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Background: In 2015 the Mayo Clinic Care Network (MCCN), in an effort to extend medical knowledge and share these best practices, embarked on an education mission to diffuse the clinical practice redesign involving the practice of colon and rectal surgery at Mayo Clinic (Rochester, Minnesota) to members of the MCCN. They elected to use a collaborative framework in an attempt to transfer knowledge to multiple teams in an efficient and supportive manner.

Methods: Eight MCCN members assembled a multidisciplinary team, which participated in both a didactic learning session delivered by frontline experts, as well as follow-up remote sessions regarding Mayo Clinic’s enhanced recovery pathway for colon and rectal surgery. Teams departed the group session with established immediate next steps, communication plans, and an awareness of potential barriers and strategies for mitigation. Monthly coaching calls followed in an effort to help all teams meet their time line and overall goals. Finally, all participants met again after six months to report their clinical outcomes, as well their unique individual organization’s successes and barriers encountered.

Results: Participating teams felt overwhelmingly that the collaborative program exceeded their expectations and equipped them with the tools to be successful. They also felt that the extended support provided by the Mayo Clinic team was essential, and the collaboration with other members markedly enhanced their experience. Importantly, all teams were able to successfully reduce length of stay, which was the desired main clinical outcome.

Discussion: The collaborative format was instrumental in the rapid diffusion and successful implementation of a transformative practice redesign involving colorectal surgical care of patients.

The Mayo Clinic Care Network (MCCN; Rochester, Minnesota) is composed of healthcare organizations that share a common philosophy, commitment, and mission to improve the delivery of health care through high-quality, data-driven, evidence-based medical care. MCCN, through formal collaboration, knowledge extension, and resource sharing, attempts to build strong, clinically meaningful relationships, so as to benefit patients at member health care organizations.

Membership in the MCCN requires a prospective organization to undergo a thorough due diligence process, including an assessment of governance structures, clinical and business practices, quality/safety/service efforts, and brand/image/reputation management. Members sign an annual subscription agreement with Mayo Clinic and pay an annual fee providing them access to an array of predefined services. Nothing in the agreement requires network members to use Mayo Clinic for clinical or referral services. One of the predefined services provided is health care consulting (HCC). Every member receives an annual allocation of HCC hours that can be used as the currency for individual consulting projects and educational programs. Since the inception of the MCCN in 2011, knowledge transfer has been largely conducted between Mayo Clinic frontline clinicians (subject matter experts [SMEs]) and one member organization. As the network grew, there were an increasing number of members requesting access to the same best practices. In 2015, in an effort to extend medical knowledge and share these best practices, the MCCN embarked on a pilot education initiative to translate the clinical practice redesign work accomplished at Mayo Clinic to members of the network using a collaborative framework.

The collaborative framework was first described by the Institute for Healthcare Improvement (IHI) in the mid-1990s. Since the creation of the IHI Breakthrough Series Collaborative Model, dozens of examples of collaboratives based on the IHI original model have been described in the literature. Examples range across a wide variety of topics, including catheter-associated urinary tract infections and hospital-acquired ulcers, fall prevention practices, ambulatory
However, the MCCN is different from IHI in that all MCCN sites have a formal relationship with Mayo Clinic, which allows for sharing of best practices, policies, and knowledge extension among this network of high-quality like-minded organizations.

The MCCN initiative to use this framework developed as a result of a prior discussion with clinical leaders from across the network during which a strong interest in practice redesign projects became apparent. Mayo Clinic has successfully implemented transformative practice redesign projects in many clinical, surgical, and laboratory-based practices. Mayo Clinic’s colorectal experts have written extensively on the innovations implemented and tested in the Mayo Clinic Colon and Rectal Surgery (CRS) practice. This group consists of 8 to 10 surgeons, performing up to 2,800 elective inpatient cases per year, with 40% of cases oncologic in nature; all patients are considered potential enhanced recovery patients. Consistent with previous research, the Mayo Clinic team found that length of stay (LOS) and other clinical outcomes could be improved and/or reduced through implementation of a standardized clinical pathway. With an overall goal of excellence in patient care, the Mayo Clinic team implemented the enhanced recovery pathway (ERP) in November 2009 after spending approximately nine months in development. The initial program focused on minimally invasive surgeries in two physicians’ practices. In 2010 the program was expanded to all cases for these same two colorectal surgeons. On implementation, data metrics focused on refining the pathway and patient outcomes, and LOS was considered a surrogate metric for many elements of the pathway. Postoperative complications and counterbalance measures were also investigated.

After a year of practice standardization, ongoing research, and informal internal diffusion, the ERP became standard practice for all elective Mayo Clinic colorectal surgical patients across the division (nine surgeons at the time) in 2011. Despite this, the Mayo Clinic CRS team recognized that there was still a major gap between the internally endorsed ERP and the way it was being implemented with patients across the CRS practice. Recommendations were given across the department, but individuals were required to make their own standard consensus on the basis of logistics such as anesthesia teams, formulary agents, and ordering processes. This led the team to embark on a focused quality improvement project that would involve all CRS patients in 2012, to support and reinforce active diffusion and standardized implementation, with subsequent critical analysis of the outcomes. The continuous learning that occurred as a result of these implementation steps led to a desire to accelerate practice redesign not only within CRS but to other clinical disciplines throughout the Mayo Clinic enterprise. This made the CRS ERP an ideal project to test diffusion and implementation across MCCN member sites.

To achieve this goal, the MCCN education team recruited SMEs in early 2015 from the Division of CRS, Department of Nursing, Pharmacy, and Anesthesiology, along with key personnel from health systems engineering, administration, and those specializing in curriculum development. Importantly, the majority of these individuals had worked together to establish the Mayo Clinic CRS ERP and were able to share their years of trial, error, and successes and allow participating members to learn in an efficient and transparent environment.

The objective of this educational collaborative was to provide high-value transferable content to participating teams to facilitate successful implementation of an evidence-based clinical pathway for enhanced recovery. The aims were as follows:

1. Develop and deliver a comprehensive evidence-based program to support local teams in an accelerated quality improvement process using the DMAIC (Define, Measure, Analyze, Improve, Control) framework, a Six Sigma principle.
2. Reduce burden on SMEs through delivery of content to multiple local teams at one time.
3. Leverage the support of quality improvement and education resources to drive project management and success of local clinical teams and help them accelerate the Plan–Do–Study–Act process.
4. Improve LOS and other clinical outcomes related to implementation of an enhanced recovery program at each site.

The collaborative framework for diffusion would not only enable knowledge transfer to multiple members but would also adhere to the core cooperative principle of the work initially done by the Mayo Clinic CRS enhanced recovery team. We describe this project, which was submitted to the Mayo Clinic Institutional Review Board and deemed a quality improvement project, in this article.

**METHODS**

Teamwork and communication across a multidisciplinary care team were key elements of adoption and diffusion of the enhanced recovery program at Mayo Clinic. To replicate and reinforce this model of success, MCCN members were asked to assemble a similar team and bring those teams together to learn collaboratively in an eight-month period.

The planning team ultimately defined the following time line for diffusion (Figure 1):

- An initial, overview webinar open to all MCCN members to learn what the Mayo Clinic CRS team had accomplished through its clinical practice redesign project and ask questions related to their potential participation
- A second webinar ("Pre-Meeting Call") for committed teams outlining program expectations, baseline data collection, and practice current state assessment
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