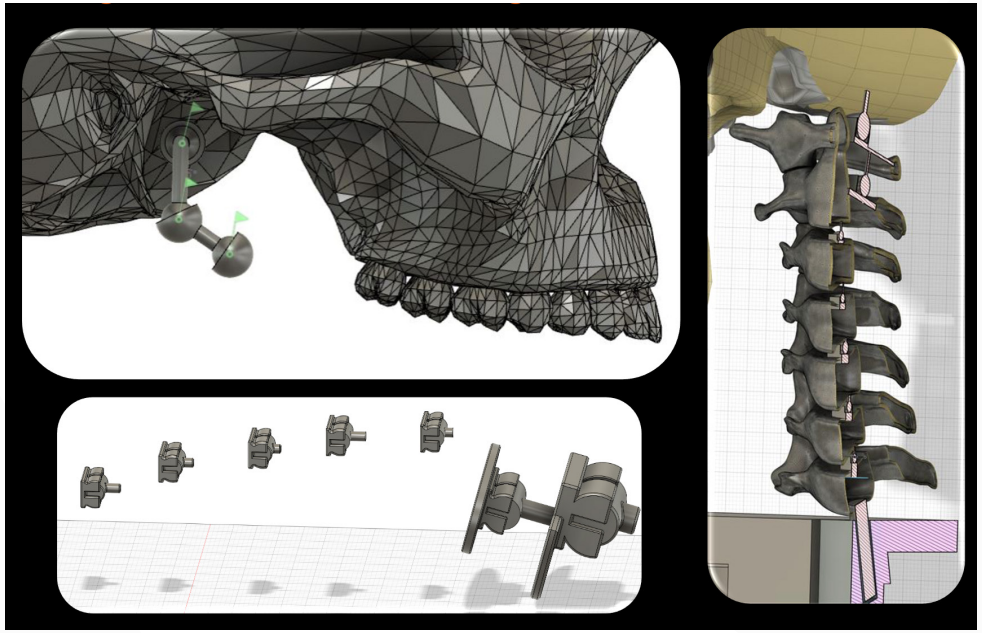
VITAL – Virtual and Augmented Reality for Intubation Training As a Lifesaving Measure

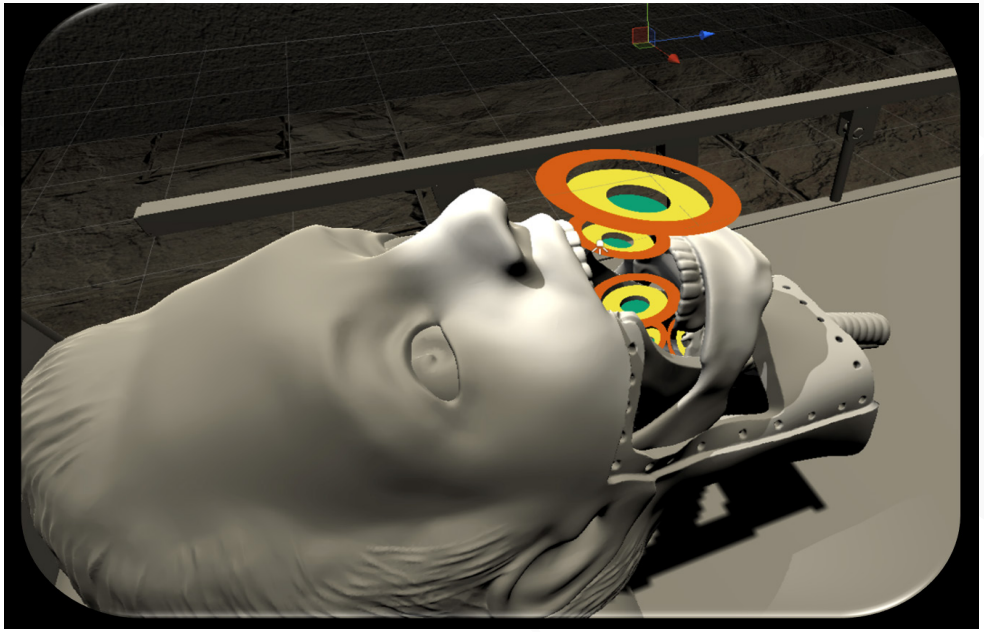
Dr. Omar Damji, Dr. Vincent Grant, Dr. Christian Jacob, Dr. Pina Colarusso

Medical training environments have been forced to change in light of work-hour regulations in residency programs, greatly impacting trainees ability to gain proficiency in procedural skills. Confidence, training environments, and direct comparability of a training unit to clinical practice are key facets needed for proficiency in procedural skill acquisition. Intubation is a critical skill in emergency medicine requiring competency. Simulator based task training (SBTT) has provided a safe and ethically appropriate method of skill acquisition,

but training opportunities remain limited. VITAL XR focused on creating the best simulated learning environment and platform for medical training. Our work bridges a gap between real-world medical challenges and technologies like virtual and augmented reality that can extend the capabilities of critical care training scenarios. This hybrid platform is intended to maximize practice opportunities for medical staff by reinforcing techniques and learning with a safe, simulated, yet realistic approach. Flesh, muscle, and bone feel real because of 3D scanning, printing, and casting in life-like materials. Intubation has become a default event in COVID 19. Intubation is a difficult procedure, and our platform aims to set up training simulations with ultra-realistic physical and digital components using artificial intelligence trained by expert practitioners to achieve deeper learning. Real-time guidance and correction via audio visual aids as well as tactile feedback will provide results driven simulation and practice opportunities.

To date, we are currently in the process of capturing high resolution 16K footage from all 5 hospitals across the city and from every room intubation can happen - the trauma bay, NICU/PICU/ICU, operating room, inpatient ward for code blue scenarios, EMS truck as well as the STARS air ambulance. Our AR development is currently focused on the healthy adult and healthy child; we have begun working with maxillofacial and plastic surgeons interested on congenital facial abnormalities where they have developed a 3D anatomic database of these differences. Development of difficult anatomy as it relates to intubation is currently underway for different virtual overlays, but also new pathologies for printing. A custom built 3D printed adult and pediatric mannequin is currently being sourced where the tissue mechanics, biomechacnis and anatomy will be maintained. We are focused on collecting live intubation data from emergency physicians, intensive care physicians and anesthesiologists to record how they feel is the best way to intubate as well as what common mistakes they see learners make. Lastly, we are hoping to have the software/hardware intubation solution completed by the end of this year such that we can validate it in a non-inferior clinical trial where we compare our tool against high grade cadaveric intubation.





OUR PUBLICATIONS

1. Cheng A, Eppich W, Epps C, Kolbe M, Meguerdichian M, Grant V. Embracing Informed Learner Self-Assessment during Debriefing: The Art of Plus-Delta. Advances in Simulation. Accepted and In Press.
2. Donoghue A, Navarro K, Diederich E, Auerbach M, Cheng A. Deliberate Practice and Mastery Learning in Resuscitation Education: A Scoping Review. Resuscitation Plus. Accepted and In Press.
3. Dube M, Posner G, Stone K, White M, Kaba A, Bajaj K, Cheng A, Grant V, Huang S, Reid J. Building Impactful Systems-Focused Simulations: Integrating Change and Project Management Frameworks into the Pre-Work Phase. Advances in Simulation. Accepted and In Press.
4. Dewan M, Parsons A, Tegtmeyer K, Wenger J, Niles D, Raymond T, Cheng A, Skellett S, Roberts J, Jani P, Nadkarni V, Wolfe H for the Pediatric Resuscitation Quality (pedi-RES-Q) Collaborative Investigators. Contextual Factors Affecting Implementation of In-Hospital Pediatric CPR Quality Improvement Interventions in a Resuscitation Collaborative. Pediatric Quality and Safety. Accepted and In Press.
5. Duff J, Bhanji F, Lin Y, Overly F, Brown L, Bragg A, Kessler D, Tofil N, Bank I, Hunt E, Nadkarni V, Cheng A for the INSPIRE CPR Investigators. Change in CPR Performance Over Time during Simulated Pediatric Cardiac Arrest and the Effect of Just-in-Time Training and Feedback. Pediatric Emergency Care. 2021. 37(3):133-137.
6. Dube, M., Posner, G., Stone, K., et al. Building Impactful Systems-Focused Simulations: integrating change and project management frameworks into the Pre-work phase. Advances in Simulation. April 2021 https://advancesinsimulation.biomedcentral.com/articles/10.1186/s41077-021-00169-x
7. Dubé, M., Laberge, J., Sigalet, E., et al. Evaluations for New Healthcare Environment Commissioning and Operational Decision Making using Simulation and Human Factors: A Case Study of an Interventional Trauma Operating Room. Health Environment Research and Design Journal. March 2021- https://journals.sagepub.com/doi/10.1177/1937586721999668
8. Reece S; et al Dubé, M, Grant. Use of virtually-facilitated simulation to improve COVID-19 preparedness in rural and remote Canada. Clinical Simulation in Nursing. Feb 2021- https://www.nursingsimulation.org/article/S1876-1399(21)00023-2/fulltext
9. Schnaubelt S, Monsieurs KG, Semeraro F, Schlieber J, Cheng A, Bigham BL, Garg R, Finn JC, Greif R. Reply to "ILCOR's First Foray into Low Resource Settings". Resuscitation. 2021; 159:179.
10. Buyck M, Shayan Y, Gravel J, Hunt EA, Cheng A, Levy A. CPR Coaching during Cardiac Arrest Improves Adherence to PALS Guidelines: a Prospective, Simulation-based Trial. Resuscitation Plus. 2021; 5:100058.
11. Ing L, Cheng A, Lin Y. Debriefing for Simulation-based Medical Education: A Survey within an International Network of Simulation Educators. Simulation in Healthcare. Published online January 8, 2021.
12. Eppich, W. J., Hart, D. & Huffman, J. L. Comprehensive Healthcare Simulation: Emergency Medicine. Compr Healthc Simul 33–46 (2021) doi:10.1007/978-3-030-57367-6_4.
13. Santorino D, Dube M, Bajunirwe F, Kyakwera C, Robinson T, Najjuma J, Cherop M, Abesiga L, Namata T, Brenner JL, Singhal N, Twine M, Wishart I, Macintosh H, Cheng A. An Interprofessional, Feasibiliyt of an Interprofessional, Simulation-based Curriculum to Improve Teamwork Skills, Clinical Skills and Knowledge of Undergraduate Medical and Nursing Students in Uganda: A Cohort Study. Simulation in Healthcare. Published online Dec 16, 2020.
14. Dana Stys, MD FRCPC, Kerri Landry, MD MBA FRCPC, Tatum Mitra, MSc, Vincent Grant, MD FRCPC. A provincial assessment of readiness for paediatric emergencies: What are the existing resource gaps in Alberta? Paediatrics & Child Health, Volume 25, Issue 8. December 2020.
15. Kessler D, Grabinski Z, Nadkarni L, Jones S, Lin Y, Duff J, Tofil N, Cheng A for the INSPIRE CPR Investigators. Influence of CPR Coaching on Interruptions in Chest Compressions during Simulated Pediatric Cardiac Arrest. PCCM. Published online Nov 19, 2020.
16. Schnaubelt S, Monsieurs KG, Semeraro F, Schlieber J, Cheng A, Bigham BL, Garg R, Finn JC, Greif R, on behalf of the ILCOR Education, Implementation and Teams Task Force. Clinical Outcomes from Out-of-Hospital Cardiac Arrest in Low-Resource Settings – A Scoping Review. Resuscitation. 2020; 156:137-145.
17. Greif R, Bhanji F, Bigham BL, Bray J, Breckwoldt J, Cheng A, Duff JP et

al on behalf of the Education, Implementation and Teams Collaborators. Education, Implementation and Teams: 2020 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations. Circulation. 2020; 142:S222-S283.

18. Greif R, Bhanji F, Bigham BL, Bray J, Breckwoldt J, Cheng A, Duff JP et al on behalf of the Education, Implementation and Teams Collaborators. Education, Implementation and Teams: 2020 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations. Resuscitation. Published online October 21, 2020. DOI: 10.1016/j.resuscitation.2020.09.014
19. Cheng A, Magid D, Auerbach M, Bhanji F, Bigham B, Blewer A, Dainty K, Diederich E, Lin Y, Leary M, Mahgoub M, Mancini M, Navarro K, Donoghue A. Part 6: Resuscitation Education Science. 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2020; 142:S551-S579.
20. Berg K, Cheng A, Panchal A, Topjian A, Aziz K, Berg K, Bhanji F et al on behalf of the AHA Adult, Pediatric, Neonatal, and Education Writing Groups. Part 7: Systems of Care. 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2020; 142:S580-S604.
21. Magid D, Aziz K, Cheng A, Hazinski M, Hoover A, Mahgoub M, Panchal A, Sasson C, Topjian A, Rodriguez A, Lavonas E. Part 2: Evidence Evaluation and Guidelines Development. 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2020; 142:S358-S365
22. Merchant R, Topjian A, Panchal A, Cheng A, Aziz K, et al. Part 1: Executive Summary. 2020 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Circulation. 2020; 142:S337-S357.
23. Lin Y, Hecker K, Cheng A, Grant V, Currie G. Cost-effectiveness Analysis of Workplace-based Distributed Cardiopulmonary Resuscitation Training versus Conventional Annual Basic Life Support Training. BMJ STEL. Published online September 29, 2020. Doi:10.1136/bmjstel-2020-000709
24. Cheng A, Kolbe M, Grant V, Eller S, Hales R, Symon B, Griswold S, Eppich W. A Practical Guide to Virtual Debriefings: Communities of Inquiry Perspective. Advances in Simulation. 2020. 5:18.
25. Kolbe M., Eppich W., Rudolph J., Meguerdichian M., Catena H., Cripps A., Grant V., Cheng A. Managing psychological safety in debriefings: a dynamic balancing act. BMJ STEL 2020 May;6:164-171.
26. Forristal, Chantal MD, FRCPC; Russell, Evan MD, MSc; McColl, Tamara MD, FRCPC; Petrosoniak, Andrew MD, MSc, (MedEd), FRCPC; Thoma, Brent MD, MSc, FRCPC, DRCPSC; Caners, Kyla MD, FRCPC, DRCPSC; Mastoras, George MD, FRCPC; Szulewski, Adam MD, FRCPC, MHPE, PhD; Chaplin, Timothy MD, FRCPC; Huffman, James MD, FRCPC; Woolfrey, Karen MD, MEd, FRCPC, DABEM; Dakin, Christa MD, FRCPC; Hall, Andrew K. MD, FRCPC, MMEd Simulation in the Continuing Professional Development of Academic Emergency Physicians, Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare: July 15, 2020 - Volume Publish Ahead of Print - Issue - doi: 10.1097/SIH.0000000000000482
27. Forristal, C. et al. Simulation in the Continuing Professional Development of Academic Emergency Physicians: A Canadian National Survey. Simul Healthc J Soc Simul Healthc Publish Ahead of Print, (2020).
28. Santorino D.; Dube, M, et al. Feasibility of an Inter-professional, Simulation-based Curriculum to Improve Teamwork Skills, Clinical Skills and Knowledge of Undergraduate Medical and Nursing Students in Uganda: A Cohort Study. Simulation in Healthcare. Nov (2020).
29. Dubé, M., Kaba, A., Cronin, T. et al. COVID-19 pandemic preparation: using simulation for systems-based learning to prepare the largest healthcare workforce and system in Canada. Adv Simul 5, 22 (2020). https://doi.org/10.1186/s41077-020-00138-w
30. Robinson, T RN, BN; Santorino, D MD; Dube, M MSC; et al. Sim for Life Foundations. A Simulation Educator Training Course to Improve Debriefing Quality in a Low-Resource Setting: A Pilot Study. Simulation in Healthcare: The Journal of the Society for Simulation in Healthcare: July 8, 2020 - Volume Publish Ahead of Print - Issue - doi: 10.1097/SIH.0000000000000445

OUR PRESENTATIONS

1. Diversity, Equity and Inclusion Debriefing Workshop – INSPIRE Network Annual Conference. January 14, 2021. Adam Cheng.
2. Optimizing personal protective equipment (PPE) donning and doffing training with objective feedback ALERT Presentation – INSPIRE Network Annual Conference. January 14, 2021. Genevieve Gravel.
3. 2020 AHA Guidelines on ECC and CPR – MENA Conference (Plenary). American Heart Association Scientific Sessions 2020. December 11, 2020. Adam Cheng.
4. 2020 AHA Guidelines on ECC and CPR – MENA Conference (Expert Panel). Resuscitation Science Symposium 2020. December 19, 2020. Adam Cheng.
5. Back to the Basics: Enhance BLS during Cardiac Arrest (Plenary). Citizen CPR Foundation Annual Conference. December 8, 2020. Adam Cheng.
6. Advanced Simulation Skills for Educators and Teachers, ASSET:PEER COACHING Course – Calgary, AB - December 2020.
7. Advanced Simulation Skills for Educators and Teachers, ASSET:ADVANCED Course – Calgary, AB - November 2019.
8. 2020 AHA Guidelines on ECC and CPR (Plenary). American Heart Association Scientific Sessions 2020. November 16, 2020. Adam Cheng.
9. 2020 AHA Guidelines on ECC and CPR (Expert Panel). Resuscitation Science Symposium 2020. November 16, 2020. Adam Cheng.
10. Virtual Debriefing in the Era of COVID-19. HealthySimulation.com Webinar Series. November 15, 2020. Adam Cheng.
11. The KidSIM Mobile Outreach Education Program. Children's Healthcare Canada Spark: Live series Webinar. Kerri Landry and Jenny Chatfield. 2020.
12. Advanced Simulation Skills for Educators and Teachers, ASSET:CO-DEBRIEFING Course – Calgary, AB - November 2020.
13. Moving the Needle: Simulation to Improve Outcomes from Cardiac Arrest (ACHRI Research Rounds). Alberta Children's Hospital. October 26, 2020. Adam Cheng.
14. 2020 American Heart Association Guidelines Virtual Launch. October 21, 2020. https://www.youtube.com/watch?v=lO4rdC-fKsI Adam Cheng.
15. Advanced Simulation Skills for Educators and Teachers, ASSET:FOUNDATIONS Course – Calgary, AB - October 2020.
16. Virtual Debriefing in the Era of COVID-19. Society for Simulation in Healthcare Virtual Webinar Series. September 15, 2020. Adam Cheng.
17. Moving the Needle: Simulation to Improve Outcomes from Cardiac Arrest (Grand Rounds). Visiting Professor, National Taiwan University Children's Hospital, Taipei, Taiwan. January 10, 2020. Adam Cheng.
18. Developing a Career in Healthcare Simulation (Workshop). Visiting Professor, National Taiwan University Children's Hospital, Taipei, Taiwan. January 10, 2020. Adam Cheng.

OUR ABSTRACTS

1. Roze des Ordons A, Eppich W, Lockyer J, Wilkie R, Grant V, Cheng A. Guide, facilitator, mediator, teacher: A framework for healthcare debriefing. AMEE Annual Conference, Au-gust 27, 2021.
2. Roze des Ordons A, Cheng A, Lockyer J, Wilkie R, Grant V, Eppich W. Mediating conflict in debriefing – struggling, surviving and thriving. International Conference on Residency Education, October 20, 2021.

OUR BOOKS/CHAPTERS

1. Assaad M, Gupta A, Eppich W, Cheng A. Codebriefing for Simulation-based Education. In Soghier L, Robin B. Neonatal Simulation: A Practical Guide. American Academy of Pedi-atrics. 2021, USA
2. Grant VJ., Catena H., Peiris N. Simulation Operations: An Overview. In: Seropian MA, Keeler GR, Naik VN, editors. Comprehensive Healthcare Simulation: Program & Center Development. Cham: Springer; 2020.
3. Gupta A, Assaad M, Cheng A, Eppich W. PEARLS Blended Method Debriefing. In Soghier L, Robin B. Neonatal Simulation: A Practical Guide. American Academy of Pediatrics. 2021, USA
4. Levin H, Cheng A. Curricular Integration and Development. In: Naik V, Seropian M. Com-prehensive Healthcare Simulation: Program and Center Development. Springer International Publishing, Switzerland, 2020.

OUR AWARDS

1. Cheng, A. Researcher of the Year – Society for Simulation in Healthcare, awarded for excellence in simulation-based research and significant impact on the field. Jan 2021.
2. Cheng, A. INSPIRE Research Award – Impact of Aerosol Box Use on Patterns of Contamination during AGMPs. Dec 2020

Researcher of the Year – 2020
The Researcher of the Year Award is awarded to one member who has demonstrated exemplary investigation in the area of healthcare simulation. This year's recipient:

Adam Cheng, MD, FRCPC, FAAP
Director, Research and Development, KidSim-ASPIRE Alberta Children's Hospital Division of Emergency Medicine Calgary, Canada

Dr. Adam Cheng has demonstrated exemplary performance as a simulation researcher and has an international reputation as an independent investigator and major contributor in advancing the field of healthcare simulation.

His research record shows superb quality, quantity, and impact of his published simulation research represented by more than 90 publications. His simulation-based publications in 2018-2020 have been cited 175 times, demonstrating the usefulness to others and high impact of his most recent work.

Dr. Cheng is coauthor of one of 22 papers selected as an Article of Influence for presentation at IMSH 2021 and has been the first or senior author on many significant simulation research publications informing the field. In 2020 alone, Dr. Cheng was first or senior author of seven publications.

He frequently leads and publishes cross-disciplinary, cross-institutional, and cross-national simulation research efforts. His "Reporting guidelines for health care simulation research: Extensions to the CONSORT and STROBE statements" (Simulation in Healthcare, 2016) written with the INSPIRE Network provides a guidepost for other simulation researchers.

Dr. Cheng also is a Fellow in the SSH Academy, serves as a simulation science reviewer through his role as an associate editor of the Society's Simulation in Healthcare journal and provides significant mentorship to trainee researchers engaged in simulation-based studies.

www.KidSIM.ca