

SIMULATION CENTER

2016
Annual
Report



SIMULATION:

Improving the safety
and quality of health
care delivered by
NYC Health + Hospitals.

NYC
HEALTH+
HOSPITALS

SIMULATION
CENTER



The Simulation Center serves the entire healthcare system providing simulation to advance system-wide patient safety and quality improvement initiatives.

Established in 2010, The Simulation Center is implementing a Devolved Model of Simulation that expands the reach of simulation and allows access locally to New York City Health + Hospital facilities.

Currently, the Center hub and newly established satellite centers offers courses that have been developed based on an examination of root cause analysis, claims data, and hospital performance data. Team training is an integral part of the course design and delivery. The “insitu” or unit-based simulation program is growing in selected units throughout the hospital system. Better patient outcomes and improvement in staff satisfaction has been seen in the areas where these programs have been established.

The Simulation Center Hub
1400 Pelham Parkway South
Building 4, 2nd Floor, Room 200
Bronx, NY 10461

CONTENTS

1 EXECUTIVE SUMMARY

SYSTEMS INTEGRATION

- 3 Activities
- 4 Training Encounters
- 5 Core Curriculum

SATELLITE CENTERS

- 6 Elmhurst Simulation Center
- 10 Harlem Simulation Center
- 12 Lincoln Simulation Center

14 UNIT-BASED SIMULATION

15 SIMULATION CENTER FELLOWSHIP 2016

RESEARCH ACTIVITIES

- 16 Publications
- 17 Presentations

19 THE SIMULATION CENTER RESOURCE TEAM

Live Your Healthiest Life. **NYC HEALTH+ HOSPITALS**

Simulation Center Central
1400 Pelham Parkway South
Building 4, 2nd Floor, Room 200
Bronx, NY 10461
www.nychealthandhospitals.org/simulationcenter



STAY CONNECTED. FOLLOW US.

EXECUTIVE SUMMARY



Calendar Year 2016 marks the Simulation Center's sixth year of service to the clinicians and staff of New York City Health + Hospitals. The Simulation Center's core mission is to support the service of the Health + Hospitals system through more efficient clinical skills acquisition, teamwork and communication training and process improvement to improve patient care. To date, we have delivered over 19,000 encounters using innovative, engaging, and fun, evidenced-based simulation experiences that help to support and improve the safe, quality care that is delivered to our patients and to improve the patient experience.

Learners consistently rank our courses as a 3.75 out of 4, with excellent feedback. To date, we have built a cadre of 40 simulation instructors who provide simulation in various forms to clinicians and staff throughout the system. 2016 saw major growth in our simulation fellowship program. We believe that the only way to meet our 2017-2021 strategic plan goals of active satellite simulation centers established in most acute facilities

(including corrections health and Henry J. Carter nursing facility) is to promulgate the growth of experienced simulation educators. To this end, we increased our Fellowship intake to an interprofessional group of 13 for 2016-2017. We have also developed the Simulation Fellowship curriculum to include eighteen education days which include topics such as debriefing, curriculum design, scenario development and simulation operations behind the glass.

One of our most popular courses in 2016 was the Introduction to Debriefing course. We have trained over 132 learners in the art of debriefing which we believe will have a major impact on improving the Health System's culture of teamwork and communication around patient-centered care. Calendar Year 2016 brought over 3,800 learners to the Simulation Center. As well as Introduction to Debriefing, Central Line Skills Placement, Advanced Airway Skills, Cardiac Code Team, Shoulder Dystocia Teamwork and Skills, and Postpartum Hemorrhage Teamwork and Skills courses continue to be our most

EXECUTIVE SUMMARY CONTINUED

popular courses offered. A new Obstetric Emergencies course has been developed and is now being offered.

Calendar Year 2016 saw 40 Behavioral Health professionals participate in a train-the-trainer program for the Debriefing for Behavioral Health Teams course. With the help of these excellent Educators, this program will be rolled out to all NYC Health + Hospitals Behavioral Health units. The goal is to have trained the staff in these units using advanced debriefing skills, so that over time the rates of restraint usage and seclusion will decrease, as well as staff injuries. The Simulation Center extended its reach to fulfill an important role in the Health system's fight against Ebola Virus Disease (EVD). The Center coordinated the training of covered personnel in all acute care facilities as well as developing training aids, presentations and videos of donning and doffing procedures for Personal Protective Equipment (PPE).



NICOLE BENVENUTO/THE NEW YORK TIMES

The Center also trained Hospital Police in how to don and doff PPE to assist clinical staff in care of a suspect or positive patient.

The Simulation Center continues to push simulation into all of the acute care facilities in a "devolved" model of simulation. With the Simulation Center as the hub, Satellite Centers in Elmhurst and Harlem have opened and are providing simulation to learners within those facilities, eliminating the need to travel to the hub at Jacobi Medical Center. These satellite centers are also providing better access to simulation in those facilities.

The Simulation Center was generously gifted with a \$400,000 grant from the Hospital-Medical Home program to improve inpatient quality and safety projects in the areas of maternal emergencies and neonate care. The Simulation Center was able to purchase two brand new full-bodied birthing simulators and a full-bodied hi-fidelity neonate that will be used for courses at the Simulation Center. The Center also purchased full-term and pre-term baby manikins, a variety of part-task trainers and iPads for every acute care facility, with the goal of having OB unit-based programs established in most facilities by the year 2021.

The Simulation Center works closely with all of the units of the Medical & Professional Affairs division of the hospital system and quickly responds to emergent needs by developing simulations to drive new policy guidelines and address knowledge, teamwork and communication gaps. This "modus operandi" sets the New York City Health + Hospitals Simulation Center apart from other simulation programs.

THE SIMULATION CENTER RESOURCE TEAM

Komal Bajaj, MD, FCOG, FACMG
Clinical Director

Juan Cruz, MICP
Senior Simulation Specialist

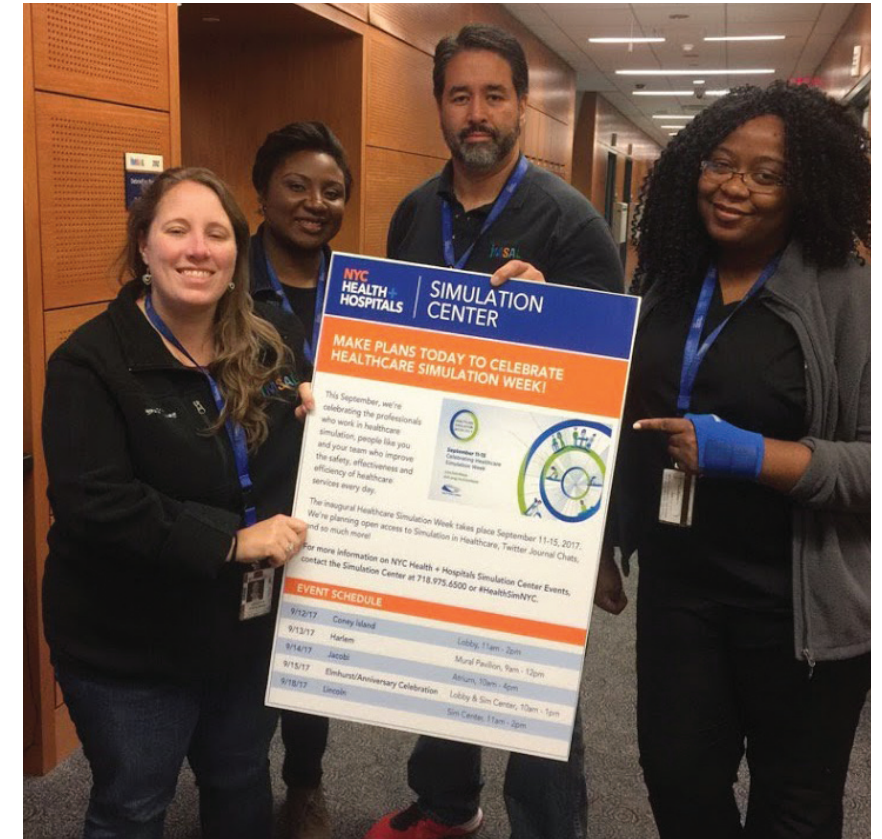
Tatiana Malvoisin, MS
Simulation Coordinator/Specialist

Michael Meguerdichian, MPH, MD
Clinical Director

Kimberley Miller, BBA
Coordinating Manager

Jessica Pohlman, MPA, NREMT-P
Director of Operations

Katie Walker, MB, RN
Director



RESEARCH ACTIVITIES

PRESENTATIONS (continued)

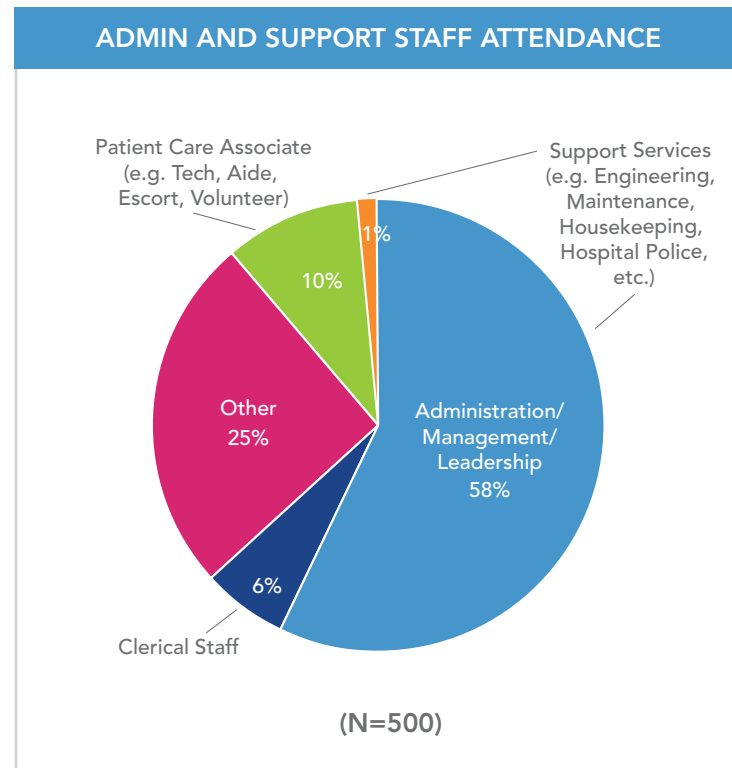
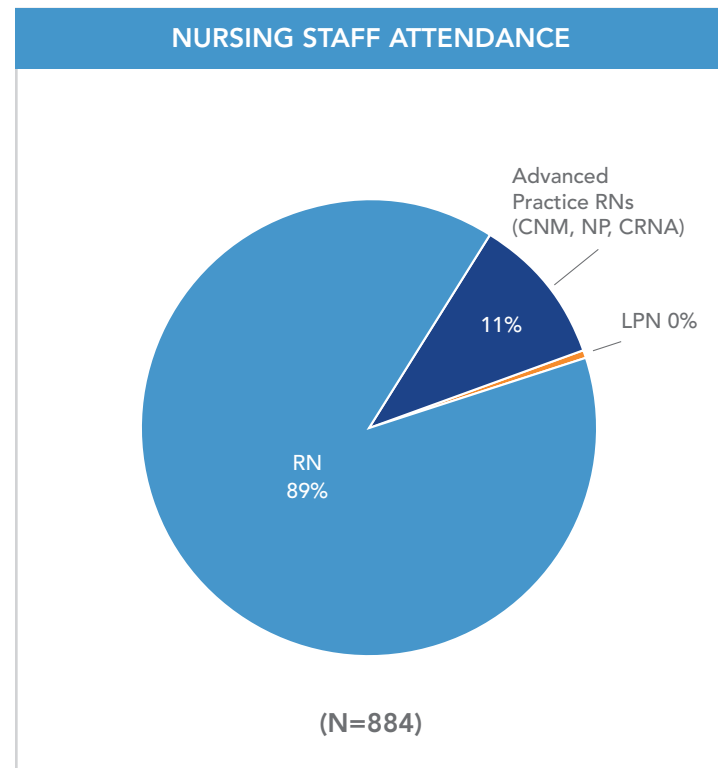
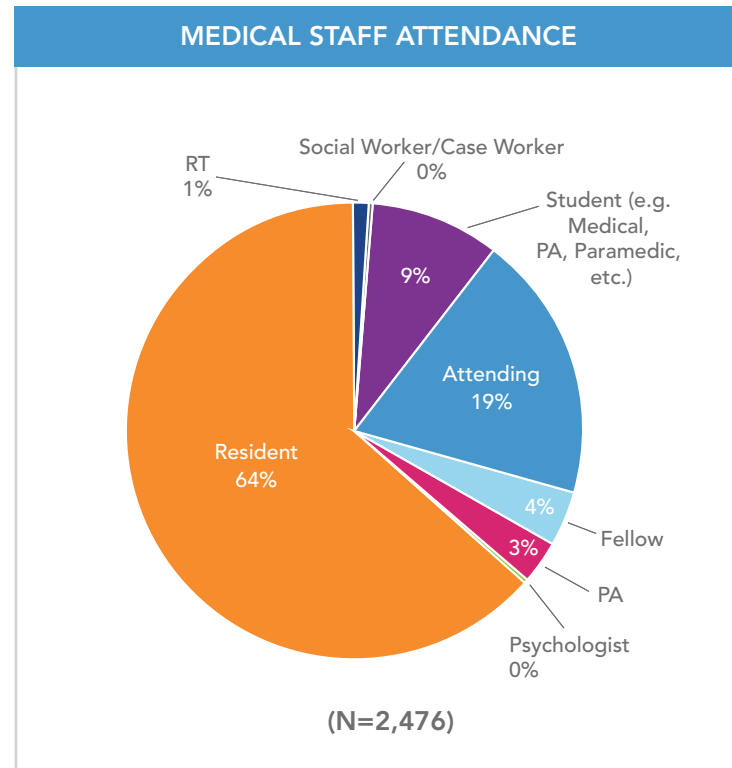
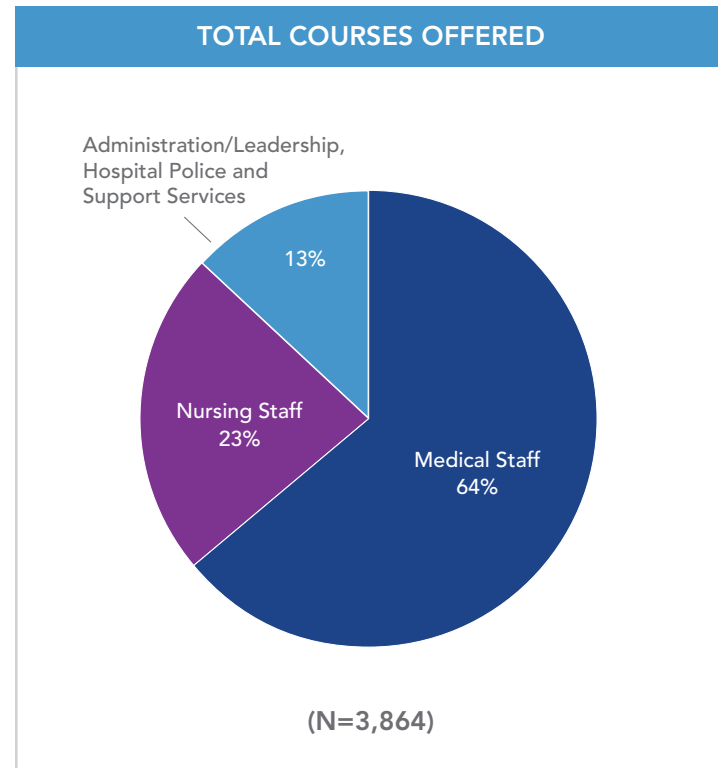
Title of Presentation	Name of Meeting	Date	Location	Presenter(s)	Type
Fellowships in Simulation: Future Directions	IMSH 2017	1/2017	Orlando, Florida	Meguerdichian, M., Bajaj, K., Okuda, H., Papanagnou, D., Walker, K.	Panel Presentation
Kinesthetic Procedural Skills: Strategies to Overcome Challenges in Teaching	IMSH 2017	1/2017	Orlando, Florida	Papanagnou, D., Bajaj, K., Chandra, S., Hall, R., Nadir, N., Wanner, G.	Workshop
Overcome Obstacles in IPE In-situ Programming	IMSH 2017	1/2017	Orlando, Florida	Gardner, R., Young, D., Bajaj, K., Darby, J., Fernandez, G., Honkanen, A., Lee, C., Miller, V., Novalija, J., Paige, J.,	Workshop
Transformative Teams	IMSH 2017	1/2017	Orlando, Florida	Bajaj, K., Gaba, D., Shum, C., Walker, K.	Panel Presentation
Simulation Program Development: Set Up for Success	IMSH 2017	1/2017	Orlando, Florida	Driggers, B., Seropian, M., Walker, K.	

SYSTEMS INTEGRATION

ACTIVITIES – CY 2016

COURSES BY VOLUME			
Sim Center Course / Event	# of Sessions Conducted	Course Hours Delivered	# of Staff Training Encounters
AWHONN Intermediate Fetal Monitoring Course	1	7	19
Advanced Airway	14	56	106
Airway Skills for Critical Care Unit	1	4	7
Advanced Trauma Life Support Cert/Recert Program	2	14	33
Adult Cardiac Code Team	28	84	292
Care Team Development Workshop	9	36	154
Care Team Development Workshop Small Group	37	273	100
Center for Medical Simulation: Simulation as a Teaching Tool Instructor Course	4	28	79
Central Line Placement Skills	31	124	345
Code Team 2.0	9	27	76
Critical Care Simulation Session	1	4	14
Debriefing for Behavioral Health Teams	8	32	53
Debriefing for BH Teams Train the Trainer	2	14	62
Emergent Deliveries	2	8	20
Grand Rounds	26	104	693
Grand Rounds Small Group	15	30	102
Hospital Police Blood Loss Sim Session: Stop the Bleed	1	4	9
Improving Patient Experience: Ambulatory Care	8	16	21
Introduction to Debriefing	16	112	142
Live On NYOrgan Donor Sim Session	2	8	11
Mock Codes	3	9	50
National Ebola Training and Education Center Program	2	14	62
Neonatal Resuscitation Program	15	105	129
Nurse Educators for Restraint	1	2	12
Obstetrical Emergencies	10	40	82
Pediatric Airway Skills	8	32	69
Pediatric Code Team	12	48	108
Postpartum Hemorrhage Teamwork and Skills	6	27	41
Practice: Advanced Airway	3	9	3
Practice: Central Line	3	12	3
Shoulder Dystocia Teamwork and Skills	5	20	28
Sim Wars Prep	1	2	5
Teamwork & Communication in Acute Care and Common Emergencies	17	68	270
Trauma Resuscitation	12	24	95
Unit Based Simulation: EM	25	50	209
Unit Based Simulation: OB	14	28	149
Vascular Access Workshop	1	4	27
Virtual Reality Simulation: Bronchoscopy	11	44	30
Zika Virus Preparedness	10	30	127
Grand Total	402	1,657	3,864

SYSTEMS INTEGRATION TRAINING ENCOUNTERS



RESEARCH ACTIVITIES PRESENTATIONS

Title of Presentation	Name of Meeting	Date	Location	Presenter(s)	Type
Working Memory is Limited	Australasian Simulation Congress 2016	8/2016	Sydney, Australia	Meguerdichian, M.	Oral
The Safe Motherhood Initiative Checklist Experience	Illinois Perinatal Quality Collaborative Hypertension Initiative	6/2016	Quarterly Webinar	Bajaj, K.	Oral
Working Memory is Limited	IMSH 2016	1/2016	San Diego, California	Meguerdichian, M., Walker, K., Bajaj, K.	Oral
In-Situ Simulation: A Tool for Diagnosis and Management of Latent Error	IMSH 2016	1/2016	San Diego, California	Bajaj, K.	Oral, Panel
Validating Obstetrical Crisis Checklists Using Simulation: A Randomized Control Trial	Society for Maternal Fetal Medicine Meeting	2/2016	Atlanta, Georgia	Bajaj, K.	Oral
Real Time Medical Debriefing in the Emergency Room	IMSH 2017 (accepted)	2/2017	Orlando, Florida	Nadir, N., Bajaj, K., Bentley, S., Papanagnou, D., Rinnert, S., Sinert, R.	Poster
Unit Based Trauma Simulation: Self Vs. Expert Assessment of Trauma Team Leadership	IMSH 2017 (accepted)	2/2017	Orlando, Florida	Bentley, S.	Poster
All In A Day's Work: Using Simulation to Improve Workflow and Staff Satisfaction Prior to Re-Opening an Inpatient Obstetrics Unit	IMSH 2016	1/2016	San Diego, California	Bajaj, K., Pohlman, J., Cruz, J., Walker, K.	Poster
Working Memory Limitations	IMSH 2017	1/2017	Orlando, Florida	Meguerdichian, M., Bajaj, K., Kim, R., Walker, K.	Workshop
Train for Special Pathogens: Never Say Never!	IMSH 2017	1/2017	Orlando, Florida	Pohlman, J., Bajaj, K., Kim, R., Meguerdichian, M.,	Panel Presentation
Unit-based Simulation: Steps for Design and Implementation	IMSH 2017	1/2017	Orlando, Florida	Bajaj, K., Meguerdichian, M., Pohlman, J., Walker, K.	Workshop

RESEARCH ACTIVITIES

PUBLICATIONS

Title of Publication	Publication	Authors	Date of Publication
Validating Obstetric Emergency Checklists Using Simulation: A Randomized Controlled Trial	American Journal of Perinatology	Bajaj, K., Rivera-Chiauszi, E.Y., Lee, C., Shepard, C., Bernstein, P.S., Moore-Murray, T., Smith, H., Nathan, L., Walker, K., Chazotte, C., Goffman, D.	2016; 12: 1182-1190 DOI: 10.1055/s-0036-1586118
Working Memory is Limited: Improving Knowledge Transfer by Optimising Simulation Through Cognitive Load Theory	BMJ STEL	Meguerdichian, M., Walker, K., Bajaj, K.	DOI:10.1136/bmjstel-2015-000098
Development of an Emergency Medicine Simulation Fellowship Consensus Curriculum: Initiative of the Society for Academic Emergency Medicine Simulation Academy	Academic Emergency Medicine	Frallicciardi, A., Samreen, V., Bentley, S., Nadir, N., Hart, D., Park, C., Cheng, A., Aghera, A., Moadel, T., Dobiesz, V.	2016, 23(9):1054-60.
Novel Combination of Simulation and Lean Methodology to Improve Operating Room Turnover	BMJ Simulation and Technology Enhanced Learning	Meguerdichian, M., Bajaj, K., Pohlman, J., D'Orazio V., Walker, K., Birnbaum, A.	First: Published Online: 11 January 2017. DOI: 10.1136/bmjstel-2016-000175
Working Memory is Limited: Improving Knowledge Transfer by Optimising Simulation Through Cognitive Load Theory	BMJ Simulation & Technology Enhanced Learning	Meguerdichian, M., Bajaj, K., Kim, R., Walker, K.	July 2016 10.1136/bmjstel-2015-000098
Characteristics of Real-Time, Non-Critical Incident Debriefing Practices in the Emergency Department	The Western Journal of Emergency Medicine	Nadir, N., Bentley S., Papanagnou D., Bajaj, K., Rinnert, S., Sinert, R.	2017 Jan; 18(1): 146-151. DOI: 10.5811/10.5811/westjem.2016.10.31467. Epub 2016 Dec 5.
Development of an Emergency Medicine Simulation Fellowship Consensus Curriculum: Initiative of the Society for Academic Emergency Medicine Simulation Academy	Academic Emergency Medicine	Frallicciardi, A., Vora, S., Bentley, S., Nadir, N., Cassara, M., Hart, D., Park, C., Cheng, A., Aghera, A., Moadel, T., Dobiesz, V.	2016 Sep; 23(9): 1054-60. DOI: 10.1111/acem.13019. PMID:27251553

SYSTEMS INTEGRATION

CORE CURRICULUM

A CLOSER LOOK BY FACILITIES		
Facility	Core Courses Utilized	Number of Staff Engaged
New York Health + Hospitals/Jacobi	13	411
New York Health + Hospitals/Harlem	9	193
New York Health + Hospitals/Woodhull	8	179
New York Health + Hospitals/Lincoln	11	139
New York Health + Hospitals/Bellevue	8	129
New York Health + Hospitals/Coney Island	7	112
New York Health + Hospitals/Kings County	10	97
New York Health + Hospitals/North Central Bronx	9	84
New York Health + Hospitals/Carter	5	80
New York Health + Hospitals/Metropolitan	7	70
New York Health + Hospitals/Elmhurst	4	66
New York Health + Hospitals/Queens	5	40
Grand Total	98	1,609

Key Stats

- All 11 acute care facilities utilized the Simulation Center.
- Top 5 Core Courses (by facility utilization):
 - Central Line Placement
 - Cardiac Code Team
 - Introduction to Debriefing
 - Pediatric Code Team
 - Advanced Airway



LEARNER INSIGHTS

"I'm now more confident with being able to intubate and stay calm in difficult situations. I feel comfortable intubating and am able to establish an advanced airway."

— Advanced Airway course participant

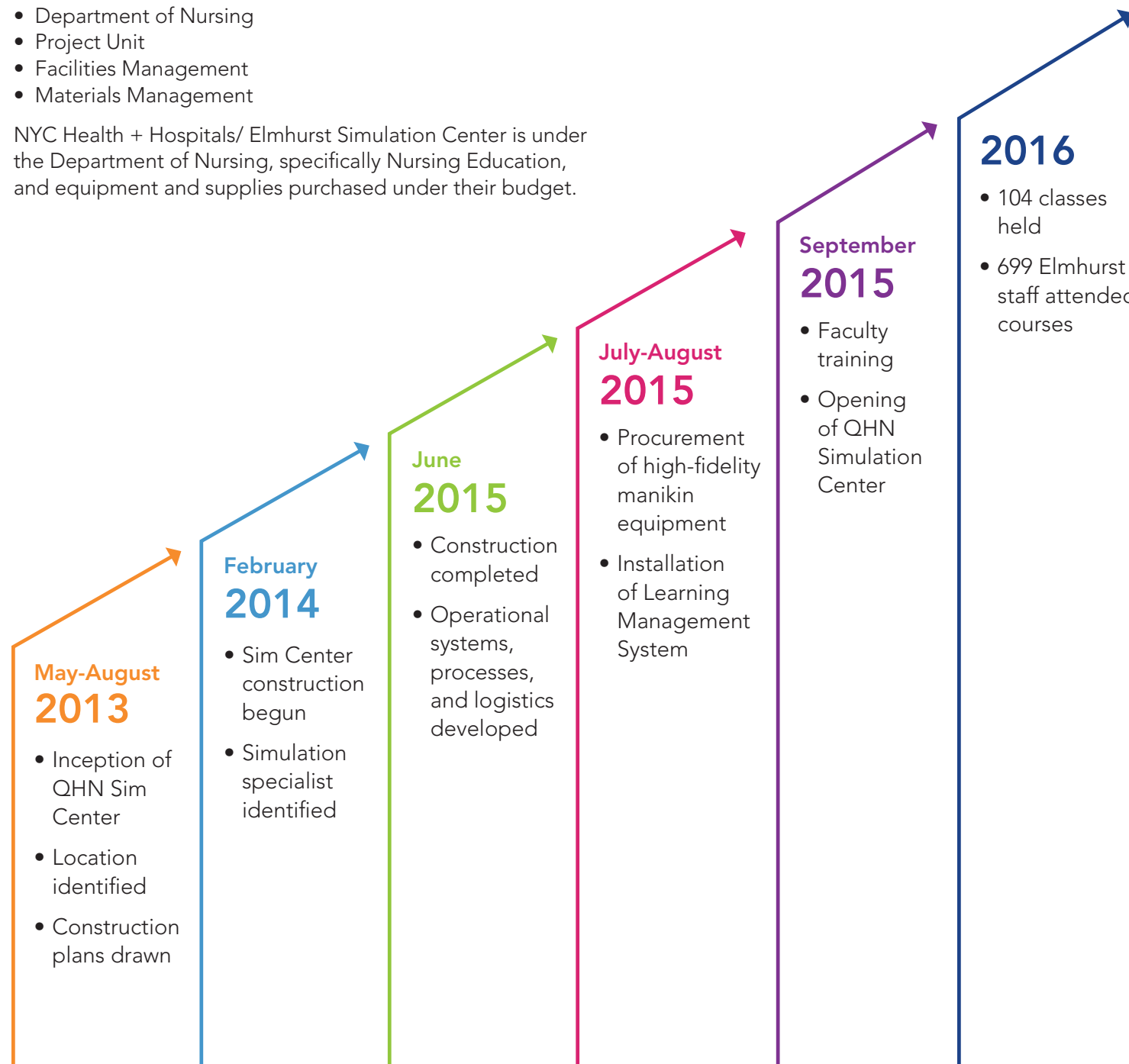
NYC HEALTH + HOSPITALS / ELMHURST SIMULATION CENTER

Background

Completion of the NYC Health + Hospitals/Elmhurst Simulation Center was a collaboration between the following teams:

- Executive Administration
- Chiefs of Services
- Department of Nursing
- Project Unit
- Facilities Management
- Materials Management

NYC Health + Hospitals/ Elmhurst Simulation Center is under the Department of Nursing, specifically Nursing Education, and equipment and supplies purchased under their budget.



SIMULATION CENTER FELLOWSHIP 2016



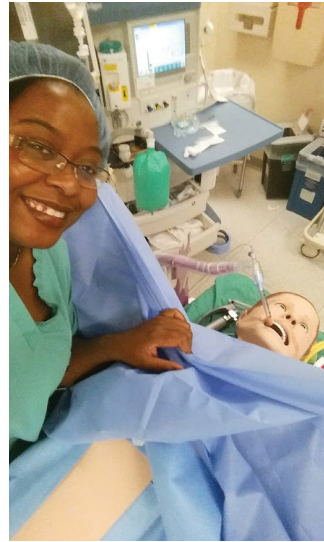
The NYC Health + Hospitals Simulation Fellowship commenced in July 2012. For the first few years the Fellowship was fairly unstructured and physician-focused. There was plenty of hands-on course experience but no formal simulation education sessions on how to develop as a simulation educator. Each year the Fellows graduated having a good grounding in simulation education, but there were certainly holes in the experience.

Starting June 2016, Dr. Michael Meguerdichian was appointed the Director of the Simulation Fellowship program. The goal of the program needed to be shifted to offering the fundamental underpinnings of simulation education.

The Faculty at the Simulation Center worked at developing a curriculum focusing on the elements such as debriefing and curriculum development, among others. This paired with a Fellowship class numbering 13 from all health professions has created an environment ripe for interprofessional development.

An assessment piece was added to monitor progress of the fellows' development to better tailor a program specific to their needs. In addition, international and national speakers from the simulation community of practice have offered new perspectives and directions for the simulation program.

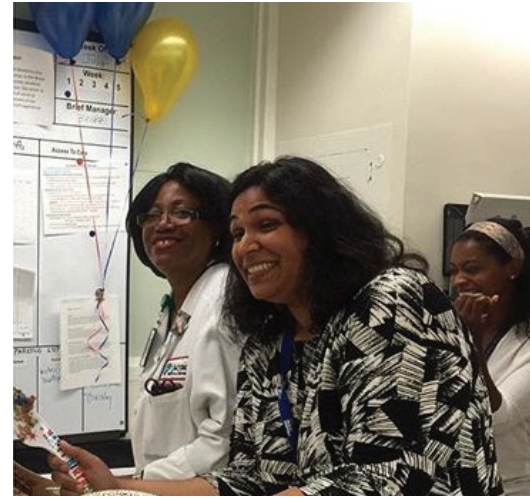
UNIT-BASED SIMULATION



In-Situ Simulation, the deployment of simulation/debriefing within the actual clinical environment, is a robust quality-improvement tool. Interprofessional healthcare teams have the opportunity to practice in their local environments, fostering a culture of collaborative communication and identifying latent safety threats that can be addressed before they impact actual patient care.

The Simulation Center has been integral in the development of a variety of insitu simulation programs across the health system.

Currently, there are 11 in-situ programs spanning a wide range of specialties/practice settings, including obstetrics, emergency medicine, anesthesia, surgical services, internal medicine, and ambulatory care. The programs vary in scope and phase of implementation.

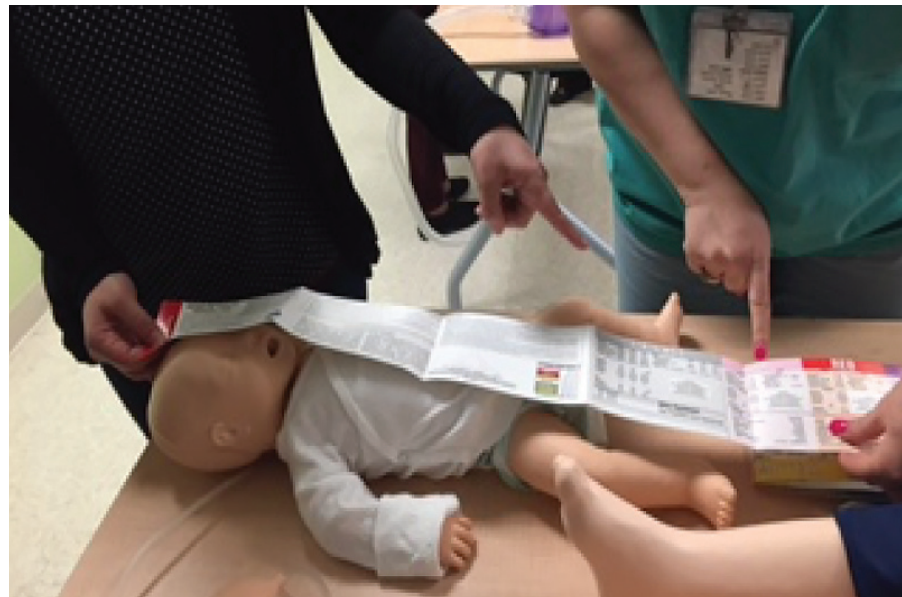


Above is a photo from the NYC Health + Hospitals/ Jacobi Women-Children Insitu Program's Second Birthday Party. The multi-disciplinary staff took time out to celebrate the program's sustained efforts in enhancing healthcare safety.



*Emergency Department
Red Trauma Team
Unit-based - 2016*

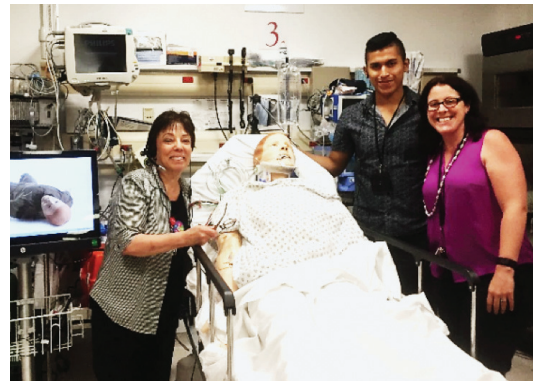




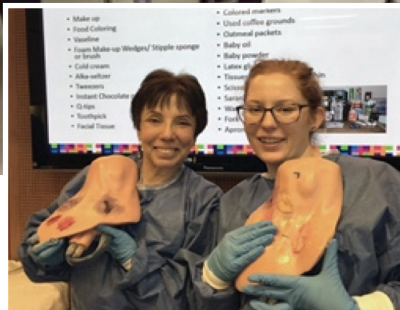
Peds Code Team



Nechama Diamond, PA, STICU Line Team
Central line Insertion



Javier Pintado, our Summer 2016 Volunteer!



Moulage Class



Adult Cardiac Code Team, Suzi Bentley 2016



Simulation Programs

1. Combined sessions with nurses, residents and students focusing on ACLS protocols, change in patient status, and recognizing early signs of deterioration.
2. Physical examination sessions for residents with one-on-one evaluation and feedback.
3. Clinical scenarios which include emergency procedures and management of cardiac arrest by teams of physicians and nurses.
4. Procedural training for physicians with the emphasis on infection control protocols.
5. Conducting ACLS, PALS, BLS and ATLS courses.
6. Airway management classes including difficult airways.
7. Re-enacting clinical cases with unexpected or unfavorable outcomes. All departments are invited to participate. The goal is to reflect on the case, discuss what happened and highlight opportunities for improvement. This process can be used as a strong educational tool to help in prevention of similar outcomes in the future.



NYC Health + Hospitals /Elmhurst Simulation Center Ribbon-Cutting Opening Day: September 14, 2015



NYC HEALTH + HOSPITALS / LINCOLN SIMULATION CENTER

LEARNER INSIGHTS

I'll now be able to help providers with potential missed EBL items, having a better understanding of what to look for and do in these situations.

— Post-Partum Hemorrhage course participant

Background

The idea of the lab at Lincoln started in 2010. Nursing (staff development) purchased an advanced mannequin for nursing education. Shortly after, Medicine and Nursing started doing joint sessions on a regular basis. A fully functioning simulation laboratory opened in 2012.

Structure

The laboratory has two simulation rooms, two conference rooms, one control room, one storage room, six video recording cameras and TVs/desktops/laptops. It is equipped with one wireless adult Sim-Man, Sim-Junior and full audio-visual circuit. It also has multiple mannequins for central line insertion, lumbar puncture, otoscopy and funduscopy.

Goals

1. Train physicians and nurses in managing wide range of emergent medical situations.
2. Using simulation to enhance the ability of physicians and nurses in performing procedures and preventing potential harm to patients.
3. Practice communication skills with health care teams.

SIMULATION COURSES HELD – 2016

Activity	Total # of Sessions January-June 2016	Total # of Trainees January-June 2016	Total # of Sessions July-December 2016	Total # of Trainees July-December 2016
Physical Examination for Residents	16	89	20	102
BLS/ACLS/PALS/ATLS	17	244	21	205
Sessions for Physicians	18	102	8*	47*
Sessions for Students	6	32	6	29
Joint Sessions: MDs and RNs	11	104	7*	68*
MOC Codes on the Floors	10	120	10	115
Central Lines Training	20	114	14	165
Totals	98	805	86	731

* Malfunction of the mannequin requiring repair and leading to interruption of activities

NYC HEALTH + HOSPITALS / ELMHURST FACILITY 2016 STATISTICS

	NYC Health + Hospitals Core Courses Utilized: 6	Elmhurst Facility Developed Courses: 15
Number of Classes Delivered	38	66
Total Participants	227	472
MDs	158	179
RNs	64	139
Med Students	4	24

Course Offerings

- Central Line Maintenance
- Urinary Catheterization, Maintenance, CAUTI
- Mock Code
- Chest Tube Insertion
- Trauma Surgery Roles 3x monthly
- Emergency Department (ED) unit-based Trauma: EM (Emergency Medicine), Surgery, Nursing 2x monthly
- ED unit-based Code Team
- Pediatric Trauma Team Roles
- Red Trauma Readiness Unit-based
- Code Team unit-based
- Neonatal Code Team
- EM Procedures series
- EM: Genitourinary topics Series
- EM: Advanced Video laryngoscopy
- EM: Critical Care Series
- EM: Sepsis identification

Nursing Education Courses in Orientation / Competency SIM-supported / Part-task Trainers:

- Blood product Administration (Albumin, Platelets, FFP RBC)
- Use of Level 1 Rapid Transfuser in Trauma
- IV insertion skills
- Skin and wound care
- Tracheostomy care
- Sepsis Identification
- Peripheral Thrombolysis
- Peripheral blood draw for blood cultures



Courses in Development

- Adult Code for Behavioral Health
- Sonography Using Sonosite
- Sepsis Team
- Verbal De-escalation

Neonatal Code Team 12/2016

Roland Tayaba, MD Director Neonatology and **Liberty Abelido, RN** Nurse Manager, Neonatal ICU



LEARNER INSIGHTS

This training definitely improves our quality of care. I'm seeing fewer problems, better communication and improved morale.

— Introduction to Debriefing course participant

NYC HEALTH + HOSPITALS / HARLEM SIMULATION CENTER

LEARNER INSIGHTS

“Awesome staff. I was made aware of Teamstepps. It helps me to handle situations better, improving patient care.”

— Cardiac Code course participant

In May 2015, the Simulation Center at Harlem located on the fifth floor of the Martin Luther King building officially opened for operations as a collaborative effort with the Harlem Learning Center. Most of the education is delivered by five staff which includes one full time and four part-time Educators.

A large portion of the training was insitu simulations held in the Emergency Department (ED). These simulations have been instrumental in unearthing process issues which are discussed during the debriefing phase of the simulation experience.

An Emergency Department Council meeting was organized composed of the departmental leadership, the clinical staff and the Simulation Center staff to address issues raised through the simulations to improve patient safety and the quality of care. An ED simulation fair was held which showcased simple to complex ED nursing skills stations.

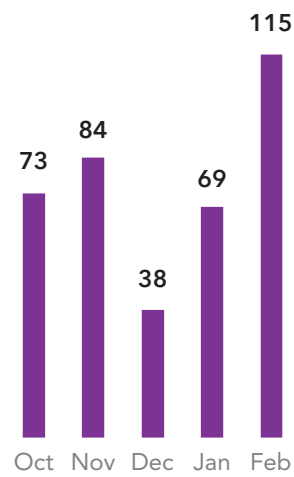


Central Line Placement course

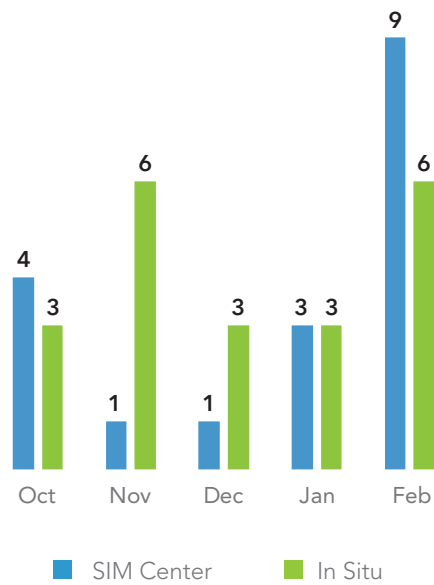
The following activities at the Harlem Simulation Center and In Situ were commenced in 2016:

- Basic Airway: 1-2x/week, ongoing
- ED mock Code: 1-2x/week, ongoing
- Radiology Anaphylaxis Management: 1x/week, ongoing
- Pediatric Department Mock Codes: 1x/month, ongoing
- Crisis Team Training: 1x/month, ongoing
- First 5 Minutes: 1-2x/week, ongoing
- Medical Students Practice Skills: 1x/week, ongoing

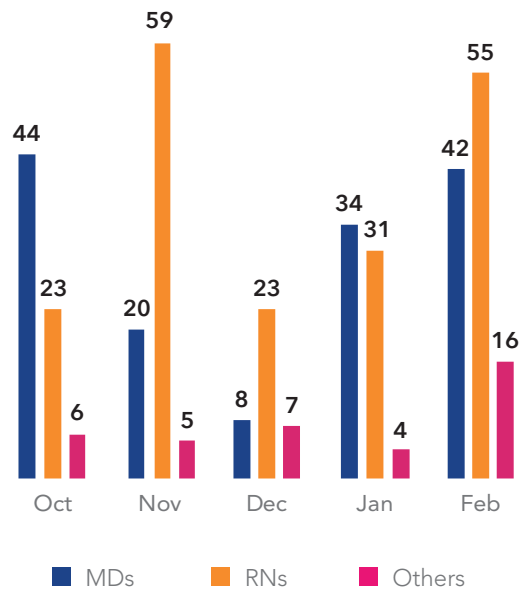
NUMBER OF COURSE PARTICIPANTS



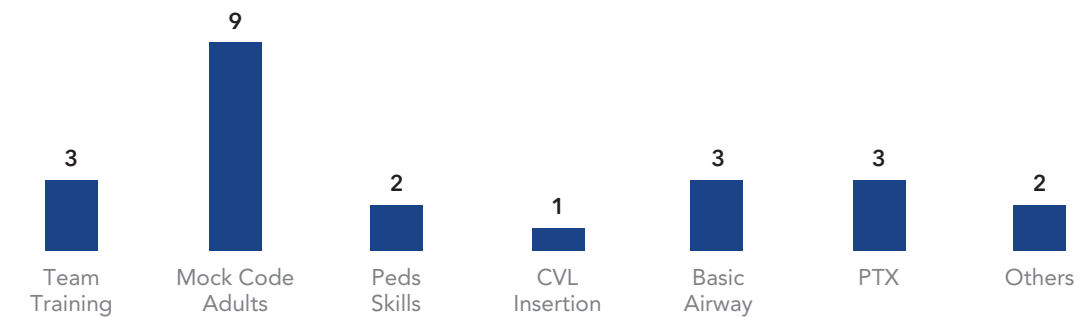
NUMBER OF COURSE PARTICIPANTS



NUMBER OF COURSES BY PROFESSION



NUMBER OF COURSES BY TITLE (OCTOBER - DECEMBER 2016)



NUMBER OF COURSES BY TITLE (JANUARY - FEBRUARY 2016)

