Providing high-quality healthcare is all about teamwork – deliberately practicing our craft together to be at our best for our patients.

- Dr. Tom Noeller

Annual Report to Stakeholders

The MetroHealth Simulation Center (MHSC) has grown rapidly since its inception in 2012. It is now a thriving hub of activity - an interdisciplinary training facility committed to the MetroHealth mission by providing innovative education and training leading to outstanding health care for our patients.

Healthcare personnel must be able to exercise considerable problem solving, procedural and decision making skills. They must demonstrate competence and work to achieve and maintain mastery in a variety of situations and procedures. MHSC combines sound educational methods, expert staff, and the best in high-fidelity simulation methods to help healthcare personnel achieve the highest level of quality care for their patients.

The MetroHealth System is a regional leader in healthcare delivery and education. We are continually recognized for trauma and critical care, emergency medicine, emergency preparedness, high-risk obstetrical and neonatal care, primary care, community health, and rehabilitation services - among many others. MHSC serves the needs of MetroHealth staff throughout the System while providing a growing array of outside programs and course offerings to regional, national and even international audiences.
Healthcare and medical education continues to evolve rapidly. MetroHealth not only evolves with the state of healthcare, we continue to lead by employing the best in cutting-edge methods and technologies. High-fidelity simulation is a critical piece of the new standard in healthcare education. By providing a risk-free environment for trainees to learn and practice all aspects of patient care - from routine interactions to critical procedures and decision making in high-acuity, high-intensity situations - simulation helps to improve patient care, educational efficiency, and learner satisfaction.

Simulation centers have been developed in medical institutions throughout the country. These have taken the form of hospital-based, university-based, and free-standing entities incorporating all available simulation modalities: high fidelity computerized mannequins, procedural task trainers, standardized patients/professionals, virtual reality-based platforms, and computer-based micro simulation systems. These modalities have remarkable capability to simulate actual medical scenarios, providing a level of realism necessary for deliberate practice. MSHC provides participants with an opportunity to learn in a low-risk environment and to be evaluated in an efficient, standardized manner. It joins impressive tools and technology, robust educational program design, and expert faculty and staff to provide an opportunity for healthcare personnel from across the entire spectrum of expertise and experience to develop and refine their craft.

MHSC (the “SIM Center”) serves the MetroHealth mission and virtually every department within the System. It provides critical support to graduate and undergraduate medical education, nursing education, provider certification and program accreditations. Additionally, it is an essential element of large initiatives such as TeamSTEPPS training, emergency preparedness, and continuing education programming.

**MHSC Numbers - 2014**
- 11,604 Learner contact hours
- 2460 Learners
- 260 Programs
- 24 Departments / Divisions served
The MetroHealth Simulation Center works hand-in-hand with numerous clinical areas to support various needs in accreditation, internal education, quality assurance, and external/outreach education.

**Accreditation Support**

*MetroHealth Burn Unit*

MHSC was specifically cited by American Burn Association / American College of Surgeons in the recent Burn Unit accreditation survey. MetroHealth is one of only a few sites in the nation using high-fidelity simulation in its Advanced Burn Life Support training program.

*Metro Life Flight*

The regular use of simulation programs in MHSC supported the ongoing education requirements for Metro Life Flight and CAMTS Accreditation.

*ACGME Clinical Learning Environment Review (CLER)*

Data generated from simulation programming supports Accreditation Council for Graduate Medical Education applications by multiple specialties. The use of simulation was cited repeatedly by core faculty during the 2014 CLER visit.

**Internal Programs**

**Multidisciplinary Training**

A full array of healthcare professionals including physicians, nurses, respiratory therapists, paramedics and many others participate in multi-disciplinary simulation programs in order to practice as they perform in real life. Faculty members developing simulation programs are encouraged to include all relevant disciplines in their programs – both to enhance realism and foster a spirit of collaboration.

**Graduate Medical Education**

*Residency / Fellowship curricula*

Simulation has been heavily integrated into curricula and utilized by numerous residency and fellowship programs including Internal Medicine, Pediatrics, Family Medicine, Emergency Medicine, Anesthesia, OB/GYN, Oral Surgery, Orthopedics, General Surgery, Neonatology and Cardiology. Data generated from these programs supports milestone-based competency assessments and accreditation reviews by the American Council on Graduate Medical Education.

*Objective Structured Communication Assessment of Residents (OSCAR)*

Incoming residents from all programs participate in a program to assess and develop critical communication skills during their first month at MetroHealth.

*Cornerstone courses*

These highly structured, resource-intensive orientation programs provide new residents with an opportunity to learn, develop and practice critical decision-making, clinical, procedural and communication skills prior to caring for real patients.

**Nursing**

*Residency*

MHSC provides valuable support for the Nurse Residency program by conducting regular
simulation-based programs involving communication, skills performance, clinical assessments and emergency response.

**Ambulatory Academy**

To address a critical need in the outpatient clinics, a simulation-based “Ambulatory Academy” was established to educate and assess clinical assistants. The focus is on basic skills including acquisition of vital signs, situation assessment, team response, communication, and acquisition of patient blood and urine samples.

**Annual Competency Days**

MHSC has worked with Nursing to provide space, equipment, personnel and consultation for the 2015 Competency Days. These monthly, 2-day programs involve an array of skills assessments for every nurse within The MetroHealth System.

**TeamSTEPPS**

TeamSTEPPS is a national program developed by the Agency for Healthcare Research and Quality and the Department of Defense to train healthcare professionals in vital teamwork skills to deliver safe, reliable care.

**Instructor Courses**

MHSC resources support lectures, exercises and simulation programs for the bimonthly internal instructor courses. This innovative work was presented at an international simulation conference in January, 2015.

**Department-Level Implementation**

MHSC is used by TeamSTEPPS instructors to conduct multidisciplinary simulation programs for teams to practice applying TeamSTEPPS principles.

**Master Trainers**

The MHSC manager, technician and medical director are TeamSTEPPS master trainers. They regularly provide didactic and simulation programming to all facets of the system-wide TeamSTEPPS program as well as the regional training center course.

**Regional Training Center**

MHSC provides essential personnel, equipment, AV and program-design resources to support MetroHealth as one of seven TeamSTEPPS Regional Training Centers in the nation. Programs are currently conducted in the Global Center for Healthcare Innovation.

**Emergency Preparedness**

*Emerging Infectious Diseases (MetroHealth, Ohio Department of Health, Centers for Disease Control and Prevention)*

MHSC designed and implemented numerous high-fidelity simulation programs to develop and refine our internal response to the Ebola threat and other highly communicable diseases. Multidisciplinary teams from the ED, Special Disease Care Unit and Metro Life Flight have participated thus far and additional programs are planned for OB, pediatrics and EMS. High-fidelity simulation programs elucidated critical factors that would otherwise only be discovered during real world events. ODH and CDC reviewers cited our use of high-fidelity simulation as a powerful, positive and integral aspect of our preparedness that help
lead to MetroHealth being designated as the only Ebola Treatment Center in Ohio.

**All-Hazards Response**

Building upon our experience with Ebola preparation, MHSC is working closely in an integrated fashion with various departments on an “all-hazards” response and training program. This program will build on our ability to respond to an array of anticipated threats using high-fidelity simulation methods to properly refine a robust and reliable response to an array of possible threats, both natural and man-made.

**CWRU School of Medicine**

**Clerkships and Acting Internships**

CWRU SOM students participate in simulation programs while on clinical rotations at MetroHealth. Acting internships utilize simulation programs integrated into their rotation schedule.

**Simulation Rotation**

MHSC offers a 2- and 4-week rotation to CWRU SOM students. The rotation provides a rich opportunity to learn concepts related to educational and simulation program design. Students participate in simulation scenarios and practice procedures. They apply their new knowledge to design and test a simulation scenario targeted for publication on the Association of American Medical Colleges MedEdPORTAL.

**Bootcamp course**

Graduating CWRU medical students who have matched into a general surgery residency participate in a “bootcamp” course that prepares them for practice as a surgical intern. The month-long course relies heavily on MHSC resources including space, personnel, procedural simulators and cadavers.

**Metro Life Flight**

**Continuing Education**

MHSC provides regular simulation programming for all Metro Life Flight personnel for continuing education, quality assurance / improvement and new skill acquisition. Programs include scenario-based critical care, procedural, and skills training.

**Outreach Programs**

MHSC conducts regional outreach education programs to various police, fire and EMS agencies in conjunction with Metro Life Flight. These programs enhance provider education while building relationships within the Metro Life Flight service area.

**Employment Interviews**

High-fidelity simulation has been incorporated as part of an intense interview process for prospective Life Flight personnel. This work was presented at an international simulation conference in January, 2015.

**EMS Education**

Partnering with our EMS coordinator, MHSC provides an array of pre-hospital provider education programs. These programs significantly enhance regional pre-hospital care while building relationships with agencies that cover the MetroHealth service area. MHSC is leading the region by offering high-fidelity
simulation to augment existing training programs. By offering such programs, our reputation among pre-hospital providers and the areas they serve is significantly enhanced.

_Courses include:_
- Paramedic Refresher
- ITLS (International Trauma Life Support)
- Fire Department Training
- Lakewood Fire Department
- Kent Fire Department (near the Metro Life Flight Portage base)
- Tactical EMS
- Brecksville, Lakewood, Parma
- Ohio Tactical Officers Association annual conference
- Avon Lake Active Shooter Simulation (with Metro Life Fight)

_NOTS / ATLS_

The Northern Ohio Trauma System works with MHSC to provide simulation-based training at its annual Symposium. In 2015, MHSC will partner with the Advanced Trauma Life Support course to offer an attractive training opportunity for area trauma providers.

_System Initiatives_

_ExpressCare & EMS_

Fostering efficient, accurate communication between ExpressCare units and EMS is important to assure a continuum of quality care. Simulation programs have been used to successfully foster this communication between ExpressCare and EMS. Programs emphasize appropriate and efficient use of various transport methods, designation of an appropriate receiving hospital, and inter-agency communication.

_PROCEDURAL SEDATION_

As an ongoing quality initiative, a pilot program using high-fidelity simulation has been initiated. Providers credentialed to provide procedural sedation are participating in a standardized skill verification program with their multidisciplinary team using realistic environments and discipline-specific scenarios.

_QUALITY ASSURANCE_

MHSC is partnering with the hospital’s Quality team, employing simulation resources in quality assurance activities. High-fidelity simulation methods can address issues related to providers, multidisciplinary teams and hospital systems to identify and improve critical patient care issues.

_PATIENT EXPERIENCE_

Resident physicians participated in a simulation program that placed them in the role of an emergency department patient or family member. Over several hours they lived the experience of a typical patient who suffered a moderate motor vehicle crash – full spinal immobilization, ambulance ride, exam in the trauma bay, and continued care in a hallway bed. They experienced issues related to waiting, discomfort, disorientation, privacy, and a flood of information. This successful program will serve as a model for the development of programs for other disciplines and patient-contact areas to improve physician empathy and doctor-patient communication skills.
Outside Courses

Regional

*Internal Medicine Residency Critical Skills*

The St. Vincent Charity Medical Center Internal Medicine residents participated in a 2-day program involving critical care, “code blue” response, resuscitation and key procedures.

*Northern Ohio Trauma System (NOTS)*

MHSC supports NOTS by conducting high-fidelity simulation exercises for providers at the annual NOTS Symposium at the Cleveland Convention Center.

*Paramedic Refresher Course*

Required course for active paramedics, the Refresher has been augmented with MHSC simulation programming to make it a leading program for the region.

*Fire Department Continuing Education*

MHSC has designed and implemented a training course for regional fire departments within the MetroHealth and Metro Life Flight service region. The course is conducted off-site at their training facilities incorporating realistic scenarios in real environments.

*Tactical EMS*

Working with Metro Life Flight, MHSC conducts training programs for regional Tactical EMS providers. Participants include paramedics and officers from local agencies as well as the FBI and ATF. Programs have been conducted in Parma, Lakewood, Avon Lake and Brecksville as well as the Ohio Tactical Officers Association annual conference.

*Simulation Instructor Course*

MHSC provides a full-day instructor course for clinical educators who wish to effectively use simulation in their training programs. During this “hands-on” course, participants receive tailored instruction in simulation methods, engage in interactive exercises to develop their own scenarios, implement a scenario in real time, and engage in facilitated debriefing exercises.

*National / International*

*SANE (Sexual Assault Nurse Examiner) Course*

MHSC is proud to be the first simulation center in the nation to partner with leading experts to offer high-fidelity simulation resources to augment SANE training. By using simulation methods, the program attracts and efficiently trains providers from around the nation. Prior to this application of simulation, new providers relied on an inefficient “on-the-job” training model.

*TeamSTEPPS*

MHSC provides an array of resources – personnel, equipment, and simulation program design – to our TeamSTEPPS regional training program. MetroHealth recently became one of 7 sites in the nation to serve as a regional TeamSTEPPS training center. Other sites include UCLA, Tulane, Northshore Long Island Jewish, University of Washington, and University of Minnesota, and Duke.
MHSC Presentations in 2014


Supporters

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Those whose efforts and commitment led to the creation of the Simulation Center

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Attending Physician, MetroHealth Department of Emergency Medicine |
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Executive Director, MetroHealth Simulation Center |
<p>| <img src="image3.jpg" alt="Photo" /> | Jackelyn Csank | Manager, MetroHealth Simulation Center |</p>
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