

A Project-based Curriculum for Driving Organization-wide Continuous Improvement

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Abstract

Background: Creating the capacity and capability for meaningful improvement in healthcare quality is a challenge many organizations face. Before 2012, Children's Mercy sponsored 20 leaders to obtain advanced improvement training from peer organizations. Recognizing an opportunity to build upon this momentum, we developed an organization-wide curriculum for teaching continuous improvement. **Methods:** A steering committee was created in 2011 to define, advise, and oversee education in improvement science. We agreed upon a framework for improvement, a program name [Continuous Quality and Practice Improvement (CQPI)], and a phased curriculum development approach, beginning with a project/experiential learning based course (Team CQPI). Course evaluation for Team CQPI consisted of a standard evaluation of objectives, pre- and post-course assessment, qualitative feedback, and serial assessment of project progress using the Team Assessment Score (TAS). The curriculum committee monitored improvement. **Results:** From 2012 to 2017, 297 people participated in the project-based course, completing a total of 83 projects. TAS improved throughout the 4-month project-based course, from an average starting score of 1 ("forming a team") to 2.7 ("changes tested"). The average TAS at 12 months following completion of the Team CQPI course was 3.5 ("improvement") out of 5. **Conclusions:** Development of a comprehensive curriculum for driving continuous improvement has resulted in a measurable change in TAS scores representative of local improvement efforts. (*Pediatr Qual Saf* 2019;4:e138; doi: 10.1097/pq9.000000000000138; Published online February 13, 2019.)

INTRODUCTION

In 2001, the Institute of Medicine identified a chasm in the quality of health care in the United States and called for a fundamental change.¹ Subsequent literature suggested that patients may only receive optimal care 50% of the time.^{2,3} Also, the quality of care may vary just because of the location in which a patient chooses to live.⁴ Less than the optimal performance across multiple acute care and preventive care measures and multiple geographic locations suggest the need for broad-based quality

improvement (QI) efforts led by health care professionals. Despite this need, many health care providers have not been exposed to QI concepts or may not have the knowledge or skills to succeed in their improvement efforts.⁵ Also, health care organizations may struggle to provide the necessary resources to support the widespread QI efforts.⁶

Improvement capacity is related to creating the structure, processes, and QI specialists to support improvement teams. Improvement capability, on the other hand, is related to developing leaders to effectively conduct improvement projects that result in a sustainable, measurable change.⁷ Perla et al⁸ identified 4 primary factors that drive large-scale implementation of change: planning and infrastructure; individual, group, organizational, and system factors; the process of change; and performance measures and evaluation. Also, large-scale improvement may not occur until the front-line staff and middle management incorporate problem-solving and change management behaviors at the bedside as an integral part of providing patient care.⁹

In 2011, leaders identified an opportunity to capitalize on their improvement training obtained at a peer organization. As a result, resources were allocated to develop an organization-wide curriculum for teaching continuous improvement. This study describes the results of implementing an organization-wide, project-based continuous improvement education course in a free-standing children's hospital.

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METHODS

Children’s Mercy Kansas City is a comprehensive pediatric academic health center that employs over 8,000 pediatric specialists, physicians-in-training, nurses, allied health professionals, and ancillary staff. Physicians and staff care for pediatric patients in 2 hospital campuses, a 315-bed, full-service facility in Kansas City, Mo. and a smaller 53-bed facility in Overland Park, Kans. The primary catchment area includes several additional urgent care and ambulatory sites.

Between 2008 and 2011, the hospital sent 22 physician, nursing, pharmacy, and quality leaders to the Advanced Training Program at Intermountain Healthcare, at the cost of approximately \$135,000, with the goal of increasing the organization’s improvement capacity and capability. In 2011, quality leaders and executives committed to building and sustaining an internal training program for QI. They created a steering committee consisting of executives, physician leaders, nursing leaders, and educational leaders. Five of the 17 steering committee members previously attended Advanced Training Program, and 8 were trained internally. The committee hired a program director with expertise in QI within health care. Also, they identified administrative support and a physician champion. Finally, they named the program Continuous Quality and Practice Improvement (CQPI). Later, a program manager was hired to support the day-to-day

coordination of the program. The annual budget for the program was \$250,000, which included operating costs and salaries for 2 employees.

The CQPI education program’s mission was to educate faculty and staff on improvement methods through the direct application of tools that lead to meaningful change while continuously improving the program to meet demand. The goal was to train enough staff to reach a tipping point of proliferation where CQPI-trained staff would start teaching and coaching others, expanding our organization-wide capability for improvement work. The steering committee and CQPI leads began by training mid-level leaders through an intensive, project-based course (Team CQPI).

The CQPI Roadmap, adapted from the Associates in Process Improvement, was the framework used to drive continuous improvement and walk the team through an improvement cycle.¹⁰ The Team CQPI course included modules related to improvement science, including leading change, problem investigation, designing high-reliability interventions, Plan-Do-Study-Act cycles, sustaining change, and patient safety. QI experts coached the team in the application of project tools during class and in between sessions. Graduates demonstrating an understanding of the methodology became coaches and committed to supporting other coaches through a coaching network.

Table 1. Continuous Quality and Practice Improvement Team Assessment Score

Stage	Assessment	Definition
Initiating	0.5 Intent to participate	Participants signed up for CQPI
	1.0 Forming team	Team formed
		Information gathered
Investigating	1.5 Planning for the project has begun	Complete set of measures selected
		Aim defined
		Charter completed
Identifying	2.0 Activity, but no changes	Team meeting regularly
		Problem described through QI tools: Process flow map, fishbone diagram, 5 whys
		Data collection begun (data collection plan)
Improving	2.5 Changes tested, but no improvement	Most common factors identified (Pareto chart)
		Driver diagram completed
	3.0 Modest improvement	Data collected and plotted over time (run or control chart)
		Interventions prioritized (prioritization matrix)
	3.5 Improvement	Changes planned, not tested
		PDSA worksheet started
		Changes tested, no improvement
4.0 Significant improvement	Initial PDSA cycles completed	
	PDSA worksheet completed	
4.5 Sustainable improvement	3.5 Improvement	Moderate improvement in process measure (≥3 data points in run or control chart)
		Moderate improvement in outcome measure (3 data points in run or control chart)
		Significant improvement with process measure (trend or shift in run or control chart)
5.0 Outstanding sustainable results	4.0 Significant improvement	PDSA scope and/or size of test increased
		Significant improvement with outcome measure (trend or shift in run or control chart)
5.0 Outstanding sustainable results	4.5 Sustainable improvement	Plans for spread
		Sustained improvement in outcomes measures (10–12 data points in run or control chart)
		Spread beyond the target population is underway
5.0 Outstanding sustainable results	5.0 Outstanding sustainable results	All primary drivers have been accomplished (driver diagram)
		Outcome measures are at best practice levels
		Changes spread to all populations
		Control plan created

Adapted with permission from the Institute for Healthcare Improvement’s Assessment Scale for Collaboratives.¹¹ © 2004 Institute for Healthcare Improvement. Published by Institute for Healthcare Improvement. PDSA, Plan-Do-Study-Act.

Table 2. List of Project Names

Absenteeism in Attention Deficit Hyperactivity Disorder Clinic
Adverse Drug Events
Availability of Transport Services
Barcode Medication Administration in Inpatient
Barcode Medication Administration in the ED
Bone Marrow Transplant physician documentation
Cardiovascular Operating Room Efficiency
Cardiovascular Surgery—Institution of Clinical Pathway
Care for Heart Patients
Caregiver Knowledge of Team Members
Caregiver Medication Education
Cerebral Palsy Center Rehab
Discharge Process: An Interdisciplinary Approach
Education and Radiology Communication
Emergency Contraception—Teen Clinic
Emergency Department Burn Care Process Model
Emergency Department Recognition and Management of Pain with Extremity Injuries
Evaluation of Faculty Development
Fetal Health Center Family Needs
Food Tray Delivery to the OP Clinics
Graduate Medical Education
Hematology and Oncology Inpatient Processes
Including Essential Elements in an Asthma Action Plan
Inflammatory Bowel Disease Return Rates
Influenza Immunization Rates among Pediatric Oncology/Bone Marrow Transplant Patients
Initiation of a Healthy Lifestyles Screening Process into the Community Primary Care Practice Offices
Inpatient Immunization Program
Intensive Care Nursery Non-Invasive Ventilation
Maximizing Community Benefit
Medication Delivery Process—Intensive Care Nursery
Obesity Prevention and Treatment in the Primary Care Clinic
On Time Start for the First Catheter Laboratory Case of the Day
Oral Health Assessments in Primary Care Clinic
Oral Pharyngeal Motility Swallow Study
Overuse of Oximetry in Infants 4 weeks to 3 years with Viral Bronchiolitis
Pain Control in Post-Cardiac Surgery Patients Transitioning to Floor Status
Parent Satisfaction with Pain Management
Perfusion Processes
Peri-Operative Warming of Cerebral Palsy Patients
Peripheral Intravenous Infiltrates
Pharmacy Stat Intravenous Medication Turnaround Time
Pneumococcal 23 Valent Vaccine In Immunocompromised Patients with Renal Disease
Pneumococcal Vaccination in Children and Adolescents with Lupus and Mixed Connective Tissue Disease
Point of Care Anticoagulation Management
Pre-Registration Process Development
Prescription Entry Near Misses and Errors
Pressure Ulcers
Preventing Inpatient Diaper Rash
Primary Care Clinic On-Time Starts
Project Impact—Improving Physician Documentation
Promise 1000—Home Visiting
Provider Awareness of Patient Neurodevelopmental Baselines
Radiology
Readmissions
Readmissions/Discharge Preparation
Reduce Contaminated Lab Specimens
Reducing Harm from Infiltrates
Reducing Pain with Vaccinations
Reducing Surgery Cancellations
Reduction of Viral Testing in Bronchiolitis Patients
Risk Education for Teratogenic Medication
Rounding Script for Central Line Associated Bloodstream Infection Prevention
Safe Patient Lifting
Sepsis
Short Duration Antimicrobial Therapy in Skin & Soft Tissue Infections
Sleep Disorders Center CPAP Compliance and Tracking improvement
Social Work
Special Care—Improving Immunization Documentation
Standardization of Tracheostomy Education
Standardized Shift Change Report (Respiratory Care)

*(Continued)***Table 2. (Continued)**

Success Rates with First Attempt Intubations
Teen Clinic—Reduction of Reinitiating of Depo-Provera Injections
Teen Transitioning Planning and Coordination to Adult Health Care Providers
Teratogenic Medication Education
Thyroid Testing
Total Revenue Accounts
Toxicology
TrialNet iPad Survey
Unplanned Extubations
Urinary Contamination Rates in the Urgent Care Setting
Use of Safe Lifting Equipment
Utilization of Transthoracic Echocardiograms in the Outpatient Setting
Wait Time for an Outpatient Cardiology Clinic Echocardiogram

ED, Emergency Department; OP, Outpatient; CPAP, Continuous Positive Airway Pressure.

Participants were selected through application or invitation by senior leadership. Applications were open to teams who identified an improvement opportunity related to their area of practice. Project applications were reviewed and scored based on the following criteria: feasibility; alignment with the Institute of Medicine “Aims for Improvement”¹¹; inclusion of adequate measures; inclusion of a specific, measurable, actionable, relevant, and time-bound aim; diversity of the team; completeness of the problem statement; and potential to impact other areas within the organization. Approximately 7 teams consisting of 3–5 members were selected through application each semester. Participants were selected from multiple disciplines. Senior leaders identified up to 10 additional participants who would benefit from the course based on their professional development plan and role within the organization. Approximately 30 participants enrolled in the course, during each of 2 semesters per year. Participants were relieved of their regularly scheduled work for the 56 contact hours of the project-based course.

The program director used both qualitative and quantitative methods to evaluate the curriculum. After each 4-month course, the evaluation scores and participant feedback were used in Plan-Do-Study-Act cycles to improve the curriculum. The Steering Committee determined the overall success of the program through the Team Assessment Score (TAS), which was adapted with permission from the Institute for Healthcare Improvement.¹¹ The TAS is a Likert Scale–based assessment of improvement progress for a given project where a score of 0.5 equates to “intent to participate,” a score of 3.0 equates to “modest improvement,” and a score of 5.0 equates to “outstanding, sustained improvement” (Table 1). Data collection occurred at 7 time points: after each of 4 sessions and at 6, 12, and 18 months after completion of the course. Both the team leader and the team’s coach reported a TAS. Also, a survey assessing skill acquisition, skill utilization, and generation of scholarly work was used to assess behavior changes over time. The questions corresponded with a Likert Scale of strongly agree, agree, neutral, disagree, and strongly disagree. Participants received a survey after each session, with 2 reminders 2 weeks apart. An administrative

fellow conducted follow-up phone interviews with the leaders of projects who met their aim and/or achieved a TAS of ≥ 3 .

The program director and program manager analyzed TAS through basic statistical calculations of an average, minimum, and maximum for each time point. Also, we aggregated the number and percent of participant responses to each question that utilized a Likert Scale. The program director presented the aggregated data to the Steering Committee quarterly for each semester that the course was offered and across the course as a whole.

The Children’s Mercy Office of Research Integrity reviewed this study and designated it as not human subjects’ research.

RESULTS

Eighty-three projects were completed by 297 Team CQPI participants between 2011 and 2017 (Table 2). Project teams reported progress in advancing through the project cycle with an increasing TAS at each time point. TAS scores improved throughout the 4-month project-based course, from an average starting score of 1 (forming a team) to 2.7 (changes tested). The average TAS at 12 months after completion of the course was 3.5, representing improvement (Fig. 1). Seventy-six percent of respondents surveyed 12 months following course completion reported a TAS of ≥ 3 . The average survey response rate was approximately 63%.

Overall, participants agreed that the course met the learning objectives (Table 3). Similarly, the evaluation of most presenters was positive. Participants appeared to like the schedule and timing of sessions. They also felt

the content of the course was informative and interesting for all semesters. When asked at 6, 12, and 18 months after completion of the course whether they had completed their improvement project, on average, more than half of the participants responded that they had done so or would do so in the next 3 months. Also, most of the participants applied the skills learned in Team CQPI on another improvement project and would recommend the course to a colleague interested in learning about the tools and methodology of QI. Although only a small number of participants have published their project,¹²⁻¹⁶ many report that they intend to do so or have presented an abstract or poster of their work at a regional or national conference (Table 4).

A majority of participants were physicians, nurses, and allied health professionals (Table 5). Twenty-two participants, who demonstrated an exceptional understanding of the methodology, became coaches. As a result, we developed a coaching network to assist the primary QI coach in effectively supporting future teams. Also, 2 participants were selected to participate in the initial cohort of the Quality and Safety Improvement Scholars Program (Academic Pediatric Association) and 3 went on to obtain further training in advanced QI methods to improve their academic careers. Five participants now lead QI for their respective divisions.

Patient care processes and clinical outcomes have improved as a result of successful projects. These improvements include, but are not limited to, improved assessment of risk for readmission,¹² reduction in pain related to vaccination,^{13,14} improved oral health,¹⁵ and shorter wait time for an echocardiogram.¹⁶ When specifically asked about key factors for successful completion of their projects, project team leaders identified leader support,

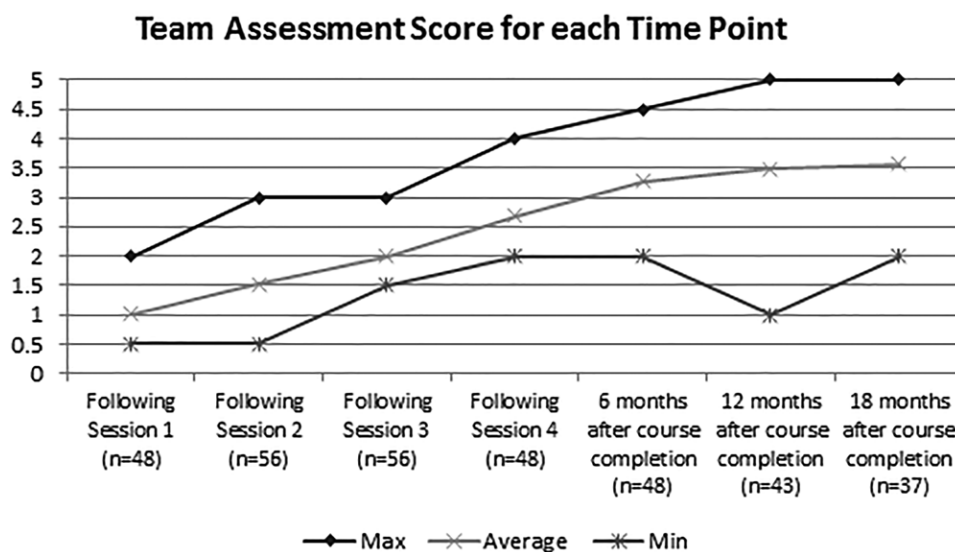


Fig. 1. TAS reported by teams who completed the course between Fall 2012 and Spring 2017. The maximum included in this figure is the largest participant reported TAS at each time point. The average is the central tendency of all participant reported TAS at each time. The minimum is the smallest participant reported TAS at each time point.

Table 3. Course Evaluation of the Degree to Which Objectives Were Met

Objective*	Strongly Disagree, n (%)	Disagree, n (%)	Neutral, n (%)	Agree, n (%)	Strongly Agree, n (%)	Total Responses, n (%)
Demonstrate how the CQPI Roadmap applies to an improvement project	0 (0)	0 (0)	1 (1)	40 (29)	96 (70)	137
Differentiate improvement methodologies	0 (0)	0 (0)	13 (7)	54 (31)	110 (62)	177
Apply the Four Lenses of Deming’s System of Profound Knowledge for an improvement project	0 (0)	3 (2)	5 (4)	59 (43)	71 (51)	138
Demonstrate the concept of leading for change when working on the CQPI improvement project team	0 (0)	0 (0)	3 (2)	50 (33)	99 (65)	152
Distinguish the roles and responsibilities for each member of an improvement team	0 (0)	0 (0)	5 (3)	53 (34)	99 (63)	157
Discuss ways to include the patient and family perspective in your improvement project	0 (0)	2 (3)	1 (1)	27 (39)	40 (57)	70
Demonstrate the importance of considering equity and diversity in an improvement project	0 (0)	2 (1)	2 (1)	36 (27)	95 (70)	135
Draft a project charter that encompasses all required elements for an improvement project	0 (0)	0 (0)	6 (4)	42 (28)	103 (68)	151
Develop a process to capture the voice of the customer intended to guide an improvement project	0 (0)	1 (1)	6 (4)	48 (28)	115 (68)	170
Recognize the importance of improvement science in health care when returning to work	0 (0)	0 (0)	0 (0)	25 (23)	82 (77)	107
Justify the importance of reliability, validity, and sampling methods when describing measurement for an improvement project	0 (0)	0 (0)	5 (4)	55 (41)	74 (55)	134
Develop a complete set of measures: outcome, process, and balancing	0 (0)	0 (0)	3 (2)	67 (44)	82 (54)	152
Construct a data collection tool for an improvement project	0 (0)	0 (0)	4 (3)	63 (46)	70 (51)	137
Prepare a plan to examine the current state for an improvement project	0 (0)	0 (0)	2 (2)	46 (39)	69 (59)	117
Prepare a visual display that includes opportunities for improvement for the current state of a process	0 (0)	0 (0)	5 (3)	53 (35)	94 (62)	152
Analyze the problem and the potential causes through the use of cause and effect tools for an improvement project	0 (0)	0 (0)	5 (3)	59 (36)	102 (61)	166
Develop charts to analyze the factors contributing to a problem	0 (0)	0 (0)	4 (3)	55 (37)	90 (60)	149
Draft a plan for improvement through construction of a driver diagram	0 (0)	3 (3)	3 (3)	54 (46)	57 (49)	117
Describe why it is important to display data over time for an improvement project	0 (0)	0 (0)	1 (0)	37 (27)	100 (73)	137
Apply concepts for identifying and responding to variation	0 (0)	2 (1)	10 (6)	61 (37)	94 (56)	167
Create charts that display data over time for at least the outcome measure for an improvement project	0 (0)	0 (0)	2 (1)	44 (32)	91 (66)	137
Demonstrate the impact of incorporating human factors on systems and processes	0 (0)	0 (0)	3 (5)	10 (18)	42 (76)	55
Design higher level reliability interventions	0 (0)	0 (0)	6 (4)	60 (40)	84 (56)	150
Utilize PDSA cycles to test interventions under varied conditions while completing an improvement project	0 (0)	0 (0)	3 (2)	46 (33)	91 (65)	140
Describe how to use sampling methods when displaying data over time for an improvement project	0 (0)	0 (0)	4 (6)	33 (46)	35 (49)	72
Describe how to sustain and promote quality improvement in your setting	0 (0)	0 (0)	6 (4)	52 (31)	112 (66)	170
Apply the framework for constructing a manuscript for publication for an improvement project	1 (1)	8 (8)	13 (13)	36 (35)	46 (44)	104
Demonstrate how patient safety principles can improve system performance, prevent harm when error does occur, help systems recover from error, and mitigate further harm	1 (1)	2 (3)	11 (16)	22 (32)	33 (48)	69
Total responses for each answer	2 (0)	23 (1)	131 (4)	1,287 (35)	2,276 (61)	3,719

Data are represented as n (%).

*Objectives were added or updated over the life of the course. Only the final objective was included for brevity.

PDSA, Plan-Do-Study-Act.

adequate “protected time” to work on the project, and access to necessary resources such as data, improvement methods, and coaching.

DISCUSSION

Similar to experience documented in the literature,^{8,17} participants in the project-based CQPI course reported learning, retention, and application of core QI concepts. Participants also reported a change in behavior in the application of skills in their daily work, which is more important than knowledge acquisition alone.¹⁸ Through

assignment of a TAS at each of 7 time points, participants reported an ability to move a project forward both during the course and the months following the course completion with guidance from an improvement coach. Also, and similar to the previous study, a strength of our curriculum design was that the participant could directly apply the constructive coaching feedback to the project.¹⁷

Published systematic reviews of QI and patient safety programs have found that the most common research design for QI education is a simple pre–post comparison.¹⁹ The CQPI Steering Committee primarily assessed the course through the success of the projects. Also, the

Table 4. Course Evaluation Results

Question	Strongly Disagree, n (%)	Disagree, n (%)	Neutral, n (%)	Agree, n (%)	Strongly Agree, n (%)	Total Response, n (%)
Evaluated following each session						
Utilize what you have learned in the next 2 wk	0 (0)	0 (0)	13 (2)	198 (32)	411 (66)	622
Share what you have learned with a coworker or friend in the next 2 wk	0 (0)	2 (0.2)	54 (6)	222 (25)	618 (69)	896
Presenter knowledge of subject	1 (0)	1 (0)	17 (1)	250 (12)	1,852 (87)	2,120
Presenter was clear and organized	1 (0)	7 (0.3)	20 (1)	297 (14)	1,791 (85)	2,116
Presenter ability to stimulate interest	3 (0.1)	3 (0.1)	47 (2)	340 (16)	1,723 (81)	2,116
Instructional methods enhanced learning	2 (0.1)	1 (0)	37 (2)	328 (16)	1,743 (83)	2,111
Evaluated at 6, 12, and 18 mo after completion of the course						
I applied what I learned in CQPI to another project besides my original CQPI course project	1 (0.3)	18 (5)	17 (4)	171 (44)	176 (46)	383
I successfully completed my CQPI project (met the aim statement) or will successfully complete my project within the next 3 mo	9 (2)	101 (26)	53 (14)	115 (30)	111 (29)	389
I would recommend the CQPI course to any Children's Mercy Hospital employee interested in learning about the tools and methodology of quality improvement	0 (0)	1 (0.3)	2 (0.5)	88 (23)	298 (77)	389
Have you published or presented your project?	We have presented a poster or slides 59 (26)		We plan to publish an article 15 (7)		Total response 225	

Data are represented as n (%).

Table 5. Breakdown of Participants by Discipline

Discipline	n (%)
Nursing	122 (41)
Physician	80 (27)
Respiratory	15 (5)
Pharmacy	11 (4)
Social work	7 (2)
Radiology	3 (1)
Others	59 (20)

TAS was collected in a time series, making our course unique. The sequential assessment of TAS allowed real-time assessment of the course (after each session) and longitudinal assessment of the overall course. Also, requiring teams to assess their progress helped to reinforce the overall goal of not just knowledge acquisition but also real-time application.

Most previously published improvement curricula included only evaluations of educational outcomes. A systematic review found that curriculum that evaluated both education and clinical outcomes lacked evidence of the relationship between the 2 outcomes.²⁰ The nature of the TAS allowed for program evaluation based on the improvement within the system. The project-based CQPI course encouraged an interdisciplinary approach to QI that resulted in not only meaningful learning and improvement for those involved but also in improved processes and patient care outcomes. Leadership support, organizational alignment, and access to resources (including data and QI experts) were strengths of the design that helped drive these local improvements.^{7,20}

At an individual level, participants have contributed to building both capacity and capability through coaching within the program and/or within their division. Although the generation of scholarly work and the development of

improvement leaders and scholars were not predicted outcomes, similar to other published studies, this is a desirable result of the course and aligns with advancing our academic profile.^{17,20} Also, access to educational programs and courses designed to help junior faculty translate their passion for improvement science into leadership opportunities and academic capital helps to reinforce academic excellence and may help recruit junior faculty in the future.²¹

We noted several limitations in our evaluation design for Team CQPI. One limitation was the use of self-assessment data to measure course effectiveness and acquisition of skills and behavior changes. Self-assessment and monitoring may not always correlate with actual performance; however, the use of internal and external data strengthens the assessment.²²⁻²⁴ We evaluated the discrepancies between participant- and coach-reported TAS as a means to facilitate discussion and future learning, but we did not conduct statistical correlations. Also, measuring TAS at all proposed time points did not begin until 2013. A low response rate is also a limitation to the interpretation of results, particularly for those assessments conducted at 6, 12, and 18 months after completion of the course. We would have preferred to measure the impact of the course on clinical outcomes and project-specific improvements, but these are difficult to capture and articulate in aggregate.^{17,25,26} Also, improvements in patient care processes and clinical outcomes usually were not realized until 6–18 months after completion of the course. However, the course-trained influential improvement leaders throughout the organization played a key role in the improvement of strategic priorities, such as a reduction in patient harm from hospital-acquired conditions.

Future work includes incorporating lean thinking into the framework for improvement to take full advantage of

the organization's daily management system. We plan a more rigorous approach to assess learning outcomes and behavior change in future revisions of the course. Finally, the inclusion of supporting courses that dive deeper into focused topics such as patient safety, high reliability, human factors, and improvement research will augment the overall improvement education program.

CONCLUDING SUMMARY

The development of a comprehensive project-based improvement course resulted in the measurable improvement in selected projects during the course, ongoing improvement after completion of the course, and participant engagement in further improvement efforts after course participation. The Team CQPI course has become the foundation for building improvement capacity and capability within our organization.

DISCLOSURE

The authors have no financial interest to declare in relation to the content of this article.

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