

HANNAFORD CENTER FOR SAFETY, INNOVATION & **SIMULATION**

WHERE THE BEST IN HEALTH CARE
GO TO GET **EVEN BETTER**



ANNUAL REPORT 2023

MAINEHEALTH REGIONS

REGIONAL ENTITIES

MAINEHEALTH ACCOUNTABLE
CARE ORGANIZATION

MAINE BEHAVIORAL HEALTHCARE

MAINEHEALTH CARE AT HOME

NORDX

FRANKLIN COMMUNITY
HEALTH NETWORK

MAINEGENERAL HEALTH*

COASTAL HEALTHCARE ALLIANCE

WALDO COUNTY GENERAL HOSPITAL

PEN BAY MEDICAL CENTER

LINCOLNHEALTH

MILES CAMPUS

ST. ANDREWS CAMPUS

ST. MARY'S HEALTH SYSTEM*

MID COAST-PARKVIEW HEALTH

WESTERN MAINE HEALTH

SPRING HARBOR HOSPITAL
(MAINE BEHAVIORAL HEALTHCARE)

NEW ENGLAND REHABILITATION
HOSPITAL OF PORTLAND**

MAINE MEDICAL CENTER

MEMORIAL HOSPITAL

SOUTHERN MAINE HEALTH CARE

SMHC MEDICAL CENTER – BIDDEFORD

SMHC MEDICAL CENTER – SANFORD

*AFFILIATES

**JOINT VENTURE PARTNER

IN THIS ANNUAL REPORT

○ LETTER FROM THE MEDICAL DIRECTORS.....	4-5
○ MEET THE TEAM.....	6-7
○ BY THE NUMBERS.....	8-9
○ PATIENTS.....	10-11
○ PEOPLE.....	12-17
○ POPULATION.....	18-19
○ VALUE.....	20-31
○ COLLABORATIONS.....	32-33
○ BEHIND THE SCENES.....	34-39



LETTER FROM THE MEDICAL DIRECTORS

It's no secret we believe the Hannaford Center for Safety, Innovation & Simulation is the most exciting place within MaineHealth. Situated with one foot in Medical Education and the other in Quality and Safety, our work touches many professions and disciplines. From our vantage point, we observe our learners universally embody the Basic Assumption¹ of simulation — each participant is intelligent, capable, cares about doing their best, and motivated to improve. Our team is energized to witness this level of engagement and motivation each day. In this Annual Report we hope to share this inspiration with you by highlighting some of the new and noteworthy simulation activities from 2023.



As a part of our mission to train health care practitioners, we will feature the launch of Observed Standardized Clinical Exams (OSCEs) using standardized patients to assess competency of medical students at the completion of their core clinical clerkships (page 14). Interdisciplinary partners designed and piloted innovative curricula aimed at improving equitable and inclusive care (page 15). Interprofessional teams from across the network, including pediatrics, adult resuscitation, and obstetrics to name a few, continued to regularly train together to improve teamwork and communication in their areas (page 11).

Our regional program reached a milestone as our in situ neonatal resuscitation training reached all eight birthing hospitals and Maine General Hospital, our affiliate in Augusta. The hospitals participating in MOOSE (Maine Ongoing Outreach Simulation Education) expands to four, sustaining and enhancing the important work from our in-person training (page 19).

This was another successful year for our MOMSim program with four more MaineHealth birthing hospitals participating. Two hospitals participated in a repeat visit, which serves as both a training refresher and opportunity to test improvements (page 18). The dedication and passion of our community care teams for this training has led to the birth of MOMSim 2.0, a telesimulation program we hope will demonstrate similar success as MOOSE in charting new frontiers in simulation-based education to support excellent patient care regardless of geography.



This type of comprehensive training and systems testing across a health system is unique. From this vantage point, we seek to advance patient safety and optimize “system intelligence” by comparing potential failure modes across hospitals. With this analysis we can understand which are unique to a given microsystem and which are common across institutions or disciplines. Such insight is invaluable to prospectively optimizing patient safety. This work was presented at multiple local, national, and international meetings in 2023 (page 24). We look forward to publishing it in 2024.

The Sim Center is a powerful tool helping MaineHealth achieve its aims. We invite you to visit and see what we do. We extend our gratitude to our capable staff, our motivated clinical partners, and supportive system leaders for their investment in simulation. Together, we are making healthcare safer and aiming to achieve MaineHealth’s vision of *working together so our communities are the healthiest in America*.

LEAH MALLORY, MD

MEDICAL DIRECTOR,
THE HANNAFORD CENTER FOR SAFETY,
INNOVATION AND SIMULATION

PEDIATRIC HOSPITALIST,
THE BARBARA BUSH CHILDREN’S HOSPITAL
AT MAINE MEDICAL CENTER

ASSOCIATE PROFESSOR OF PEDIATRICS,
TUFTS UNIVERSITY SCHOOL OF MEDICINE

JEFFREY A. HOLMES, MD

REGIONAL MEDICAL DIRECTOR,
HANNAFORD CENTER FOR SAFETY,
INNOVATION AND SIMULATION

EMERGENCY MEDICINE ATTENDING,
MAINE MEDICAL CENTER

ASSISTANT PROFESSOR OF EMERGENCY MEDICINE,
TUFTS UNIVERSITY SCHOOL OF MEDICINE

MEET THE TEAM

This “meet the team” page looks much different than it did a year ago. The Sim Center started 2023 by filling a simulation specialist vacancy. Due to an exceptionally strong candidate pool, we partnered with the Children’s Health service line to successfully convert philanthropic funds to hire both finalists to help support pediatric simulation-based service line goals.

THAT WAS ONLY THE BEGINNING.

By summer, Tufts University helped support the addition of a third SP trainer to produce additional medical school curriculum. The partnership with Children’s Health that funded an additional simulation specialist position also funded a part-time clinical simulation educator.

Simulation Specialist **Tim Pollick** started in February. Tim is a respiratory therapist. He first joined the Sim Center as an Embedded Participant in 2021, portraying various bedside roles. Prior to his healthcare career, Tim served 20 years on the NYPD.

Simulation Specialist **David Ireland** started in March. David is a paramedic/firefighter certified in cold water rescue awareness, hazardous materials operations, and incident management. He has worked as a paramedic supervisor at North East Mobile Health Services and adjunct instructor at Southern Maine Community College.

Simulation Training Specialist **Dana Legawiec** started in August. Dana is an experienced theatrical performer, director, producer, and educator. Previously, Dana was an SP for three years and a consultant at the Maine Alliance for Arts Education.

Simulation Clinical Educator **Dani Bruno** started in September. Dani is an experienced nurse educator with a decade in the PICU leading the pediatric congenital cardiac education program. Dani is a past Simulation Instructor Course participant and is integral to our weekly interprofessional pediatric training.



DANI BRUNO, BSN, RN, CPN
SIMULATION EDUCATION
SPECIALIST



DAVID IRELAND, NRP
SIMULATION SPECIALIST



DANA LEGAWIEC, MED
SIMULATION TRAINING
SPECIALIST



TIM POLLICK, RRT
SIMULATION SPECIALIST



BETH BONGIOLATTI GRAY, MA, CPM
SIMULATION SPECIALIST



BRUCE CARLETON, BS, EMT-P
SIMULATION SPECIALIST



SHELLY CHIPMAN, MSN, CCRN, CHSE
SIMULATION EDUCATION SPECIALIST



KARISSA HANNIFAN, BA
ADMINISTRATIVE SPECIALIST



JEFF HOLMES, MD
REGIONAL MEDICAL DIRECTOR



TYLER JOHNSON, CHSOS
SIMULATION SPECIALIST



SUSIE LANE, CHSOS
SIMULATION SPECIALIST



CHRISTINE MALLAR, BA
STANDARDIZED PATIENT
EDUCATION SPECIALIST



LEAH MALLORY, MD
MEDICAL DIRECTOR



CHRISTYNA MCCORMACK, MBA
ADMINISTRATIVE DIRECTOR



BETHANY ROCHELEAU
SIMULATION TRAINING SPECIALIST



MIKE SHEPHERD, BS, CHSE
OPERATIONS MANAGER



ERIN SIEBERS, MS
SIMULATION TRAINING SPECIALIST



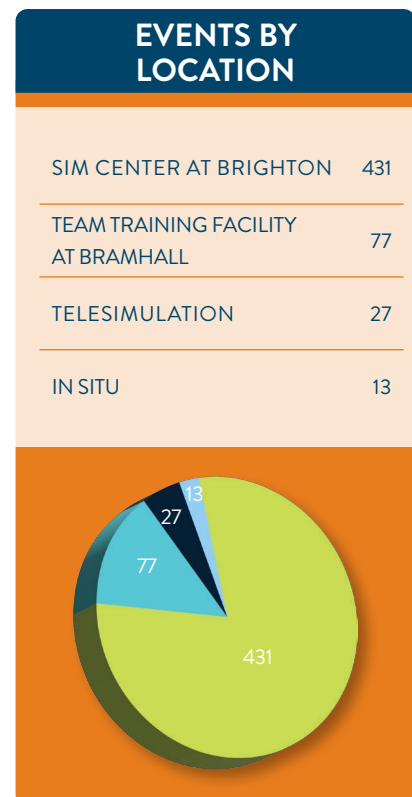
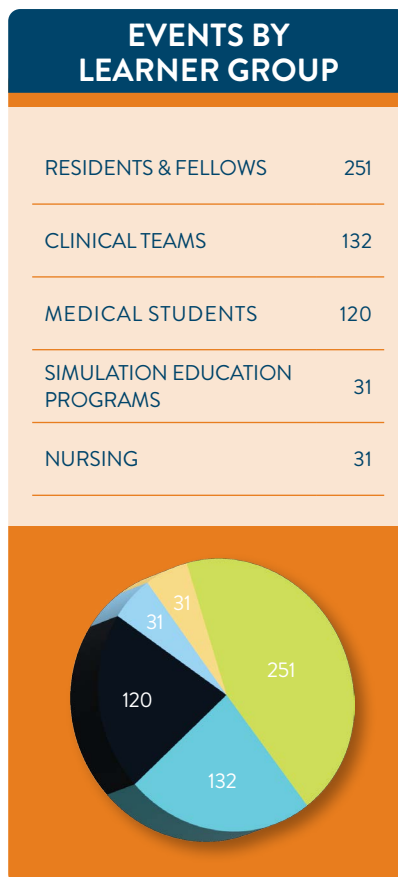
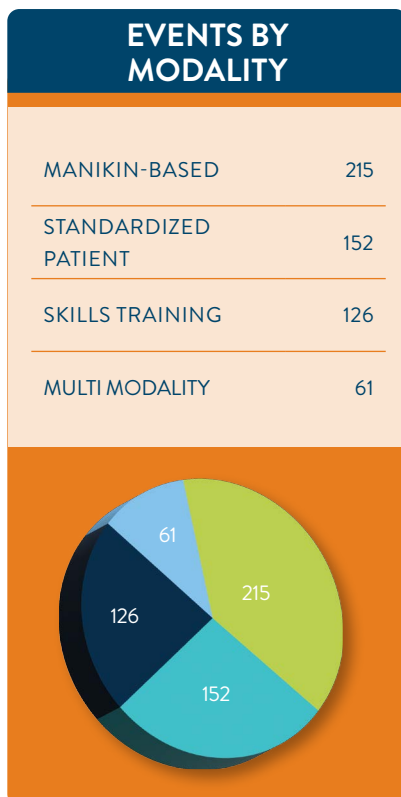
MARIAH WHEELER
ASSOCIATE SYSTEMS ANALYST

BY THE NUMBERS

CAPACITY

Given the growth in staffing, it's no surprise the Sim Center continued to set new records this year. For the first time, we surpassed 600 events, 5,000 learners, and 20,000 contact hours. Data on this page showcases annualized throughput over the past three years (top) and how events in the most recent year break down by modality, learner group, and location (bottom). We've also seen deliberate growth in the percentage of events encompassing interprofessional education.

THROUGHPUT	FY 21	FY 22	FY 23
EVENTS	475	545	603
LEARNERS	3,917	4,844	5,124
INTERPROFESSIONAL EVENTS	64%	68%	73%

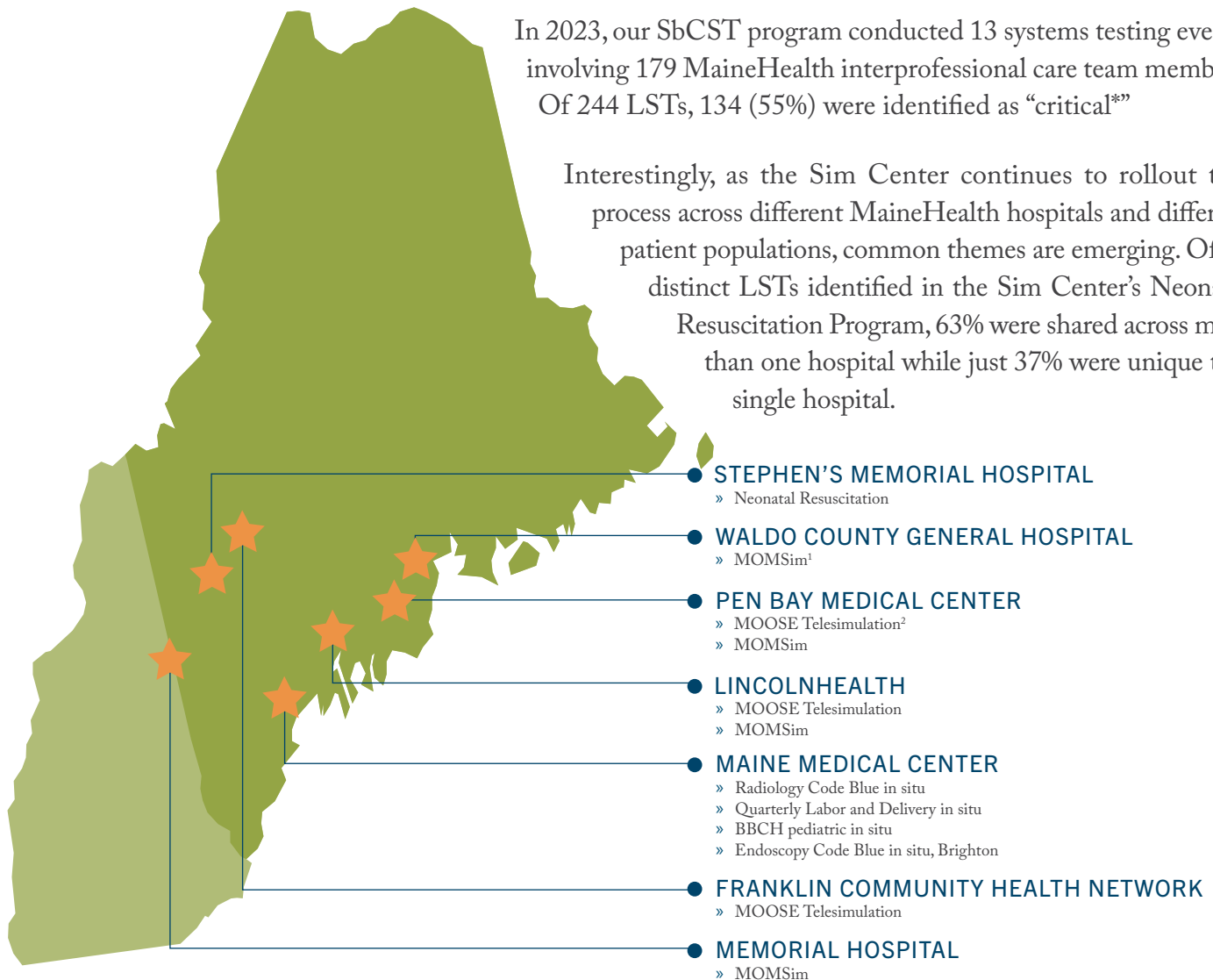


SIMULATION-BASED CLINICAL SYSTEMS TESTING

Healthcare Failure Modes and Effects Analysis (HFMEA) was created by the Veterans' Affairs National Center for Patient Safety to prospectively identify latent safety threats (LSTs) within teams and systems. HFMEA used with in situ simulation is a powerful patient safety tool. The resulting synergy provides for LSTs to be categorized, scored, and prioritized for remediation.

In 2023, our SbCST program conducted 13 systems testing events, involving 179 MaineHealth interprofessional care team members. Of 244 LSTs, 134 (55%) were identified as "critical"

Interestingly, as the Sim Center continues to rollout this process across different MaineHealth hospitals and different patient populations, common themes are emerging. Of 60 distinct LSTs identified in the Sim Center's Neonatal Resuscitation Program, 63% were shared across more than one hospital while just 37% were unique to a single hospital.



¹Maine Obstetric Medical Simulation: simulation training for MH hospital obstetrical sites

²Maine Ongoing Outreach Simulation Education: telesimulation to enable regular neonatal resuscitation training in MH hospital delivery rooms with remoteparticipation by neonatologists.

HAZARD SCORES

PROBABILITY	SEVERITY				
		CATASTROPHIC (4)	MAJOR (3)	MODERATE (2)	MINOR (1)
	FREQUENT (4)	16	12	8	4
	OCCASIONAL (3)	12	9	6	3
	UNCOMMON (2)	8	6	4	2
	REMOTE (1)	4	3	2	1

*The LST Hazard Score is calculated by multiplying Severity and Probability ratings (1-4 scale). Any LST scoring > or = 8 is deemed "critical."

PATIENTS

Simulation is a powerful patient safety tool. This type of programming, designed to prospectively identify latent safety threats, is called Simulation-based Clinical Systems Testing. SbCST uses simulation to recreate clinical scenarios to probe teamwork, communication, equipment, and protocols to identify latent safety threats without risk of harm to real patients or staff. This work typically occurs with interprofessional care team members in their native clinical environments, so-called in situ simulation.

NEONATAL RESUSCITATION SIMULATION

Stephen's Memorial Hospital was the 8th and final MaineHealth hospital to participate in our Neonatal Resuscitation Simulation program, a collaboration with MMC's NICU clinicians and the Sim Center. Neonatologists, neonatal nurse educators, and Sim Center staff travel to MaineHealth hospitals so interprofessional delivery room care teams can use simulation to remain ready for the rare neonatal resuscitation.

The in situ Neonatal Resuscitation Simulation program, the prerequisite event of the MOOSE program (page 19), includes hands on skills training, followed by realistic emergency scenarios within hospital delivery rooms to provide increased fidelity and opportunity to assess care delivery systems. Each clinical scenario is followed by a reflective debrief focusing on the case's medicine, teamwork, and systems testing. Though Stephen's was the final MaineHealth hospital to participate, the program didn't stop there. Maine General Hospital in Augusta, a MaineHealth affiliate hospital, was also included in this program in 2023. This is particularly noteworthy as 90 interprofessional care team members participated in five sessions over the course of three days.



REGULARLY OCCURRING INTERPROFESSIONAL TEAM TRAINING

Some clinical areas choose to regularly protect time of clinical teams to deliberately train together to optimize team performance and patient safety. The longest standing example is our obstetric teams at Maine Medical Center who have engaged in quarterly in situ team training since 2012. These exercises now include as many as 100 interdisciplinary and interprofessional care team members per session, participating in person or via Zoom. They use these sessions to maintain readiness to manage rare high acuity scenarios such as post-partum hemorrhage as required by national regulatory bodies, but also to optimize new protocols such as the Code OB team. For the first time this year, a Standardized Patient portrayed the patient, rather than a birthing manikin.



PEDIATRIC ECMO ACTIVATION AND CANNULATION

This year saw the completion of two interprofessional pediatric ECMO simulation events, both at the Hannaford Team Training Facility (HTTF) and two major in situs, all on the Bramhall campus, for PICU ECMO activation and cannulation and intrahospital transport. In total, approximately 40 learners from 10 professions and 8 units participated. Not only were teams able to practice these critical events, but systems testing identified 41 different LSTs from minor to significant that could be prospectively addressed to improve safety. Example LSTs detected and remediated include adding missing supplies for critical cut down procedures to the OR table, including specific instructions for use of a crib (as opposed to a bed) for smaller patients, and ensuring that critical specific specialists (Pedi ECMO surgeon, PICU pharmacist) are included on the activation page, among others.



PEOPLE





Medical Education has been a core part of the Sim Center mission from its inception. Utilizing modern technology and proven educational methods, we provide safe and immersive learning experiences for learners across the health professions continuum who care for MaineHealth’s patients. Below is a sampling of the many different ways the Sim Center supports MaineHealth’s academic mission.

SIMULATION INSTRUCTOR COURSE FOR NURSING WORKFORCE DEVELOPMENT

Supporting the MaineHealth workforce development, training, and retention of nurses is a Sim Center priority. In August, we hosted clinical nurse educators from MaineHealth and simulation educators from Southern Maine Community College via MaineHealth Workforce Development. This one-day simulation instructor course is designed to support strategic partnerships with undergraduate nurse training programs. In 2024, we will work with these nurse educators to support undergraduate nurse simulation curriculum.



PEOPLE

LAUNCHING END-OF-BLOCK OSCEs IN OBGYN AND PSYCHIATRY

As part of broad curricular reform at Tufts University School of Medicine, summative OSCEs are now used to assess students in key competencies after core clerkship rotations, aka “End-of-Block OSCEs.” After a successful roll-out for Family Medicine and Internal Medicine in the previous two years, leaders from both institutions believed additional disciplines could be piloted simultaneously. In fall of 2023, we launched pilots for students completing Ob-Gyn and Psychiatry after months of careful planning and data analysis to ensure scenarios, checklists, and faculty grading are sound. This type of rigorous study and targeted assessment ensures students graduate competent in key skills required of physicians.



TRAINING HEALTHCARE PROVIDERS IN GENDER AFFIRMING CARE

Family Medicine residents were the first to participate in a new curriculum born from our diversity, equity, and inclusion efforts. The SP team, in collaboration with the Gender Clinic, Family Medicine residency, and SPs who self-identify as LGBTQ+, engaged in co-creating this vital curriculum. The collaboration resulted in a simulated clinical encounter for learners to practice taking an inclusive sexual history of a transgendered patient and receive feedback in a psychologically safe environment for both learner and SP. Noteworthy is the careful process by which the team introduced this concept to SPs with lived experience; inviting participation only if they wished. More on this work can be found in the [Journal of Maine Medical Center](#).



COMBATting MEDICAL MISINFORMATION

Dr. Jennifer Hayman and a team of co-investigators from Medical Education, the Sim Center, and the University of New England, received two grants from the American Association of Medical Colleges and the Centers for Disease Control and Prevention to design and implement innovative curriculum to help interprofessional undergraduates learn to combat COVID and other health misinformation. Phase I of the curricular design was published in a special publication in RTI Press and our Standardized Patient team piloted Phase II in 2023.

The team produced an Objective Structured Clinical Exam (OSCE) on addressing medical misinformation using an interprofessional team. Learners included pharmacy students from UNE and medical school students from the TUSM Maine Track who met with SPs specifically trained on the scenario. Program evaluation data was collected at the conclusion of the exercise.

The final educational toolkit, available online in 2024, consists of evidence-based online resources, including video exemplars using SPs, in which faculty members demonstrated “best practices” for having difficult conversations with patients and colleagues and the OSCE cases to allow for deliberate practice of the challenging communication topic.

PEOPLE





WORKING TO PREVENT WORKPLACE VIOLENCE

MaineHealth, as well as other healthcare institutions, have identified management of behavioral escalation and prevention of workplace violence as key priorities to protect patients and healthcare care team members. Simulation offers an effective tool to train and empower teams in best practices to maintain safety. In 2023, the Sim Center piloted two curricular initiatives targeting this important issue.

Psychiatry resident Emma Millard, MD, received a MaineHealth Mentored Research Grant to design and assess an SP-based curriculum entitled: Simulation-Based Training for Psychiatry and Internal Medicine Residents in the Management of Acute Agitation. She presented her preliminary findings at the Costas Lambrew Research Symposium in May and was awarded the Himmelfarb Research Prize for this work.

In a second initiative, content experts from the MaineHealth Workplace Violence Prevention Task Force representing Security, Patient Relations, and Behavioral Health, piloted a team-based simulation training opportunity at the Sim Center's Hannaford Team Training Facility on the Bramhall campus. These

regular bi-monthly opportunities allow interprofessional teams the opportunity to recognize behavioral escalation, practice de-escalation techniques, and access additional resources such as Code Gray and safe patient restraint.



POPULATION

There is perhaps no better example of MaineHealth's vision of working together so our communities are the healthiest in America in action than the Sim Center's regional programming. Through simulation, clinical best practices are identified, refined, aligned and implemented throughout MaineHealth's communities. By evaluating teams and systems, the regional program fosters local empowerment through regional support that enhances institutional relationships and optimizes well-coordinated care. The results are measurable and lasting.

DOC4ADAY

Founded in 2012 by Vicki Hayes, MD, Associate Professor of Family Medicine, and Shelly Chipman, MSN, RN, CSHE, Simulation Clinical Educator, Doc4aDay is a pipeline activity supported by Maine Track medical student volunteers. Following a pandemic-induced hiatus, Doc4aDay returned with two sessions in 2023. Thirty-one high school students from Portland and Deering high schools participated with 16 medical student mentors. The event pairs each high school student with a current Maine Track medical student for immersion in a manikin-based scenario to experience obtaining patient information and clinical decision-making. Technical skill stations including knot-tying, hands-on suturing, and vital signs interpretation are also taught. Each day concluded with the participants listening to a medical student panel discussion about the pathway to a career in healthcare.



MAINE OBSTETRIC MEDICAL SIMULATION (MOMSIM)

This was another successful year for MOMSim, an initiative aimed at enhancing rural maternal healthcare through realistic training scenarios. Designed for interprofessional care teams, this program brings obstetric skills practice and high fidelity simulations to community hospitals, ensuring they stay adept in handling rare, complex obstetric emergencies.

During a MOMSim event, clinical teams at MaineHealth's birthing hospitals engage in lifelike simulations in their native clinical space, utilizing advanced manikins that mimic the intricacies of obstetric emergencies. Participants practice critical decision-making, teamwork, and communication



skills. They also reflect on the hospital system that supports them, discovering potential latent safety threats and creating mitigation strategies to improve patient care.

MOMSim empowers obstetric care teams at smaller hospitals, broadening access to costly simulation techniques to train for rare emergencies. This proactive approach helps mitigate risks, reduce maternal mortality rates, and improve childbirth outcomes.

By the end of 2023, we will have visited all MaineHealth birthing hospitals at least once and will have initiated one-year return visits. These repeat visits serve as a refresher training and provides an opportunity to test mitigation strategies developed during initial training.

Because of the dedication and passion these birthing hospital care teams have demonstrated and generous funding from Maine Medical Center's Rural Maternity and Obstetric Management Services (RMOMS) grant, care team members in 2024 will embark on developing and sustaining this simulation training program at each hospital, ensuring that every expecting mother, regardless of geographical location, receives the highest standard of care during childbirth.

MAINE ONGOING OUTREACH SIMULATION EDUCATION (MOOSE)

The MOOSE program continues to revolutionize neonatal resuscitation training in our community hospitals. By leveraging advanced telesimulation technology, this program connects remote neonatal subject matter experts with community care teams to regularly simulate and debrief neonatal resuscitation scenarios.

Through real-time video conferencing and interactive scenarios, community hospital care team members receive regular hands-on training opportunities to practice managing critically ill newborns. Neonatal ICU physicians and nurses observe simulations remotely, facilitating debriefing focused on perfecting techniques, teamwork, decision-making, and systems improvements. This innovative approach bridges the gap between centralized sub-specialty expertise and more rural healthcare facilities, ensuring that neonatal resuscitation skills are honed effectively and deployed consistently across MaineHealth.

This program has expanded to reach four MaineHealth birthing hospitals. MOOSE has proven to be a more practical simulation model to sustain and enhance the gains in confidence, skills, and teamwork required for successful outcomes in these low frequency, high acuity patients. This innovative program will be presented at the International Meeting for Simulation in Healthcare in January 2024.



VALUE





As the Sim Center continues to expand scope through growth, it remains aware of the responsibility to optimize efficiency of our internal operations. By ensuring wise stewardship of resources, we maximize our value to MaineHealth in many ways. This includes, by not limited to, practicing good governance, identifying new sources of revenue, and contributing to simulation's growing body of scholarly work.

SIMULATION GOVERNANCE COMMITTEE



- Alexandra Penney, DNP, MPH, RN, CPPS — Senior Director, Patient Safety & Compliance, MMC
- Brandy Brown, DSW, LCSW — Diversity, Equity & Inclusion Consultant
- Christine Mallar, BA — Simulation Education Specialist
- Christyna McCormack, MBA — Director, Medical Education
- Jeff Holmes, MD — Simulation Regional Director
- Jen Hayman, MD — UME Curriculum Director, Medical Education
- Kathleen Tartre-Sheehan, RN — Nursing Director, Southern Maine Health Care
- Kneka Smith, EdD, MPH — Vice President, Academic Affairs
- Leah Mallory, MD — Medical Director, Simulation
- Linda Chaudron, MD — Vice President, Medical Education
- Mark Parker, MD — Vice President, Quality & Safety
- Mary Ottolini, MD — Chief, Children's Health Service Line
- Mike Shepherd, BS, CHSE — Simulation Operations Manager
- Nathan Mick, MD — Vice President, Medical Affairs
- Paula White, MSN, RN — Senior Director, Center for Clinical & Professional Development
- Rebekah Hayes, BA — Grants Officer, MMC
- Sarah Hallen, MD, GME — Assistant Designated Institutional Official, MMC
- Sharon Baughman, DNP, MSN, BSN, RN — MaineHealth Chief Nursing Officer
- Shelly Chipman, MSN, RN, CHSE — Simulation Education Specialist
- Sierra Soghikian — Maine Track Class of 2026
- Susan Ahern — Vice President, Innovation
- Tim Fox, MD — Associate Vice President, Medical Affairs

SIM CENTER SCHOLARLY ACTIVITY



PUBLICATIONS

- Hayman J, Cohen Konrad S, Chaudron L, **Mallar C**, Price G, Prast B, Sararik J, **Mallory L**. Addressing COVID-19 Misinformation in Maine Through Collaborative Learning and Interprofessional Education. In Southwell BG, Anderson A, Berry A, Weems K, and Howley L (Eds.), [Equipping Health Professions Educators to Better Address Medical Misinformation](#) (pp. 9-12). 2023. RTI Press. DOI: 10.3768/rtipress.2023.op.0086.2303.
- **Chipman M**, Schreiber C, Fey F, **Lane S**, DiLisio C, **Mallory L**. [Engagement Across Professions: A Mixed Methods Study of Debriefing After Interprofessional Team Training](#). Simulation in Healthcare: *The Journal of the Society for Simulation in Healthcare* ():10.1097/SIH.0000000000000736, 2023 Jul 5. | DOI: 10.1097/SIH.0000000000000736
- Kupferman R, **Rocheleau B**, **Mallar C**, **Hannifan K**, **Gray B**, Hayes V, **Mallory L**, Brown B. Simulation to Improve Health Equity: Pilot Results from a Standardized Patient-Based Learning Opportunity to Practice Taking an Inclusive Sexual Health History. *Journal of Maine Medical Center*. 2023 accepted for publication.
- Brown B, Kupferman R, **Rocheleau B**, **Mallar C**, **Hannifan K**, **Gray B**, Hayes V, **Mallory L**. Optimizing Psychological Safety: Perspectives of Standardized Patients who identify as LGBTQ+. *Journal of Maine Medical Center*. June 2023 accepted for publication.





ORAL PRESENTATIONS AND WORKSHOPS

- International Meeting for Simulation in Healthcare (IMSH) annual conference, Orlando FL, January 2023:

- **Shelly Chipman, Leah Mallory, Jeffrey Holmes,** Alison Zanno, Misty Melendi, Michael Ferguson, Mary Ottolini, Samantha Piro, Sarah Gabrielson, Anya Cutler, Alexa Craig, on behalf of the MOOSE Research Team. “A Novel Telesimulation Program, Maine Ongoing Outreach Simulation Education (MOOSE) Improves Teamwork and Communication in a Rural Hospital”
- **Leah Mallory, Jeffrey Holmes, Shelly Chipman,** Alison Zanno, Misty Melendi, Mary Ottolini, Samantha Piro, Sarah Gabrielson, Anya Cutler, Alexa Craig. “A Simulated Neonatal Resuscitation Program Uses Healthcare Failure Mode and Effects Analysis to Identify and Categorize Latent Safety Threats Across a Rural Health System.”

- Costas Lambrew Research Retreat, Maine Medical Center, May 2023:

- **Christine Mallar,** Emma Millard, Wendy Craig, Will Quayle, Rachel Henderson, Chris Racine. “Simulation-Based Training for Psychiatry and Internal Medicine Residents in the Management of Acute Agitation: Preliminary Findings.”

**Himmelfarb Research Prize award recipient*

- **Shelly Chipman, Leah Mallory, Jeffrey Holmes,** Alison Zanno, Misty Melendi, Michael Ferguson, Mary Ottolini, Samantha Piro, Sarah Gabrielson, Anya Cutler, Alexa Craig, on behalf of the MOOSE Research Team. “A Novel Telesimulation Program, Maine Ongoing Outreach Simulation Education (MOOSE) Improves Teamwork and Communication in a Rural Hospital” Faculty Award Winner

Peter W. Bates Award for Excellence in Health Professions Education Research

- **Leah Mallory, Jeffrey Holmes, Micheline Chipman,** Anya Cutler, Samantha Piro, Anna Gilbert, Sarah Gabrielson, Mary Ottolini, Alexa Craig, Alison Zanno, Misty Melendi. “A Simulated Neonatal Resuscitation Program Uses Healthcare Failure Mode and Effects Analysis to Identify and Categorize Latent Safety Threats Across a Rural Health System.” Faculty Award Winner

Excellence in Quality Improvement Research





ORAL PRESENTATIONS AND WORKSHOPS (CONTINUED...)

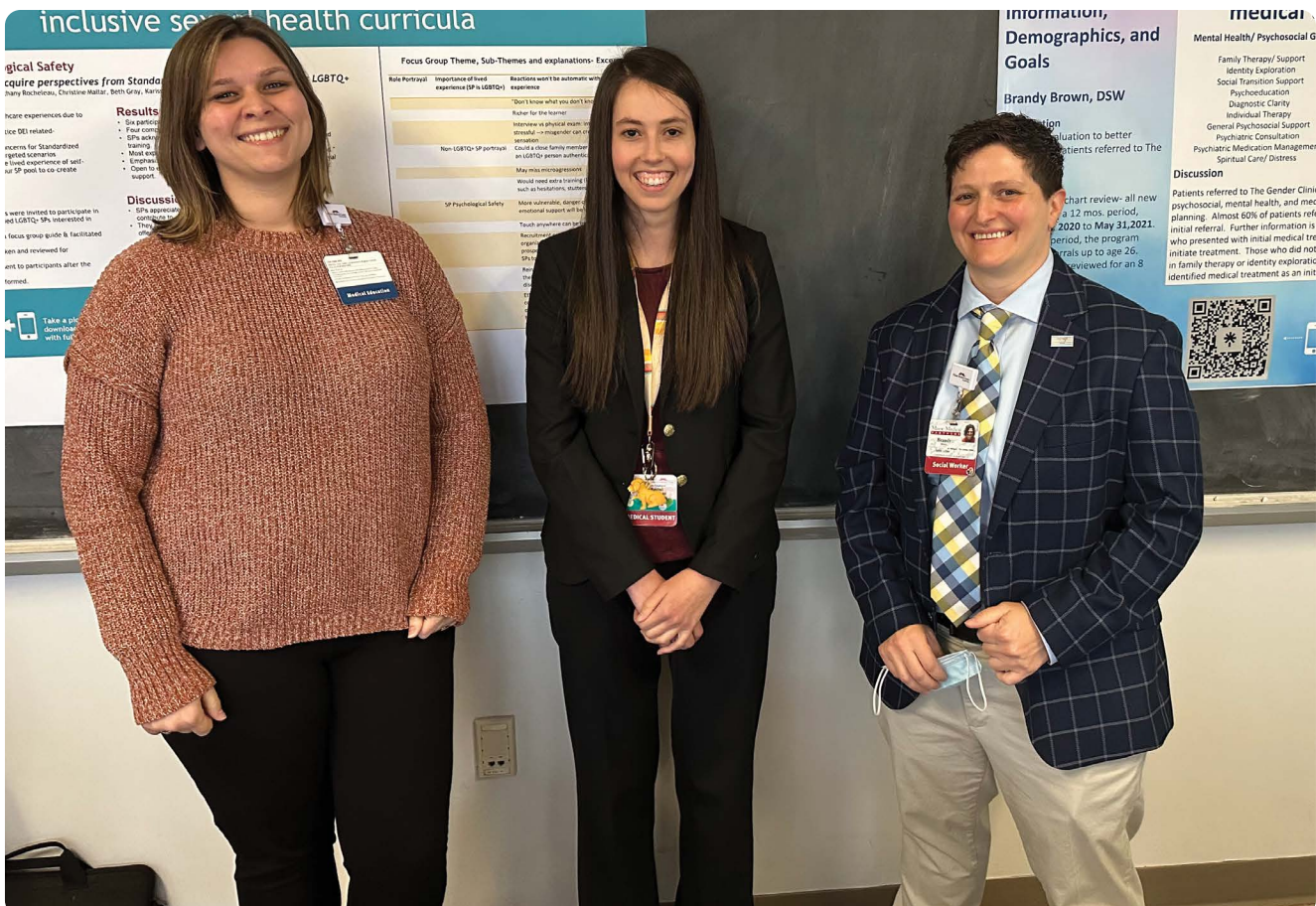
- International Pediatric Simulation Symposium and Workshops, Lisbon, Portugal, May 2023:
 - **Leah Mallory, Jeffrey Holmes, Micheline Chipman**, Anya Cutler, Samantha Piro, Anna Gilbert, Sarah Gabrielson, Mary Ottolini, Alexa Craig, Alison Zanno, Misty Melendi. “A Simulated Neonatal Resuscitation Program Uses Healthcare Failure Mode and Effects Analysis to Identify and Categorize Latent Safety Threats Across a Rural Health System.”
- Association of Standardized Patient Educators (ASPE) annual conference, Portland OR, June 2023:
 - **Mike Shepherd**, Grace Gephardt. “Help...I Need Somebody! Meaningful Metrics for Growing Your Program.” Invited Workshop.
 - **Erin Siebers**, Dan Brown, Elizabeth Zwilling, Shawn Galin, Cory Krebsbach, Gail Furman, Amelia Wallace. “Foundations of SP Methodology: Programming.” Preconference workshop.
 - **Mike Shepherd**, Grace Gephardt, Gina Shannon, Jamie Pitt. “Help...I Need Somebody! An Administrator’s Theme Song.” Panel presentation.





ORAL PRESENTATIONS AND WORKSHOPS (CONTINUED...)

- **Christine Mallar, Mike Shepherd,** Tony Collins, Marsha Harman, Ken Lay, Kerensa Patterson, Marsha Yelen. “From W9s to W2s: Transitioning SPs to Employees.” Panel presentation.
 - **Erin Siebers,** Christine Mallar, Amelia Wallace, Amy Binns-Calvey, Diane Ferguson. “More Than ‘I Have a Cough’: Roles SPs Play Outside of Exam Rooms.” Panel Presentation.
 - **Erin Siebers,** Clare Schaffer. “Developing a Module for Professional Development and Promotion of SP Methodology.” Podium presentation.
- Atlantic Partner Emergency Medical Services (APEMS) annual conference, Rockport, ME, November 2023:
- **Bruce Carleton, Tyler Johnson, Shelly Chipman.** “10 Things You Don’t Know About Simulation, but Should.” Panel Presentation.





POSTER PRESENTATIONS

- International Meeting for Simulation in Healthcare (IMSH) annual conference, Orlando FL, January 2023:
 - **Leah Mallory, Micheline Chipman,** Michael Ferguson, Kristin Greenwood, Mary Ottolini, Sarah Gabrielson, Allison Zanno, Misty Melendi,. “A Pilot Test of Expert Neonatal Resuscitation Teams Perceptions and Experiences of a Mixed Reality Simulation.”
- Costas Lambrew Research Retreat, Maine Medical Center, May 2023:
 - **Micheline Chipman,** Amanda Bennett, Meaghan Anderson, Anne Dean, Sarah Chang. “Is Sepsis Hiding in Plain Sight? Implementation of an Interprofessional (IP) Sepsis Simulation to Detect Early Sepsis.”
 - **Jeffrey Holmes, Leah Mallory, Micheline Chipman,** Becky Hunt, Sarah Austin, Tracy McMillan, Emily Watson. “The Maine Obstetric Medical Simulation (MOMSim) Program: Identification and categorization of Latent Safety Threats Across Rural Hospitals”
 - **Christine Mallar, Leah Mallory,** Jennifer Hayman, Shelley Cohen Konrad, Linda Chaudron, Grace Price, Brendan Prast, Julia Safarik. “How to Address Health Misinformation? Using Focus Groups to Understand the Experience and Needs of Interprofessional Undergraduate Health Professionals.”
 - **Bethany Rocheleau, Christine Mallar, Beth Gray, Karissa Hannifan, Leah Mallory,** Brandy Brown, Rachel Kupferman, Vicki Hayes. “Optimizing Psychological Safety: Perspectives of Standardized Patients Who Identify as LGBTQ+.”
 - **Bethany Rocheleau, Christine Mallar, Beth Gray, Karissa Hannifan, Leah Mallory,** Brandy Brown, Rachel Kupferman, Vicki Hayes. “Simulation to Improve Health Equity: Pilot Results from a Standardized Patient-based Learning Opportunity to Practice Taking an Inclusive Sexual Health History.”
 - **Shelly Chipman, Tyler Johnson, Leah Mallory,** Michael Ferguson, Mary Ottolini, Sarah Gabrielson, Mark Griswold, Misty Melendi, Mark Sivak, Scott Valcourt, Allison Zanno, Michael Zubrow, Kristin Greenwood. “A Pilot Test of Expert Neonatal Resuscitation Teams Perceptions and Experiences of Mixed Reality Simulation.”



POSTER PRESENTATIONS (CONTINUED...)

- International Pediatric Simulation Symposium and Workshops, Lisbon, Portugal, May 2023:
 - Jamie Fey. “Using Simulation to Evaluate Pediatric Resident Synthesis Skills in Patient Handoffs.”
 - **Leah Mallory, Micheline Chipman,** Jamie Fey, Christopher Motyl, Justin Michaud. “Teamwork Makes the Dreamwork: Making Interprofessional Simulation Work in Your Setting.”
 - Michael Ferguson, Mary Ottolini. “A Mixed Reality Prototype for Neonatal Resuscitation Training to Improve Access to Simulation.”
- Association of Standardized Patient Educators (ASPE) annual conference, Portland OR, June 2023:
 - **Christine Mallar, Bethany Rocheleau, Erin Siebers, Mike Shepherd.** “Delivering a Uniform Curriculum to Increase Efficiency and Access to Simulation, an Update.”
- Extracorporeal Life Support Organization annual meeting, Seattle WA, November 2023:
 - **Dani Bruno, Shelly Chipman,** Marissa Perry, Claire Jara, Jessica Zink, Michael Ferguson, Michael Zubrow. “Using Healthcare Failure Modes and Effects Analysis and in-situ simulation to identify latent safety threats in a new pediatric ECMO program.”



WEBINARS

- **Mike Shepherd,** Grace Gephardt, Bobby Schremmer, Meghan Simpson. “Measuring What Matters — an Overview of Sim Program Capacity Based on Effort.” November 2023. Society for Simulation in Healthcare webinar series.

DISTINGUISHED SERVICE TO PROFESSIONAL ORGANIZATIONS



- **Erin Siebers** is an active member on two Association of Standardized Patient Educator committees — Modules and Curriculum Development & Advancement — as well as a contributor to the development of ASPE's Center for SP Methodology.
- **Mike Shepherd** is an active member of the Society for Simulation in Healthcare's Hospital Section metrics workgroup and is considered a Subject Matter Expert in defining Sim Center capacity and throughput metrics.
- **Leah Mallory** served as an invited expert on simulation-based assessment for the National Board of Medical Examiners.

GRANTS AND PHILANTHROPIC GIFTS



- Misty Melendi, Alison Zanno. MaineHealth Community Physicians Funding Award. \$275,000 for Maine Ongoing *Outreach Simulation Education (MOOSE): Neonatal Resuscitation Telesimulation*.
- Jennifer Hayman, **Christine Mallar**, Shelley Cohen Konrad, **Leah Mallory**, Sara Nelson. Association of American Medical Colleges Health Professional Education Curricular Innovations Grant Program. \$39,905 for Interprofessional Education and Collaborative Learning Team Based Communication *Curriculum for Health Profession Students to Address COVID-19 Health Misinformation*.
- Principle Investigators Michael Zubrow and Michael Ferguson. Sub-Investigators **Leah Mallory**, Jill Gregory, Alexa Craig, Mary Ottolini. COBRE in Acute Care Research and Rural Disparities Pilot Award. \$83,120 for *Cardiac Arrest Rural Disparity Improvement using Novel Application of Long-distance Simulation (CARDINALS)*.
- **Jeffrey Holmes**. Health Resources and Services Administration (HRSA). \$43,325 for *RMOMS (Rural Maternity and Obstetric Management Services) to support continuation of MOMSim*.

VALUE





J RANDY DARBY, MD, SUMMER RESEARCH INTERNSHIP

Each year, the Sim Center sponsors a rising second year medical student to learn about simulation and pursue a scholarly research project. This competitive program provides a funded opportunity to participate in a simulation-based research project and spend a summer at the Sim Center participating in our activities in honor of J. Randy Darby, MD, our founding medical director. This year, Maine Track student **Sierra Soghikian, M26**, dove into simulation and lead a research project comparing teamwork assessment tools to select the optimal outcome metric for our system-wide team training programs.

Past summer interns include:

- 2022 Bryce Larson
- 2019 Richard Byrnes
- 2018 Campbell Belisle-Haley
- 2017 Laura Getchell
- 2016 Adrianna Eurich
- 2015 John Gilboy
- 2014 Jack Vernamonti
- 2013 Louis Eubank
- 2012 Erica Brown
- 2011 Bethany Bartley

COLLABORATION

WITH MITE, THE MAINEHEALTH INSTITUTE FOR TEACHING EXCELLENCE

MITE SCHOLARS (WITH SIMULATION-BASED PROJECT)

BRITTANY LACHANCE, MD

Faculty in the Department of Neuro Critical Care, Brittany Lachance, MD, launched her project, “Simulation-Based Mastery Learning to Improve Performance of Declaration of Death by Neurologic Criteria,” with GME learners from Internal Medicine and Neurology.



MICHAEL DEFRANCISCO MSN, RN, CCRN-CSC

A clinical nurse educator in the Cardiothoracic ICU, Michael DeFrancisco is the recipient of a MaineHealth Innovations grant to acquire technology in support of his ongoing effort to provide interprofessional simulation training for CTICU teams. The technology enhances fidelity of simulation by providing vital sign monitoring and clinical waveforms.



MITE AWARD FOR SIMULATION EDUCATION, LEADERSHIP, AND MENTORSHIP

JEFFREY A HOLMES, MD

This award is given to an individual who has made a significant impact on learners using simulation methodology. This individual excels at the core principles of simulation education (pre-briefing and debriefing, relevant and appropriate learning objectives, evaluation) and is a mentor for other simulation educators. Most importantly they consistently provide a learning environment where reflection on action occurs in a psychologically safe manner Simulation Instructor Course.



WITH MAINEHEALTH CENTER FOR INNOVATION

CARDIAC ARREST RURAL DISPARITY IMPROVEMENT USING NOVEL APPLICATION OF LONG-DISTANCE SIMULATION (CARDINALS)

CARDINALS is an innovative simulation research project, lead by Dr. Michael Zubrow, that provides an immersive live view to a remote physician participant during a simulated pediatric resuscitation. Using eye tracking capabilities, the remote physician's visual focus is captured and analyzed for quality and efficiency, aiming to show a correlation between visual focus and pediatric CPR quality as measured by the Clinical Performance Tool. The project, supported by a COBRE grant, aims for 35-40 participants ranging from novice to expert.



AUGMENTED REALITY TECHNOLOGY FOR MEDICAL SIMULATION (ARTFORMS)

Supported by the MaineHealth Innovation Center, Drs. Michael Ferguson and Mary Ottolini continue to refine their “HoloBaby” mixed-reality prototype in partnership with Case Western Reserve University. Mixed-reality simulation, where a realistic hologram is merged with a low fidelity manikin to allow for hands-on skills training, holds great promise to extend the benefits of simulation more practically to rural and/or remote healthcare teams. Stay tuned for upcoming publications and prototype testing across MaineHealth in 2024.



INNOVATION CENTER CLINICAL COACH

LEAH MALLORY, MD

Leah Mallory is a Clinical Coach, working with MaineHealth's Innovation Center to provide clinical leadership and expertise to innovators working to solve unmet patient care needs.



BEHIND THE SCENES

UNIVERSITY OF SOUTHERN MAINE MAKER SPACE FIELD TRIP

Thanks to some expert matchmaking by MaineHealth's Innovation Center, the Sim Center visited the USM Maker Space and simulation lab to see what they do, how they do it, and explore possibilities for collaboration in areas such as 3D printing, material science, and software development.



SP-BASED INNOVATION

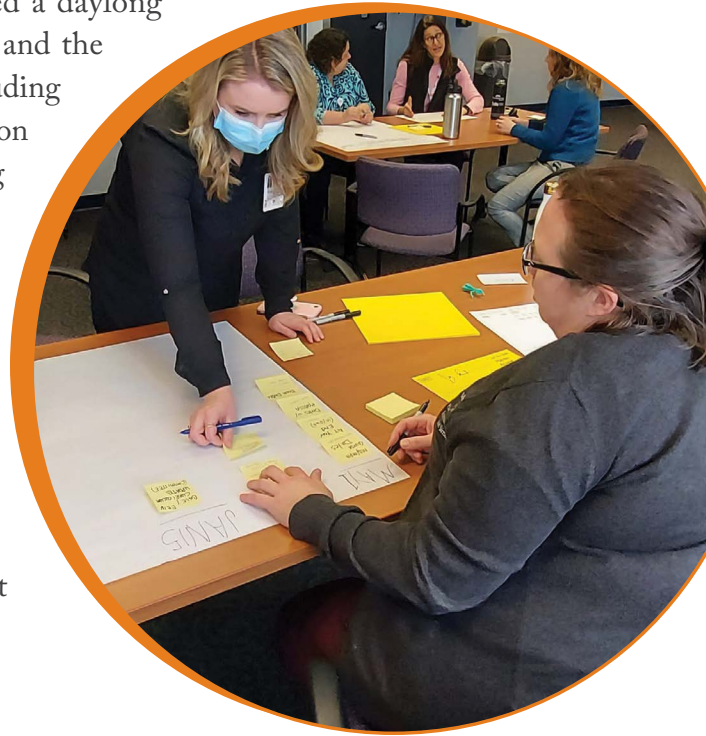
This year saw the conclusion of converting existing SPs from independent contractors to per diem employees. As the diversity of our scenarios increases so, too, does the need for growing the diversity in our SP pool. With “Standardized Patient” now a formal MaineHealth job description, all care team members are eligible to apply. To aid recruitment, we released this [video](#) and began publishing an SP newsletter.



Curriculum changes, more students, new colleagues, and re-entry from Covid led to a lack of clarity of roles and responsibilities of SP and medical school staff. Operations managers Ashlee Plowman and Mike Shepherd hosted a daylong workshop aimed at identifying the “rocks in our shoes” and the co-creation of an ideal future state. Several projects – including streamlined communications and a Sim Center orientation for students – were launched and completed, contributing to the successful end-of-block OSCE rollout for ObGyn and Psychiatry.

Simulation Specialist Beth Gray is using her background as a midwife and passion for women’s health to lead the Gynecologic Teaching Associate (GTA) program.

The SP control room has been converted into the “SP Core,” a shared office space for our growing SP team to foster collaboration, trusting relationships, and alignment of sustainable workflows.



BEHIND THE SCENES

MANIKIN-BASED INNOVATION

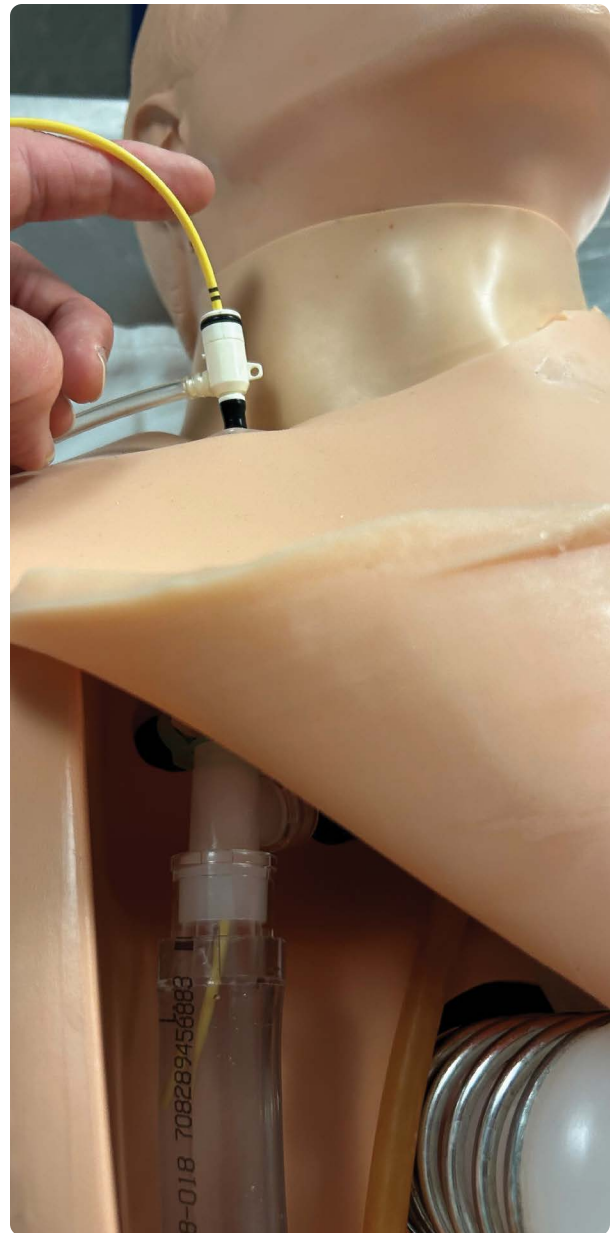
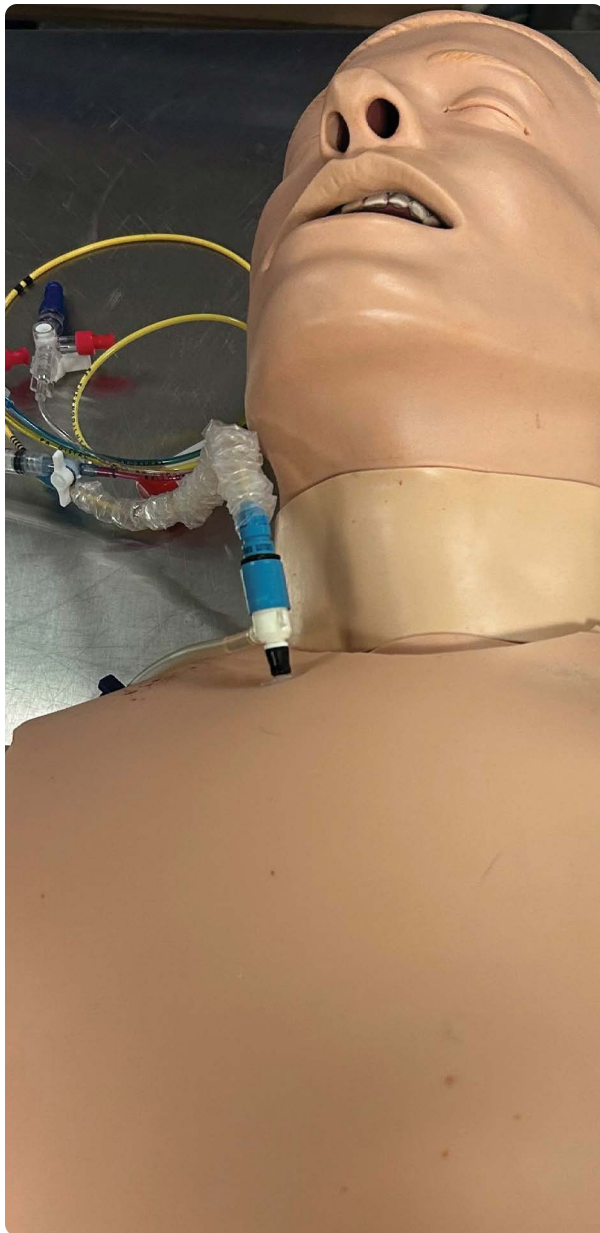
OPERATING ROOM FIRE

As part of its quarterly training, the Obstetrical leadership team wished to practice the protocol for a rare but critical event – fire in the operating room. An OR fire can happen when cautery is used in conjunction with the flow of oxygen. This presented an excellent opportunity for our simulation specialists to create a sufficiently realistic fire to enhance the event.



SWAN-GANZ CATHETER

There are many of task trainers on the market and several are used in the Sim Center. However, not every technical skill has an adequate trainer available. Fortunately, our simulation specialists are talented at creating innovative solutions. Among this year's product research and development is a home-made Swan-Ganz catheter insertion trainer. Used to monitor cardiac function, a Swan-Ganz catheter is placed by passing a small thin tube through the right side of the heart and arteries leading to the lungs. These photos shows an inserted catheter into a simulated artery.



BEHIND THE SCENES

TAKING A BREAK FOR FUN!

SUMMER FUN ON THE LAKE

Nestled beside the tranquil waters of Woods Pond, the Sim Center's summer lake house party was a time for the team to relax and appreciate each other and its meaningful work. Set against the backdrop of Pleasant Mountain, some opted for leisurely boat rides, tubing, kayaking, or taking the stand-up paddle board into the nearby cove to explore. Others lounged on the shore, savoring the view and lively chatter among the gentle lapping of waves. The summer lake house party was a memorable time to be together among nature's beauty and feel gratitude for one another.



HALLOWEEN PARTY

Some say the traditional winter holiday season is “the most wonderful time of the year.” But take highly creative people with unrestricted access to simulated body parts and moulage and Halloween presents infinite possibilities! Back for its second year, the Sim Center ended October with a fantastic Halloween party, which is quickly becoming a staff favorite. This year it expanded to include a potluck lunch and invitations to other DME colleagues on the Brighton campus. Side dishes were optional, but costumes were mandatory.



SIMULATION

SAFETY | TEAMWORK | EDUCATION

If you would like more information about how you can further support The Hannaford Center for Safety, Innovation & Simulation at Maine Medical Center, please call 207-662-2669.

OUR MISSION

Our mission is to utilize experiential learning techniques of health care simulation to educate the caregivers of tomorrow, optimize the clinical teams of today, and bolster the safety of our systems and spaces to ensure Maine's communities are the healthiest in America.

OUR VISION

Our vision is to become a primary tool of MaineHealth to improve patient safety, develop and optimize a clinical workforce, and disseminate best practices in order to advance the science of health care simulation through data-driven research on effectiveness and become a differentiating factor for MaineHealth in the marketplace.

