
NEW PROGRAMS, STRATEGIES, AND INNOVATIONS

As part of Team-Up for Better Health, we have initiated several institutional strategies and innovations that are specifically designed to meet our QEP objectives. Several of these have already launched in pilot form as part of our QEP extended roll-out plan, and several will begin in earnest after the official QEP launch date of January 20th, 2017. Below are several of our programs, initiatives, strategies, and innovations that have stemmed from our QEP efforts and that will serve to form the institutional infrastructure in which student learning outcomes will be realized.

Overhaul of IP710 “Transforming Healthcare” Course and IP-Day Curricula

The IP710 Course, which is now a required course for all students at MUSC, will be updated to reflect the aims of the QEP. The Core Curriculum Committee of IP710 (which includes representatives from all degree programs at MUSC) is working to establish a rigorous applied teamwork skills didactic module that will serve as the center-point for the entire course. Students will review literature pertaining to the science of team-science, team-structure, formation and maintenance models, effective communication, conflict resolution skills, collaborative problem-solving models, AHRQ’s TeamSTEPPS® program, and teamwork assessment and evaluation. These elements will also be integrated into an EPIC (our Electronic Medical (and Research) Record; EMR) “playground” that will host several interprofessional clinical and research case-studies to orient students to the EMR while simultaneously teaching high-reliability models of electronic/virtual teamwork and interprofessional communication strategies. This is important as electronic communication is quickly becoming a formative and formidable aspect of healthcare in the 21st century. Simulated patient and research lab experiences will be integrated into this updated teamwork module as well. Students will act as interprofessional teams of clinicians and researchers to address pressing real-world issues pertaining to common healthcare and research challenges to communication, conflict resolution, and collaborative problem solving principles commonly encountered in the real world. Students will be required to pass a written knowledge examination pertaining to key elements of the didactic module. Performance in the EMR and simulation scenarios will be evaluated by course preceptors as well using the MUSC Teamwork Performance Evaluation scale(s).

Students will also be required to demonstrate reliability and accuracy as a teamwork evaluator using the TeamSTEPPS® Team Observation Tool to rate simulated healthcare and research team interactions. They will be required to accurately rate team performance in 4 standardized video-taped patient care and research scenarios. To determine accuracy of ratings, a team of TeamSTEPPS®-trained expert faculty raters will evaluate the standardized scenarios and students must produce ratings that fall within one-standard-deviation of the expert ratings mean scores. All students successfully completing IP710 will have training and experience evaluating teamwork in the healthcare setting using a valid and reliable tool, and will have passed a standardized test of their accuracy in team assessment.

We have piloted this system in preparation for the QEP. See section on the TeamSTEPPS® Rater-Certification system.

Interprofessional Day (IP-Day) occurs on the second Friday of January each year and all first and second year students from all six colleges attend

together. Historically, invited keynote speakers presented on topics related to interprofessional education and practice, and students engaged in break-out-session activities in small groups to learn about each other’s professions and roles. Going forward, keynote speakers will be invited representing

This Strategy Addresses:

- Objective 1a: Develop and implement applied teamwork skills curricula in formats designed to reach all students at MUSC*
- Objective 2a: Teach fundamentals of teamwork to all students at MUSC*
- Objective 2b: Engage student teams in simulated scenarios to further develop and practice teamwork skills*

content areas pertaining to teamwork, team science, and other QEP-related topics. The break-out session for first year students will engage them in a computerized teamwork simulation game that teaches about different health professions while demonstrating the value of team-based care and research (see section on the *IP Health Simulation Game*). Second year students form interprofessional teams and engage with simulated patients around communication and collaborative problem-solving in the context of disclosing medical error(s). MUSC Teamwork Performance Evaluation scale(s) ratings will be conducted by small-group preceptors on all students.

Educate Faculty & Staff about TeamSTEPPS Principles via MyQuest

In April of 2015, MUSC selected Net Dimensions Talent Suite to be our new product for our employee learning management system. We have since achieved successful adoption of the learning management system (called MyQuest) for our more than 19,000 faculty, staff, and students. We focused on improving our educational content by meeting with subject matter experts for content validation and using newly purchased eLearning templates from Net Dimensions for content design.

MyQuest is used at MUSC to deliver educational content and evaluate learner knowledge across all mandatory annual training topics for faculty, staff, and students, but can also be used by learners to develop individualized elective training curricula in areas of unique interest to individuals at MUSC.

This Strategy Addresses:

-Objective 1b: Improve staff/faculty knowledge, skills and practice models to develop a richer environment in which team-based care training will occur in clinics and labs

Angela Egner (Medical Center's Chief Learning Officer and OII's Associate Director for Hospital Integration) will continue to work with OII to develop a required MyQuest module for all faculty and staff to learn principles of TeamSTEPPS®, communication strategies, collaborative problem-solving, and conflict-resolution skills in order to facilitate an institutional clinical care and research environment (and by extension, a student-learning-environment) conducive to high-quality teamwork principles in action. Additionally, building upon a foundation of high-reliability trainings for all medical center staff, Angela Egner will assist OII in developing targeted teamwork skills training modules for faculty and staff on select hospital and research units (via our TeamWorks program, see below) to further enhance the institutional foundation of collaborative teamwork skills in our real-world, operational, clinical, and research settings. These trainings will cover the basics of our QEP and TeamSTEPPS® model, and will, by far, have the greatest reach as we will use this platform to educate all of our 19,000+ faculty, staff and students at MUSC.

SCTR Science of TeamScience Small Grants Program

We will continue to engage faculty, students, and staff in contributions to the scientific literature surrounding best-practices and the value of teamwork through an intramural, investigator-initiated grant funding mechanism. South Carolina Translation Research (SCTR) Institute and the MUSC Office of Interprofessional Initiatives have developed and implemented a Team Science and Interdisciplinary/Interprofessional (IP/ID) Collaborations Small Grant Program. The purpose of this program is to promote the science of team science while enhancing interdisciplinary and interprofessional (ID/IP) collaboration to investigate the impact of teamwork on scientific productivity, patient safety outcomes, translational research, education, training, and clinical care. Team science initiatives are designed to promote collaborative, and often cross-disciplinary approaches to answer research questions that focus on understanding and enhancing the antecedent conditions, collaborative processes, and outcomes associated with team science initiatives. These initiatives incorporate scientific discoveries, educational, training, and clinical outcomes, and translations of research findings into new practices, patents, products, technical advances, and policies. Through the scholarly scientific

This Strategy Innovation Addresses:

-Objective 1b: Improve staff/faculty knowledge, skills, and practice models to develop a richer environment in which team-based care training will occur in clinics and labs

work of our own faculty we will continue to update our knowledge and understanding of the impact of teamwork on clinical and research outcomes, thereby enhancing the demonstrated value of our QEP. A pilot competitive RFA was released in Spring of 2016 in preparation for the QEP. Seven applications were submitted and 2 Team-Science projects were funded.

Develop & Maintain an Inventory of Student Team-Skills & Learning Experiences

The QEP committee sought to implement an innovative strategy for engaging all students in applied teamwork activities during their education at MUSC. The group developed an idea for the creation of an Applied Teamwork Competency Portfolio System that would serve as: 1) a menu of applied teamwork training opportunities available to students at MUSC, 2) a system for submitting new applied teamwork opportunities by students and faculty alike, 3) a program for the evaluation of the educational value and classification of the proposed activities in the menu, 4) a system for tracking faculty preceptor evaluations of students' applied teamwork skills, and 5) a portal for students to track and display their applied teamwork competencies for use in bolstering their curriculum vitae thereby enhancing the value and marketability of MUSC students as they enter the growing interprofessional healthcare workforce.

This web-based system has been developed and implemented in pilot-form in preparation for QEP implementation. Students can view a comprehensive menu of OII approved and categorized Applied Teamwork Competency (ATC) opportunities available to them. They can view detailed information about the activities, and register for ATC's online. Upon completion of the activity, the designated faculty preceptor for the ATC completes an evaluation of the students' teamwork skills using MUSC's Team Performance Scale (TPS) which was custom-developed using the TeamSTEPPS framework.

This Strategic Innovation Addresses:

Objective 1c: Increase the institutional capacity for students from different colleges and professions to work together during clinical training and research experiences at MUSC

Objective 2b: Engage student teams in simulated scenarios to further develop and practice teamwork skills

Objective 2c: Improve applied teamwork skills through enhanced opportunities in real-world clinical practice and laboratory experiences

Objective 2d: Catalog applied teamwork activities at MUSC and track student participation and performance in them over time

Applied Teamwork Competencies

OII Student Experience Qualification Rubric

APPLICATION LEVEL QUALIFIER

i. Real world application

(real world healthcare, research project, patient or community team experience)

ii. Simulated, role-played or standardized application

(simulated healthcare, research project, patient or community team experience)

iii. Didactic, classroom, or hypothetical case-based application

(didactic healthcare, research, patient scenario or community team experience)

CATEGORIES

Category A (i, ii, or iii): Applied Clinical Interprofessional Team Experience

- (1) Participate in clinical service delivery (with appropriate supervision) on a treatment team consisting of at least 3 different health professions working together
- (2) Minimum of 12-hours
- (3) Completion of appropriate Team Performance Evaluation (TPE) scale or OII-approved metric

Category B (i, ii, or iii): Applied Teamwork Assessment Experience

- (1) Complete at least 6 standardized behavioral observations/evaluations of team interactions on clinical, research or administrative teams using the TeamSTEPPS Team Performance Observation Tool (TPOT)
- (2) Complete a 1-page summary report of the quality of teamwork observed

Category C (i, ii, or iii): Applied Quality Improvement Team Experience

- (1) Participate as a team member on a performance improvement, quality improvement, root cause analysis or value-initiative project
- (2) Attend a minimum of 75% of project-specific meetings
- (3) Document the professions represented on the QI team and provide a 1-page QI project summary
- (4) Completion of appropriate Team Performance Evaluation (TPE) scale or OII-approved metric

Category D (ii, or iii): Formal Course or Academic Applied Teamwork Experience

- (1) Passing grade in an approved IP team-skills elective or required course
- (2) Participate in an organized, applied team activity as part of the course curriculum
- (3) Completion of appropriate Team Performance Evaluation (TPE) scale or OII-approved metric

Category E (i, ii, or iii): Interprofessional Organization and Applied Service Learning Experiences

- (1) Participation in approved interprofessional program or service learning activity focusing on interprofessional teamwork approaches
- (2) Minimum of 12-hours
- (3) Completion of appropriate Team Performance Evaluation (TPE) scale or OII-approved metric

Category F (i, ii, or iii): Applied Interprofessional Research Team Experience

- (1) Participate in at least 6 research lab meetings with members representing at least 3 disciplines
- (2) Completion of appropriate Team Performance Evaluation (TPE) scale or OII-approved metric

Category G (i, ii, or iii): Applied Interprofessional Global Health Initiative Experience

- (1) Participate in a MUSC Center for Global Health student activity (with appropriate supervision) on an implementation team consisting of at least 3 different health professions
- (2) Minimum of 12-hours
- (3) Completion of appropriate Team Performance Evaluation (TPE) scale or OII-approved metric

Students and faculty can submit applications for new activities and opportunities for consideration as new ATC's directly through the system. An ATC working group has been formed to review the applications and apply our ATC Qualification Rubric. Qualified experiences will be added to the ATC menu. Qualified programs that are already integrated into College level curricula will automatically populate in each student's portfolio. Elective approved ATC experiences can be added directly by the student. Students can export their ATC portfolios in a variety of formats for reporting their progress to academic advisors and/or to create an Interprofessional Applied Teamwork Competency section for their academic vitas. Several clinical and research experiences offered at MUSC have already been qualified by the QEP committee using the ATC Qualification Rubric. These programs have all been determined to meet the requirements necessary to afford students with excellent applied teamwork skills training and the Team Performance Scale rating system has been integrated into the programs to permit demonstration of students' teamwork competencies.

MUSC's new ATC Portfolio system will serve as an innovative platform for connecting students from all six Colleges at MUSC with outstanding, career-relevant applied interprofessional teamwork experiences at MUSC. The ATC system features an interactive menu of MUSC-approved applied teamwork activities that students can browse, learn about, and register for online. This system will be available to all in-residence students as well as our on-line learners. We offer several fully online IP courses at MUSC and ATC-qualifying online courses will be registered in the ATC Portfolio system just like the residential opportunities. We anticipate qualifying numerous off-site team-based applied opportunities for students as well, and the system is capable of prompting off-site (non-MUSC) preceptors to evaluate on-line students' teamwork skills in the same way it works to capture ratings of our residential students.

Qualifying Applied Teamwork Competencies New ATC experiences can be submitted by MUSC students and faculty alike, any time going forward, through the ATC system. The ATC working group consisting of program coordinator representatives from each College reviews the applications and applies the ATC Qualification Rubric to the applications. ATC experiences can fall into 1 of 7 different categories along with an Application Level Qualifier (e.g., real-world application vs simulation vs didactic/case-based experiences), and certain minimum experience criteria must be met within each category for a proposed activity to qualify. Once an activity has been evaluated and qualified by the ATC working group, the experience is added to the published ATC menu for all to see and register for online. Qualified programs that are already integrated into College level curricula will automatically populate in each student's portfolio. Several programs have already been qualified and appear in the ATC Portfolio System.

Evaluating Student Learning

Each qualified ATC experience requires that a faculty preceptor will evaluate student performance during the teamwork activities. The MUSC QEP Committee has developed a six-item rating scale based on the TeamSTEPPS® framework using the TeamSTEPPS® Team Performance Observation Tool (TPOT) as a guide. The MUSC scale is called the Team Performance Evaluation (TPE) and the six item-stems have been modified to yield several applicable versions: 1) Student evaluation of team performance, 2) Student evaluation of preceptor teamwork skills, 3) Student evaluation of peer/team-member teamwork skills, 4) Student evaluation of self, 5) Preceptor evaluation



Applied Teamwork Competencies Portfolio

Jane Smith
College of Pharmacy
Pharm.D. Program
Class of 2020

Below is a summary of Jane Smith's applied interprofessional teamwork experiences acquired during her education at the Medical University of South Carolina (MUSC). MUSC highly values interprofessional training and healthcare-related teamwork experience, and seeks to graduate students with exceptional skills in applied clinical and scientific research teamwork. Jane Smith's applied teamwork skills were evaluated using the American Association for Colleges and Universities (AACU) Teamwork VALUE rubric for each experience and/or program listed below, and she has successfully completed all of them.

IP710 Course: Transforming Healthcare – Fall, 2016

The course goal is to lay the foundations for professions students to understand the complexities of the health care system and the role of interprofessional collaboration to improve the system. Through an interprofessional context, students explore the art and science of teamwork and communication skills, cultural competency, ethical issues, healthcare disparities and social determinants of health.

Interprofessional Day for First-year students – Spring 2017

On the second Friday in the spring semester for MUSC, over 1500 students, faculty, and staff come together to participate in an annual event for all first and second year students designed to establish a culture of collaborative teamwork and improve patient care and safety. The Interprofessional Day event reinforces the link between collaborative teamwork and improved patient care and safety. The year-one students participate in an activity that fosters awareness of the other professions and the value of interprofessional teamwork.

Interprofessional Day for Second-year students – Spring 2018

Second-year students also attend IP-Day in the Spring semester. However, second-year students participate in an interprofessional teamwork activity that emphasizes the importance of team communication when facing difficult situations in healthcare and science.

Simulated Interprofessional Rounding Experience – Spring 2019

Interprofessional student teams consisting of pharmacy, medical, and physician assistant students participated in a simulated interprofessional rounding experience in which they provided comprehensive medical care for a simulated patient in an inpatient setting.

of team performance, 6) Preceptor evaluation of student/team-member teamwork skills, and 7) Consumer (e.g., patient) evaluation of team performance. The first 5-items of the TPE directly map onto the 5 principle domains of TeamSTEPPS®: 1) Team-structure/roles and responsibilities, 2) Communication skills, 3) Team leadership skills, 4) Situation monitoring, and 5) Mutual support. The Likert ratings are behavioral-frequency anchored to enhance the degree to which ratings represent observed behaviors rather than purely subjective agreement with statements. Item-six (“I want this individual on my team” – “Yes or No”) was added as a simple, real-world qualifier to prompt specific comments about a team-member’s suitability to operate on a team. This rubric is designed to function across all of these different settings. The set of measures available to students, faculty, and preceptors permits 360° evaluation of teamwork skills and competencies of clinical, research, and educational activities at MUSC.

When a student registers for an ATC experience, the identified preceptor receives a reminder email describing the teamwork behaviors of interest and a weblink to the online TPE measure that is uniquely tied to the registered student. Student rating data are housed in the ATC system and can be accessed by students, preceptors, and program coordinators with appropriate centrally-granted security-access. Additionally, this TPE item-set will be added to the institutional question-bank in E*Value (MUSC’s primary system for student and preceptor course evaluation) so

that ALL courses at MUSC that have direct relevance to Team-Up for Better Health goals can easily implement the TPE metric with minimal work or logistical complication.

Each year, all TPE data will be analyzed to determine psychometric properties and psychometric performance. We will examine reliability and validity indices and make modifications to the scale as necessary to optimize reliability and validity. Upon establishment of satisfactory psychometric performance, we will publish the scale for others to use.


Student Value of the ATC Portfolio

Students will be able to access their Applied Teamwork Competency Portfolios at any time and can format reports for use in reporting to their Colleges and program coordinators as well as for use in their curriculum vitas as a section highlighting their experience and performance with respect to applied teamwork competencies. In today’s healthcare job-market where increasing value is placed on interprofessional teamwork competencies, this section can be used to help MUSC graduates stand-out among other job and residency applicants.

ATC Experiences Already Approved

MUSC Team Performance Evaluation					
<i>Evaluation of Team-Member Performance by Observer/Preceptor</i>					
Please evaluate the performance of the individual team-member by checking the boxes below that best represent your observations and experiences related to each item.					
	Never	Rarely	Sometimes	Frequently	Always
1. The individual fulfills his/her roles and responsibilities as a member of the team.					
2. The individual’s communications are valuable and reflect the use information from a variety of sources.					
3. The individual serves as a role model for the team.					
4. The individual helps make the team aware of the need for actions and resources.					
5. The individual shares constructive feedback with the team members.					
	Yes		No		
6. I want this individual to be a member of my team.					
Why or Why Not?					

In preparation for the QEP implementation, several Applied Teamwork Competency experiences have already been approved and categorized by the ATC working group. These competencies appear on the ATC Portfolio System menu. Many of these experiences represent activities that have been established at MUSC. Those that are part of College curricula or are required activities auto-populate in students' portfolios. Several identified activities at MUSC will likely qualify and will be reviewed and added, as appropriate, as the ATC Portfolio System gets rolled-out during our QEP. The currently approved experiences are listed below:

 Applied Teamwork Competency System					
TEAM UP FOR BETTER HEALTH					
Logged in as: Jeffrey Borkardt					
My Profile	My Portfolio	ATC Menu	Evaluations	Reports	
SUBMIT A NEW MUSC IP ACTIVITY FOR THE MENU					
IP Program	Description	Category	Semesters	Eligible Colleges	
IP 710 TeamSTEPPS Pilot	Students will learn the major components of TeamSTEPPS, an evidence-based set of teamwork tools, aimed at optimizing patient outcomes by improving communication and teamwork skills among health care professionals. In this course you will conduct a 5-hour observation in a select unit of the hospital implementing this practice. You will receive a certificate of completion of TeamSTEPPS.	Category-D: Applied Teamwork Course	-Fall -Spring	Dental Medicine Graduate Studies Nursing Health Professions	More Info
IP 710 Healthcare Improvement Pilot	This course is intended for students who want to learn how to improve population health by exercising leadership to engage others. Participants will learn about improvement science, leadership, and community organizing and and apply this knowledge in field-based projects as the cornerstone component of the Institute for Healthcare Improvement Open School Change Agent Network (I-CAN). Projects are focused on access to care, clinical care, social determinants of health, and health behaviors. You have the opportunity to receive a certificate of completion from the Institute for Healthcare Improvement.	Category-D: Applied Teamwork Course	-Fall	Dental Medicine Graduate Studies Nursing Health Professions	More Info
Hospital-Based QI Project	Our division is currently seeking students to assist with a quality improvement project to improve discharge in our unit. We would be interested in having an interprofessional group of students to assist with implementing a new discharge process.	Category-C: Quality Improvement Team	-Fall	Medicine Dental Medicine Graduate Studies Pharmacy Nursing Health Professions	More Info
Palliative Care Program	The Palliative Care Program has developed an interprofessional clinical rotation for MD, PA, MHA, OT, and NP students in the palliative care setting. Students will learn together and work directly with the current interprofessional team which includes APNs, Social Workers, Physical and Occupational therapists, Chaplains, and Volunteers.	Category-A: Clinical Team Experience	-Fall -Spring -Summer	Medicine Nursing Health Professions	More Info
Interprofessional Ageing in Place Program	The Ageing in Place (AIP) pilot has developed a new community-based clinical rotation for PT, PA, and nursing students at a local low-income elderly living facility. The rotation will introduce the interprofessional team of students to aging in place and the barriers many residents face; tele-health, and collaborative approaches for addressing medical issues and health behaviors.	Category-A: Clinical Team Experience	-Fall -Spring	Nursing Health Professions	More Info
Interprofessional Team-Based Comprehensive Pain	An interprofessional student rotation focussing on comprehensive pain management through the Division of Biobehavioral Medicine in Psychiatry. Our patient population is mainly comprised of patients with chronic noncancerous (non and most common) pain.	Category-A: Clinical Team Experience	-Fall -Spring	Medicine Pharmacy Nursing Health Professions	More Info

Program	ATC Type	Preceptor	Required	Auto-Enroll
Presidential Scholars	Category-E _i	Dr. Breland	No	No
IP-710 Course and Pilot Sections	Category-D _{iii}	Dr. Bailey	Yes	Yes
Simulated Interprofessional Rounding Experience	Category-A _{ii}	Dr. Kern	Varies by College	Yes
Comprehensive Pain Management Program	Category-A _i	Dr. Barth	No	No
IP-754: Fundamentals of TeamSTEPPs (TeamWorks)	Category-B _i	Dr. Mauldin	No	Yes
Interprofessional Day Participation	Category-D _{ii}	Dr. Mauldin	Yes	Yes
C.A.R.E.S. Clinic	Category-A _i	Dr. Williams	Varies by College	Yes
Root Cause Analysis (RCA) Roundtable	Category-C _i	Dr. Egner	No	No
DART Summer Research Program	Category-F _i	Dr. Back	No	Yes
CLARION Competition	Category-E _{iii}	Dr. Wise	No	Yes
The Palliative Care Program	Category-A _i	Mr. Coyne	No	Yes
Interprofessional Aging in Place Program	Category-A _i	Dr. VanRavenstein	No	Yes
Interprofessional Team-Based Comp. Pain	Category-A _i	Dr. Barth	No	Yes
Primary Care and Population Health PCMH	Category-A _i	Dr. Schreiner	No	Yes

IP Teamwork Simulation Game

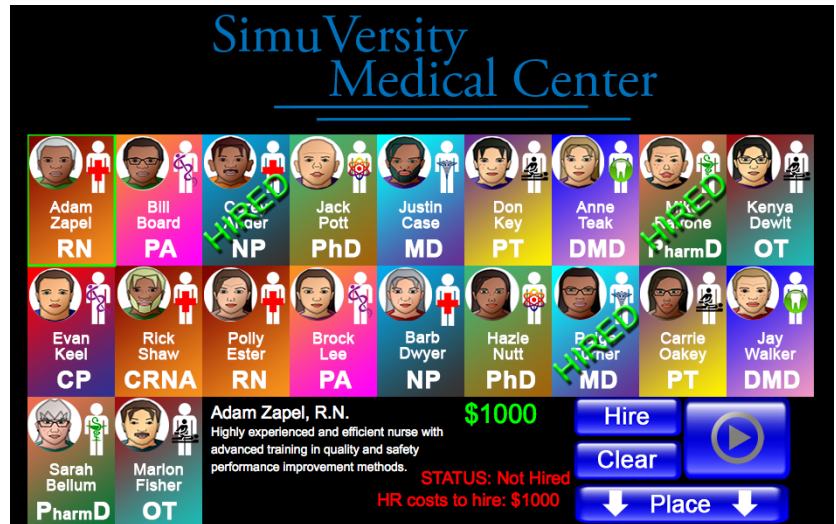
MUSC's SimuVersity Medical Center game was designed and developed by OII to engage students and faculty preceptors from different professions in the process of developing and managing an academic healthcare system work force in order to meet the following learning objectives:

- 1) Know several students from another profession and college by working together on a team
- 2) Be able to describe how the different professions can be integrated into health systems to optimize health, wellness and overall system success
- 3) Be able to identify key indicators health system administrators use to evaluate the overall success of a health system including finances, patient satisfaction, patient safety, research activity, and clinical outcomes
- 4) Be able to identify healthcare personnel factors that influence these key indicators including: team collaboration, research productivity, visit efficiency, interpersonal skills, performance improvement, and quality improvement training, etc.

This program was developed during our QEP planning stages to help engage students from all six Colleges at MUSC during Interprofessional Day in a novel and fun way as well as to meet the learning objectives outlined above. The game is an animated, interactive, online simulation that allows students to develop their own academic medical center. They determine their clinical focus, name their system, and hire virtual staff to meet their clinical and research needs. The game runs an eight-week simulation of the operation of a virtual medical center and each simulated week, student teams examine the performance of their faculty and staff across several key indicators (e.g., patient satisfaction, research productivity, patient safety, outcomes, and finance). They can make changes to the staff each week as well as invest in trainings for their faculty and staff such as: teamwork and communication training, safety and performance improvement training, and evidence-based practice. All of these decisions impact the performance of the virtual organization each week.

During Interprofessional Day at MUSC, first-year students engage in the simulation game and a campus-wide competition is held in real-time. Interactive

leaderboards update in real-time displaying the highest performing virtual health systems across several categories including: Best Patient Satisfaction, Best Safety Record, Best Clinical Outcomes,



Training and weekly activity options:

***NOTE: Trainings only benefit staff that you've already hired. Actions here are applied immediately and cannot be undone or repeated.

- Add** Safety & Performance Improvement Training (\$1500)
- Add** Teamwork and communication training (\$1500)
- Add** Evidence-based practice training (\$1500)
- Add** Clinical efficiency workshop (\$1500)
- Add** Weekly case conference (\$200 in opportunity cost per week)
- Add** Weekly grand rounds (\$200 in opportunity cost per week)

Cash on hand: \$1216

***NOTE: Trainings only benefit staff that you've already hired. Actions here cannot be undone or repeated.

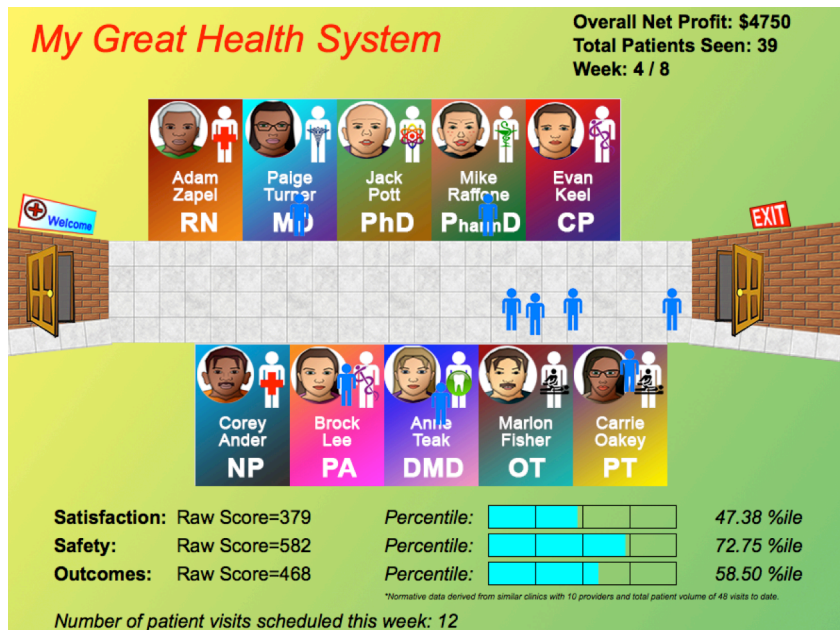
Close

This Innovation Addresses:

- Objective 2b: Engage student teams in simulated scenarios to further develop and practice teamwork skills
- Objective 1b: Improve staff/faculty knowledge, skills and practice models to develop a richer environment in which team-based care training will occur in clinics and labs

Most Profitable, Highest Research Productivity, and Overall Best System. The winning teams are given certificates of achievement in their specific areas of excellence.

Students form teams of four representing different professional backgrounds and degree programs. The team must work together to name, staff and run their virtual health system. During our pilot of this new program, 242 interprofessional teams of first-year students (968 total students)



competed. Student ratings of the activity's success in meeting each of the learning objectives suggest that the pilot was a success--95% agreed that the program as successful in helping them know several students from other professions and colleges; 94% indicated that, after the activity, they were able to describe how the different professions can form teams that are integrated into health systems to optimize health, wellness, and overall system success; 95% indicated that they were able to identify key indicators health system administrators use to evaluate the

overall success of a health system including finances, patient satisfaction, patient safety, research activity and clinical outcomes; and 94% indicated that they were able identify healthcare personnel factors that influence key indicators including: team collaboration, research productivity, visit efficiency, interpersonal skills, performance improvement, and quality improvement training.

Based on data collected during the pilot, the program has been updated, improved, and is now available commercially for purchase by other institutions that wish to use it as an interprofessional teamwork learning tool. MUSC will continue to use SimuVersity Medical Center as a fun way to engage first-year students from all 6 Colleges in a team-based activity that will help them learn with, from, and about each other.

MUSC TeamSTEPPS Rater Assessment System

Name: Jeff Borckardt
Preceptor: MAULDIN
Logged-in As: borckard@musc.edu



TeamSTEPPS Rater-Certification System

With the emphasis on the development of students' applied teamwork skills in our QEP, we have developed a system to engage students in a unique aspect of teamwork in healthcare. Being part of a high performing team requires that one is able to recognize and critically evaluate team structure, functioning,

communication, leadership, and mutual support, thereby identifying areas that can be improved. In order to maximize the efficiency and validity of student team-evaluation skills, the TeamSTEPPS® Rater-Certification System was developed by our team.

This Innovation Addresses:

- Objective 2a:*** Teach fundamentals of teamwork using the TeamSTEPPS framework to all students at MUSC
- Objective 2b:*** Engage student teams in simulated scenarios to further develop and practice teamwork skills

After undergoing formal didactics in TeamSTEPPS® concepts and practices, students at MUSC engage with our online certification system to demonstrate their teamwork evaluation skills. Our group identified four videos of healthcare team interactions. We then asked TeamSTEPPS expert raters to evaluate each of the videos and score them using the standardized TeamSTEPPS® 2.0 Team Performance Observation Tool. Mean scores (and standard deviations) were calculated for the expert raters across each of the rated domains (team structure, communication, leadership, situation monitoring, mutual support). In the TeamSTEPPS® Rater-Certification System, students log-in to and view each video. After each video has been viewed, students complete an online version of the TeamSTEPPS 2.0 Team Performance Observation Tool. Students must score each video within one standard deviation of the expert raters across at least four of the measured domains. After the student submits his/her scores

Performance feedback screen...

MUSC TeamSTEPPS Rater Assessment System

Your Performance on Video-A

Factor	Your Mean Score	In range
Team Structure	1.50	YES
Communication	1.75	YES
Leadership	1.33	YES
Situation Monitoring	1.60	YES
Mutual Support	1.50	YES
OVERALL PERFORMANCE		PASS

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the system provides immediate feedback of his/her performance relative to the expert ratings. If he/she does not “pass” the rating for a video, he/she can watch the video and try again. Once a students has passed all of the videos, he/she is eligible to participate in projects through our hospital wherein he/she provides ratings of real-world, active clinical service teams in action through our TeamWorks program (see below). To date, 678 students have successfully completed the TeamSTEPPS® rater-certification program through pilot sections of IP710 at MUSC. These students have gone on to evaluate team performance across several clinical programs including labor and delivery and interventional radiology through the TeamWorks Program.

Example of the “passing” range(s) from the expert raters.

VIDEO A

	Team Structure	Communication	Leadership	Situation Monitoring	Mutual Support
MISS	<1.29	<1.31	<1.26	<1.29	
ACCEPTABLE	1.29	1.31	1.26	1.29	1.00
TARGET	2.21	1.75	1.93	1.84	1.35
ACCEPTABLE	3.13	2.19	2.61	2.39	1.84
MISS	>3.13	>2.19	>2.61	>2.39	>1.84
Rater's Mean Score:					
Circle:	Acceptable / Miss	Acceptable / Miss	Acceptable / Miss	Acceptable / Miss	Acceptable / Miss

☐ PASS (≥ Acceptable Ratings)
☐ FAIL (<4 Acceptable Ratings)

VIDEO B

	Team Structure	Communication	Leadership	Situation Monitoring	Mutual Support
MISS	<4.02	<4.48	<4.32	<3.82	<3.79
ACCEPTABLE	4.02	4.48	4.32	3.82	3.79
TARGET	4.53	4.85	4.80	4.48	4.53
ACCEPTABLE	5.00	5.00	5.00	5.00	5.00
MISS					
Rater's Mean Score:					
Circle:	Acceptable / Miss	Acceptable / Miss	Acceptable / Miss	Acceptable / Miss	Acceptable / Miss

☐ PASS (≥ Acceptable Ratings)
☐ FAIL (<4 Acceptable Ratings)

Team-Up for Better Teaching

This new program is being developed in collaboration between the Office of Interprofessional Initiatives and MUSC’s Apple Tree Society. This faculty development program specifically seeks to bring together educators from all Colleges at MUSC with the goal of improving teaching methods and practices in an interprofessional team setting. Faculty in the program will meet

This Innovation Addresses:

Objective 1b: Improve staff/faculty knowledge, skills and practice models to develop a richer environment in which team-based care training will occur in clinics and labs

weekly to attend lectures and seminars on advanced teaching methods, technologies, and skill-development as well as learn about teamwork strategies and principles relevant to TeamSTEPPS® and Team-Up for Better Health. Additionally, each faculty member in the program will present a lecture on a topic of his/her choice and receive feedback from the team of other program members on ways to enhance the impact of teaching approaches. Faculty completing the program will receive a certificate of completion and will serve on the Board of Directors for the next annual program iteration. Participation in the program is competitive, and interested faculty must apply as well as provide a letter of support from their Department Chair. The program Board of Directors selects faculty participants.

Faculty-Driven IP Teamwork Clinical Rotations Development Program

An innovative approach to creating new opportunities for students to gain applied teamwork skills in real-world clinical settings was piloted in preparation for our QEP, and will continue through the

first 3 years. MUSC's Office of Interprofessional Initiatives solicits faculty-involvement in the creation of new interprofessional team-based clinical training opportunities. This is a competitive RFP and funding is made available (up to \$15K for the first 12-months) to select proposals to support the implementation and evaluation of new clinical educational experiences. This program seeks primarily to create new interprofessional training opportunities for students at MUSC. Funding can be used to seed faculty involvement, facilitate logistical problem-solving, offset costs associated with increased initial load on preceptors, and to support program evaluation. The proposal must include a viable plan for program sustainability after the award period. Eligible proposals must follow guidelines outlined below.

Program Information and Criteria:

- 1) Must include students from **3 or more** different professions providing direct patient care
- 2) Must introduce **new** rotation options for students (i.e., can't be used to support existing rotations)
- 3) Must include a metrics and evaluation plan to examine factors such as:
 - a. Student learning outcomes
 - b. Clinical efficiency/health economics
 - c. Teamwork skills development
 - d. Financial/clinical-revenue impact
 - e. Patient outcomes and safety impact
 - f. Patient and staff satisfaction impact
- 4) Must include a plan to coordinate clinical rotation experiences with rotation schedules and accreditation requirements of involved Colleges/professions (e.g., through Associate Deans for Education)
- 5) Must include a viable plan for rotation financial independence and sustainability after the award period
- 6) Adequate interprofessional/interdisciplinary supervision requirements must be met
- 7) New rotations must be available starting Fall semester of 2016
- 8) Awards will be up to \$15K for the first 12-months

Applications must include sections on: A) Clinical Focus (e.g., patient population, clinical focus and description of existing MUSC clinical service), B) Site Training Background (e.g., existing student rotations/experiences in the clinical area, if any), C) New Rotation Description (e.g., new student rotations in the clinical area, activities, roles and responsibilities

of students from different professions), D) Supervision Plan (e.g., list of clinical rotation preceptors/supervisors and their professions, frequency and type of supervision for students, E) Logistics, Schedules and Timing (e.g., day(s) and time(s) of the week, duration, location, total number of students to be reached, reconciliation of different professions' non-overlapping rotation schedules), F) Rotation Type and Accreditation Standards (e.g., required versus elective, training accreditation standards addressed for each profession involved), G) Student Orientation and Didactics (e.g., plan to provide background and orientation to new students on the rotation), H) Student Resources (e.g., facilities, offices, computers, phones), I) Student Evaluation Plan (e.g., student grading, format, learning outcomes, metrics), J) Program Evaluation Plan (e.g., indicators of program success, efficiency metrics, patient outcome metrics, satisfaction metrics, economic indices of success), K) Teamwork Evaluation Plan (e.g., metrics for evaluating success in teamwork, communication, conflict resolution), L) Budget (e.g., line items for facilitator/supervisor effort, measure/scale acquisition, decreased productivity costs, etc.), and M) Sustainability Plan (e.g., how the training opportunity will continue if no

This Innovation Addresses:

Objective 2c: Improve students applied teamwork skills through enhanced opportunities in real-world clinical practice and laboratory experiences

Objective 2a: Teach fundamentals of teamwork using the TeamSTEPPS framework to all students at MUSC

Objective 1a: Develop and implement applied teamwork skills curricula in formats designed to reach all students at MUSC

Objective 1b: Improve staff/faculty knowledge, skills and practice models to develop a richer environment in which team-based care training will occur in clinics and labs

supplemental/award funds were available in the future). During our pilot phase, four new interprofessional team-based clinical rotations were developed:

The Palliative Care Program

In this rotation, students will have the opportunity to work with an interdisciplinary team comprising multiple physicians and advanced practice nurses, a chaplain, and other volunteers. Students may work alongside students from the MD, MHA, OT, PA, or NP programs. The team will meet daily to discuss each patient, patient care challenges, and other issues. Additionally, there will be an interdisciplinary team meeting twice per week that will include other professions such as physical therapy, occupational therapy, dieticians, and more.

The Interprofessional Aging in Place Program

Students in this rotation will work interprofessionally in a team, which consists of PT, PA, and nursing students under supervision of MUSC faculty (nurse practitioners from the College of Nursing). The interactions will be a combination of live and telehealth medicine. As a team, the students will develop a care plan for each high-risk patient, per site, incorporating all aspects of physical and medical rehabilitation. The IP team then meets on a weekly basis via videoconference for an update of each discipline's perspective related to each patient's progress. Students participating in this experience will practice essential skills of team communication including tools such as the Situation, Background, Assessment and Recommendation (SBAR) technique.

Interprofessional Team-Based Comprehensive Pain Management Program

This rotation will include an interprofessional team comprised of one medical student, one nurse practitioner student, one physician assistant student and one clinical pharmacy student. Students will work individually and in teams to see patients in clinical rooms. Students will also participate in team roundtable patient-care and treatment planning discussions, as well as a wrap-up huddle at the end of each day. The pain management program team currently comprises of an attending physician, a nurse practitioner, PharmD's, and a psychologist. Students will have the opportunity to work with this group of professionals and fellow students to learn about interprofessional teams and how it improves the quality of care provided.

Primary Care and Population Health: The Role of the PCMH Interprofessional Team

In this rotation, students will work with an interprofessional team consisting of internal medicine physicians, advanced practice practitioners (PA and DNP), pharmacists, registered nurses, and licensed practical nurses. Students will work in interdisciplinary teams to identify care barriers, quality gaps, disparities, diagnostic errors, medication errors, and other care challenges, determine the root cause, and recommend systematic strategies to prevent future events. Each team will be responsible for a final presentation to faculty and staff at the end of the rotation. Students will be trained in the key principles of TeamSTEPPS: team structure, communication, leadership, situation monitoring, and mutual support.

Oral Health Faculty Development Program: *Adaptations to the Innovations in Oral Health Toolkit for Faculty Development in Safety Net Practice and Education*

Care integration was part of former Surgeon General Richard Carmona's charge to reduce oral health disparities. Two Institute of Medicine reports affirming the need for improved oral health care through interprofessional practice, especially for underserved communities, followed. Since then, HRSA's report on oral health integration into primary care provided a framework for competency adoption. MUSC's response to these recommendations is evident in a HRSA-funded predoctoral training grant, "Rural Oral Health Advancement and Delivery through Interprofessionalism (ROADTRIP)." ROADTRIP's purpose is to enhance

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interprofessional education at the Medical University of South Carolina (MUSC) so more dental and primary care graduates have the prerequisite clinical and interprofessional competencies, business

acumen, and willingness for rural safety net oral health practice.

We plan to build on the existing *Innovations in Oral Health* (IOH) toolkit in order to contextualize it for safety net practice and education. We will adapt segments of the IOH toolkit collaboratively with faculty and practice partners for priority populations (i.e. rural, underserved, safety net communities).

In Year 1, our first objective will be to develop innovative learning tools for faculty such as virtual simulations and interactive games, contextualized for the safety net. Second, we aim to cultivate safety net faculty champions within each primary care training program. We propose annual awards be given at Faculty Convocation along with financial stipends to incentivize a champions network internal to MUSC. Third, we will institutionalize interprofessional oral health faculty development from a centralized place within MUSC, the OII. The OII is organized under the Provost's Office so that it can affect the entire organization (university, hospital, and healthcare system) by supporting education, research, and practice of interprofessional care models.

In Year 2, we propose to conduct outreach to faculty at all our state's primary care training programs, physician assistant, and nurse practitioner programs. We will explore how to elevate oral health interprofessional competencies of technical and community college faculty who teach dental hygiene, medical assistant, nursing, and community health worker programs. We will define success using the Donabedian model of process and structure. Process measures of success will be development of faculty learning tools for oral health interprofessionalism as well as a system for cultivating faculty champions. Structure will be the centralization of leadership in oral health interprofessional faculty development within the OII and a statewide learning network with primary care training programs and technical colleges. Faculty at MUSC and at other institutions will report improvements in knowledge, efficacy, and likelihood to practice and teach oral health interprofessionalism.

MUSC TeamWorks Program

The TeamWorks program is a new program developed in collaboration between the Office of Interprofessional Initiatives and the MUSC Medical Center that focuses

on teamwork assessment and improvement initiatives on inpatient hospital units. Between 210,000 and 440,000 people die in hospitals each year from preventable harm, and medical error is the 3rd leading cause of death in America behind heart disease and cancer.²⁸ The most common root cause of medical errors is communication problems (written and verbal). Often, poor teamwork sets the stage for such errors, and

TeamWorks was developed to address this issue at MUSC. The Office of the Chief Quality Officer (CQO) at MUSC identifies hospital units at MUSC that are performing poorly on standardized quality and safety metrics. Once identified, large teams of MUSC students trained in teamwork assessment using TeamSTEPPS® Team Performance Observation Tool (TPOT) via our Teamwork Rater Certification System are dispatched on the unit in small groups wherein they evaluate the quality of teamwork in real-life clinical units (often covering programs running 24 hours per day, 7 days per week). These observational data are processed along with staff and faculty self-report data regarding communication, teamwork quality, and the practice environment on the unit. A comprehensive report is provided to the CQO and targeted teamwork improvement strategies are developed. OII and Hospital Staff deliver targeted training in TeamSTEPPS®, communication strategies, patient and shift hand-off procedures, safety monitoring, and optimization of clinical workflows often in collaboration with MUSC's Simulation Center. Following the teamwork training intervention, another wave of trained student raters evaluate the unit and another round of self-report measures are collected.

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Objective 2c: Improve students applied teamwork skills through enhanced opportunities in real-world clinical practice and laboratory experiences

Objective 2a: Teach fundamentals of teamwork using the TeamSTEPPS framework to all students at MUSC

Objective 1a: Develop and implement applied teamwork skills curricula in formats designed to reach all students at MUSC

Objective 1b: Improve staff/faculty knowledge, skills and practice models to develop a richer environment in which team-based care training will occur in clinics and labs

Objective 1c: Increase the institutional capacity for students from different colleges and professions to work together during clinical training and research experiences at MUSC

Findings from our labor and delivery pilot program suggest statistically significant improvement in student-rated team performance (across all measured domains) following TeamSTEPPS® training to all faculty and staff on the unit. Additionally, the training on the unit was associated with statistically significant improvement in the unit's 1) average length-of-stay, 2) number of cases transferred to the ICU, and 3) the mortality index. The TeamWorks program has the potential not only to engage students and improve students applied teamwork skills, but also to significantly enhance the quality and safety of the clinical care delivered at MUSC.

MUSC Team Science Course (Instructor: Dr. Daniel T. Lackland)

A new course has been developed to emphasize the science of teams and the impact of teamwork on scientific productivity. This interprofessional course is IP772 "Team Science in Clinical Research." This course serves both traditional students as well as faculty engaged in the Masters in Clinical Research (MSCR) program at MUSC. In this course, an emphasis is placed on the competencies and processes associated with the concepts of **team science** in translational research. Solving complex societal problems requires the integration of specialized knowledge bases. As the volume of scientific knowledge has increased over time, however, it has become increasingly difficult for any single individual to have deep expertise in all needed areas of science. Addressing today's complex problems requires the high degree of cross-disciplinary collaboration, referred to as "Team Science." This course offers practical guidance about how best to engage in team science to: pursue complex scientific questions, work effectively with team members, and produce high impact research outcomes that help meet society's needs.

This course seeks to provide the trainee with information and resources for the implementation of team science concepts in the design and conduct of clinical research.

The competencies included in this course focus on translational teamwork. At the end of this course students are able to: 1) Build an interdisciplinary/ intradisciplinary/ multidisciplinary team that matches the objectives of the research problem, 2) Identify the composition

of their research team as multidisciplinary, interdisciplinary, and/or transdisciplinary, 3) Complete a description of the research team in NIH grant format, 4) Complete the new NIH Biosketch including the 'team science' attributes, 4) Prepare a template describing the significance of published papers and abstracts as 'significant' for a promotion and tenure packet, 5) Prepare 'team science' ethics component for grant proposal, 6) Formulate a plan to evaluate a scientific team, 7) Develop a plan to manage an interdisciplinary team of scientists, 8) Develop a working plan for a multidisciplinary research team with fiscal, personnel, regulatory compliance, and problem solving requirements, 9) Advocate for multiple points of view, 10) Clarify language differences across disciplines, 11) Demonstrate group decision-making techniques, and 12) Manage conflict among team members.

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Safely Speaking: Teamwork Tuesdays

Safely Speaking is a daily email sent by MUSC's Chief Quality Officer (CQO), Dr. Danielle

Scheurer, to all MUSC students, faculty and staff. MUSC Health is deeply committed to the principles of high reliability and safety. One of the key components of these principles is the development and maintenance of a learning culture. Because the science and techniques in health care safety are still nascent, one of the ways we keep the entire MUSC Health Care Team constantly learning is through our daily Safely Speaking emails. Safely Speaking serves as a brief daily reminder of our commitment to safety and as a tool to help all of us learn more about health care safety. We send it early in the morning so that it will be the first email that the majority of MUSC Health Care Team members will see as they start their day at MUSC.



Safely Speaking™
MUSC Health's Daily Safety Tip



Pulling the Trigger on Antibiotic Overrides

September 15, 2016

Adverse drug events (ADEs) comprise a great number of unexpected medical occurrences. A team of researchers recently sought to test an electronic trigger detection tool to reduce ADEs. The tool could detect medication dosing errors. The team developed antibiotic order sets and evaluated user overrides of alerts. Overridden alerts were examined for evidence of administration and the delivered dose was compared to pharmacy-derived dosing rules to confirm true overdoses. Overdoses were then reviewed for association with the occurrence of ADEs. The results: Of 55,546 orders, 539 were overdose orders, which led to 1,965 overdoses. In the overdose group, loose stools and diarrhea was significantly increased following drug administration. The team altered the dosing rule thresholds to reflect clinically accurate dosing and these changes decreased overall alert burden and improved the salience of alerts. These results support automated algorithm-based detection systems could be useful in reducing medication errors and improving patient safety.

View MUSC Pharmacy's Decision Support Oversight Committee website by clicking [HERE](#)

Teamwork Tuesdays is a new addition to Safely Speaking wherein the topic, every Tuesday, will be relevant

to how teamwork and the principles of our QEP "Team-Up for Better Health" pertain to patient safety and quality of care. This innovation will reach all of MUSC on a regular basis with reminders, observations, data, recommendations, and inspiring ideas related to the importance of teamwork in healthcare today.

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Oil Web Applications Portal

The newly launched Office of Interprofessional Initiatives Web Applications Portal is a central site that hosts many of the newly developed Team-Up for Better Health innovations and initiatives. Students and faculty can access SimuVersity Medical Center, the Applied Teamwork Competency Portfolio system, the TeamSTEPPS® Rater Certification System, and other QEP-related activities and developments via this central hub. All systems that contain student-data (e.g., ATC Portfolio, Rater Certification System) are password-protected and only accessible with appropriate MUSC authentication. This hub serves as a one-stop shop for all interprofessional interactive digital systems.