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Teaming: An Approach to the Growing Complexities in Health Care

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Confronted with rising costs and patients who often have multiple comorbidities, the orthopaedic surgeon needs to face the challenge of providing high-quality health care. One solution is to increase and improve coordination, communication, and teamwork. The orthopaedic surgeon also needs to work effectively and efficiently to manage a fluid and shifting mix of health-care personnel partners from other disciplines and specialties to deliver high-quality patient care. The orthopaedic surgeon must collaborate in a new way with fellow health-care professionals, providing care by following teaming protocols.

In the appropriate leadership role and employing the necessary motivational, communication, and conflict-management skills, the orthopaedic surgeon must build the proper foundations for teaming through the selection of compatible, effective team members and establish the necessary collaborative teaming environment. The orthopaedic surgeon needs to lead these teams and promote communication, listening, and collaboration. The emphasis on effective communication through a horizontal hierarchy rather than an autocratic management style by the orthopaedic surgeon allows the seamless incorporation of specialty physicians as needed and facilitates teaming among orthopaedic staff.

With a facilitative environment and clear communications, teaming in patient care will occur as a learning cycle of diagnosis, design, action, and reflection. Each of these steps is critical for teaming to be successful. During diagnosis, the orthopaedic surgeon needs to effectively frame the situation. In design, the orthopaedic surgeon needs to encourage participation in the determination of the next appropriate steps for patient care. During the action step, teaming protocol emphasizes both the process of care through care-tracking and the result of that care, which is critical for reflection. Reflection is necessary for the team to improve its effectiveness and learn from its experience. However, for successful reflection and learning, the orthopaedic surgeon needs to be truly open to criticism.

To face the challenges currently within the health-care system, greater collaboration and teamwork among various disciplines and specialties is necessary. However, in consideration of the rapidly advancing diagnostic and treatment modalities for all diseases, the orthopaedic surgeon can use the flexible effectiveness of teaming to adapt to these changes. By leading these teams through the cycle of diagnosis, design, action, and reflection, the orthopaedic surgeon will allow effective learning and adaptation to these novel developments to provide the best value and quality health-care for their patients.

Continuing medical progress and novel means of patient care require the integration of an increasing number of specialists and other health-care personnel, contributing to greater complexity and cost in the process of care[1,2]. This intricacy in health-care organization and delivery can result in suboptimal outcomes: increased costs, uneven quality, and greater fragmentation of care[1,3,4]. Although there was a slight decrease in the growth rate of the national health-care expenditures in 2010 and 2011, these expenses still account for 18% of the gross domestic product of the United States[5], higher than in any other country with a developed health-care system. In spite of substantial costs, the current health-care system provides inconsistent quality of care between different regions and within individual regions as well[3]. This article outlines leadership directives for the orthopaedic surgeon to create and lead effective multidisciplinary teaming as part of high-quality health-care delivery.

Increasing levels of specialization, subspecialization, and ultraspecialization in health care create greater fragmentation of expertise and numerous gaps of treatment in the patient-care process despite increasing numbers of provider personnel[6]. As a result, the health-care system is undergoing several important changes. At the center of the changing paradigm is a fundamental transformation from the supply-driven, silo-based physician system to a value-based system centered on maximizing patient outcomes with lowest costs[4]. One corresponding shift has been toward integrated health-care systems, emphasizing quality, multidisciplinary teams, and evidence-based clinical care innovation[7].

As today's orthopaedic patients present with increasingly complex comorbidities, efficient and effective teamwork among all specialties and disciplines is needed. Furthermore, integrated teamwork is associated with improved patient outcomes and increased cost savings[8-11]. Better coordination and integration among multiple disciplines of the health-care team allow for the identification and implementation of optimal, cost-effective clinical practices. In addition, coordinated integration facilitates the provision of higher quality, patient-centered health care while reducing costs[11-13]. Clearly, there is room for improvement in the process of care for orthopaedic patients. The appropriate transformations in orthopaedic care delivery should be led by the orthopaedic surgeon.

Orthopaedic surgeons must recognize the need for a revised viewpoint to implement teamwork guidelines with their fellow health-care professionals[14,15]. Established guidelines relate to teams that enjoy stable membership and well-defined tasks that enable the development of effective routines and camaraderie over time. In contrast, health-care professional collaborators often employ a dynamic form of teaming, a fluid and shifting mix of work partners to provide patient care[15]. Successful teaming led by an orthopaedic surgeon involves good coordination and communication, integration of different perspectives from multiple disciplines and specialties, and greater adaptability to both the evolving nature of health care and the dynamic aspect of patient care[15].

Foundation for Teaming in Orthopaedics

To follow teaming protocols, orthopaedic surgeons and other team members need to fundamentally change and adapt their thinking and management of patient care. However, as modifying practices and behavior will be met with resistance from all aspects of the health-care system, orthopaedic surgeons need to assume the leadership role. They are still responsible and accountable for their patients and can guide the necessary transformation toward successful teaming through the following steps:

Step 1. Recognize the urgency and need for collaboration
Comprehend that individual specialties and disciplines cannot take optimal care of today's patients alone, especially patients with complex comorbidities.

Step 2. Assemble the necessary members to lead the transformation
Reach out to professionals from disciplines that relate to the comorbidities of the patient and to any anticipated issues.

Step 3. Establish team goals
Emphasize why teaming is important for the patient's care and what goals of care the team would like to achieve.

Step 4. Communicate and exemplify the goals to assembled members
Teach and lead the team by example.

Step 5. Inspire and empower others toward a plan of action
Create a psychologically safe environment in which ideas can be tabled without fear of repercussions from a hierarchical structure.

Step 6. Implement the plan and maintain accurate records on the outcomes
Act on the plan. The key is to track not only outcomes but how the entire process unfolds from the initiation of the intervention.

Step 7. Structure and establish new approaches[16,17]
Analyze what worked and what did not. Attempt to standardize treatment approaches to similar future presentations.

The orthopaedic surgeon's modality of leadership must also adapt for implementation in a teaming environment. For the effective delivery of multidisciplinary care, the orthopaedic surgeon will need a new leadership role, no longer serving as the captain micromanaging every minute aspect of the cycle of care from initial consultation to the operation to outpatient

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IN HEALTH CARE

TABLE I Organizing to Execute Compared with Organizing to Learn[15]*		
Management Approach	Organizing to Execute	Organizing to Learn
Measuring performance	Did YOU do it right?	Did WE learn?
Structuring work	Separate expertise	Integrate expertise
Employee discretion allowed	Choose among options	Innovate and develop options
Means of empowerment	Employees can deviate from the script if special circumstances make it necessary	Employees can create their own approach
Works	When path forward is clear	When path forward is not clear

*This table outlines the management approach that the orthopaedic surgeon needs to take in order to organize health-care teams to learn and deliver effective patient care, and it compares this approach with the traditional organize-to-execute system.

care. The new leader must act as a steward, guiding the members toward the overall goal and shared vision of effective, efficient, and quality patient care[4,14].

The reason that most teams are set up to fail is because of their management structure. When teams are built to execute the captain's commands, as most are, failure can lead to inefficiency and negative patient outcomes[15]. When teams are built to learn, negative and positive experiences are combined to develop effective strategies[15]. Table I illustrates in detail the management strategies that the orthopaedic leadership needs to launch to promote learning for effective patient-centric care[15].

Common barriers to effective teamwork are a lack of coordination and gaps in communication. In order to establish an environment for effective teaming efforts, the orthopaedic surgeon must set an example behaviorally and emotionally. The mood, attitude, and behavior of the leader will impact the culture, behavior, and effectiveness of the entire team[2]. The orthopaedic surgeon must simultaneously motivate team members through support while mediating conflict resolution between team members. Teamwork is encouraged by rewarding members with positive feedback

through recognition and incentives[18]. The orthopaedic surgeon can further motivate the best and most innovative efforts of team members while also strengthening the team members' understanding of the task at hand. Recommendations include asking insightful questions and instigating evocative discussions[19].

Critically, successful teaming among specialties and disciplines is reliant on effective communication to learn and solve problems[15]. Effective communication is multifaceted and involves all parties. The orthopaedic surgeon must attentively listen to fellow team members while also carefully incorporating supportive behavior or body language into each response[20]. Through listening and responding to questions and ideas, the surgeon can address potential issues before they escalate. Such action inspires a "cycle of success and reward" that increases team performance while minimizing mistakes[21].

Conflict among team members negatively affects teaming efforts and patient outcomes[15,22]. Resolving these conflicts through effective management skills is imperative. Several key aspects of conflict resolution are maintaining calmness, focused problem-solving, and enhanced communication, especially

TABLE II Conflict-Management Strategies[22,25]*		
Strategy	Definition	Utility and Effectiveness
Accommodation	Deferring your own interests and concerns to satisfy the other party	May be appropriate to yield your point of view to settle minor conflicts. Unassertive, cooperative
Avoidance	Not addressing either side's interests or concerns immediately	May be appropriate when it is necessary to sidestep issue or postpone issue until a better time. Unassertive, uncooperative
Collaboration	Attempting to work with the other party to find a mutually fully satisfactory solution	May be appropriate to resolve major conflicts despite time and energy commitment. Assertive, cooperative
Competition	Pursing your interests or concerns at the other party's expense	May be appropriate if the other party refuses any to take any other approach. Assertive, uncooperative
Compromise	Finding a mutually acceptable solution that partially satisfies both parties	May be appropriate for seeking a quick middle ground and exchanging concessions. Moderately assertive, cooperative

*This table defines these different conflict-management strategies and also suggests the situations that may be most appropriate for each strategy.

TABLE III Characteristics Needed for an Orthopaedic Surgeon to Create a Psychologically Safe Environment[15]*
Characteristic
Is accessible and approachable
Admits when he or she does not know something, displays genuine humility
Is willing to display fallibility, creates psychological safety
Invites participation
Instead of punishing, encourages embracing error
When others cross boundaries set in advance and fail to perform up to these set standards, holds them accountable fairly and consistently

*This table outlines important characteristics for an orthopaedic surgeon to have when leading a team in order to create a psychologically safe environment.

during critical situations such as in the middle of a surgical procedure. Clear and open communication helps to minimize conflicts as well as reduce misunderstandings and surgical errors; 43% of mistakes in orthopaedic patient care arise from communication issues[23,24].

Short-term problem-solving skills are best suited for crisis control. Maintaining calmness is critical for the orthopaedic surgeon. The surgeon can prevent impairment in team performance, remain focused on the patient, and encourage similar attitudes in all team members through enhanced listening[25]. The surgeon should patiently and collaboratively analyze the situation and plan the next steps with all of the other members[25].

However, in utilizing focused problem-solving skills to concentrate on the immediate issues, the orthopaedic surgeon should recognize that the best means of conflict resolution may not always address the conflict immediately[23]. Compromise and collaboration are both effective long-term conflict-management strategies[22,25]. Compromise, as the most popular strategy in the health profession, is timely but only partially satisfies both parties[22,26]. In contrast, collaboration, although the most effective strategy, needs both time and energy but works toward a mutually fully satisfactory solution[22,26].

The process of negotiation, which forms the core of compromise and collaboration strategies, mirrors the standard history-taking and physical-examination methodology, as illustrated below:

• Slow down and listen with an open mind while attempting to understand the importance of objective information: *history-taking.*
• Actively collect objective information about the conflict and involve only those directly tied to the conflict: *physical examination.*
• Assess and determine the causes of the conflict, evaluating and organizing a mutually agreed upon plan of action involving the pertinent parties as necessary and dealing with the issue at the proper level: *differential diagnosis.*

• Determine possible obstacles after a final review and confirm mutual agreement for all sections of the plan: *preoperative planning and informed consent.*
• Execute and carry out the predetermined plan: *operation.*
• Continue to assess and evaluate, following up on the outcomes of the "operation"[22,24]: *postoperative care.*

Table II displays the various conflict-management strategies with respect to health-care teaming. In order to function as an effective leader, the orthopaedic surgeon should attempt to include these strategies in his or her interactions with the assembled team.

Importantly, the orthopaedic surgeon should create an environment in which teaming is effective and all health-care team members are comfortable. Such an environment should encourage creative thinking while tolerating mistakes, with an emphasis on learning rather than punishments[19]. Feedback is critical, and teams that foster feedback are more adaptable and better equipped to maximize on the summed potential of the diversity of the team[20,23].

By inviting critical feedback from all members, orthopaedic surgeons can help to eliminate the deep-rooted status hierarchy that exists in most health-care environments. Inequitable status hinders communication across professional boundaries[20,27]. Relevantly, patient outcomes are associated with the degree of hierarchy in health-care team interactions. Malpractice cases have revealed that in particularly hierarchal systems, surgeons ignored important information from nurses while nurses also withheld relevant information for diagnosis and treatment from surgeons[6,15].

Psychological safety describes an environment in which raising a nonconforming view is expected and welcomed, facilitating the development of innovative ideas[6]. Four characteristics are crucial to decisive corporate cultures. The orthopaedic surgeon who incorporates openness, candor, informality, and closure into the teaming environment can inject an atmosphere of psychological safety as well as stimulate creativity and maintain effectiveness[28]. Table III illustrates the characteristics a surgeon needs to demonstrate in order to establish a psychologically safe environment.

In addition to facilitating greater teaming within the orthopaedic staff, the orthopaedic surgeon also must effectively incorporate appropriate specialty physicians. Complex comorbidities may require cardiologists for patients with arrhythmias or prior acute coronary syndromes, neurologists for patients with seizure disorders or prior strokes, nephrologists for patients with chronic kidney disease or who are receiving dialysis, and infectious disease specialists for patients with increased risk of postoperative infections. The selection of team members should be accomplished by recruiting motivated individuals with the appropriate attitudes and skills[21]. It is critical to choose members for their skills and skill potential rather than their personality. Orthopaedic surgeons must also not hesitate to remove ineffective, destabilizing members to achieve a top-performing, multidisciplinary team[18,29].

Parameter	Hospital 1	Hospital 2	Hospital 3	Hospital 4
TABLE IV Summary and Implicit Frames for Minimally Invasive Cardiac Surgery Implementation Among Four Hospitals[15]*				
View of leader's role	Senior surgeon who communicated a need for help from his team	Junior surgeon who emphasized the critical role of team members	Senior surgeon who wanted to make it work single-handedly	Senior surgeon who minimized degree of challenge
Members' perception on speaking up	"I am very comfortable speaking up." –Nurse	"There's a free and open environment with input from everybody." –Nurse	"You pick your time to speak up about a problem." –Nurse	"People are afraid to speak out." –Nurse
View of project purpose	To help patients	To empower the team and accomplish goals	To demonstrate leading-edge capability	To stay competitive with other hospitals
Project outcome	Successful implementation	Successful implementation	Eventually abandoned	Abandoned early

*This table highlights the importance of framing by presenting the results of four hospitals that tried to implement minimally invasive cardiac surgery.

Teaming and the Learning Cycle in Orthopaedics

A proper foundation requires selecting compatible, effective team members and establishing a collaborative teaming environment. Next, the orthopaedic surgeon can proceed by guiding the multidisciplinary, multispecialty patient care team through a learning cycle of diagnosis, design, action, and reflection (Fig. 1). By employing the learning cycle, health-care teams can facilitate collective and collaborative learning throughout the entire cycle of care. This allows greater adaptability to overcome problems or other hurdles, especially in dynamic or nonroutine situations[15].

Diagnose

The first step of the cycle is defined as analyzing the situation and the challenge that lies ahead. First, the surgeon should frame the task for the rest of the members, presenting a clear goal and shared vision. Framing is defined as one's perspective on the task at hand, and it typically occurs passively and is shaped by previous experiences[15]. When hospitals attempted to successfully implement minimally invasive cardiac surgery, procedural framing was the single most powerful factor determining success[15]. Table IV summarizes the findings of two successful and two unsuccessful attempts by major hospitals to incorporate this technology based on the framing of the projects. These findings highlight how important framing is in setting the tone for the successful outcome of the process.

The orthopaedic surgeon needs to articulate and lead health-care personnel to unite around a shared purpose of comprehensive and effective patient care. Expected performance standards and direction are more easily established when the situation's urgency is conveyed up front[18]. The multidisciplinary and multispecialty team can also translate this purpose into specific performance goals to further member focus and improve performance[18].

Design

The second step is a shift from evaluating the situation to considering and selecting possibilities for action. In what order will each comorbidity be treated? In essence, this is the general plan of patient care. Which symptom is the most serious, and which aspects need to be prioritized? The depth of technology and complex tasks in health care today prohibit an orthopaedic surgeon from acting in isolation. Therefore, it is critical for team members who are not physicians to contribute to the design alongside surgeons and medical specialists. This is exactly the reason that a teaming environment is vital. Because of the previous strict hierarchical framework, this is often the most challenging component. It is vital for the surgeon to emphasize how important each member's role is, whether the member is another physician or a scrub technician. Each member needs to contribute. Even more importantly, the orthopaedic surgeon must also establish individual and mutual accountability for each role and each team member[18].
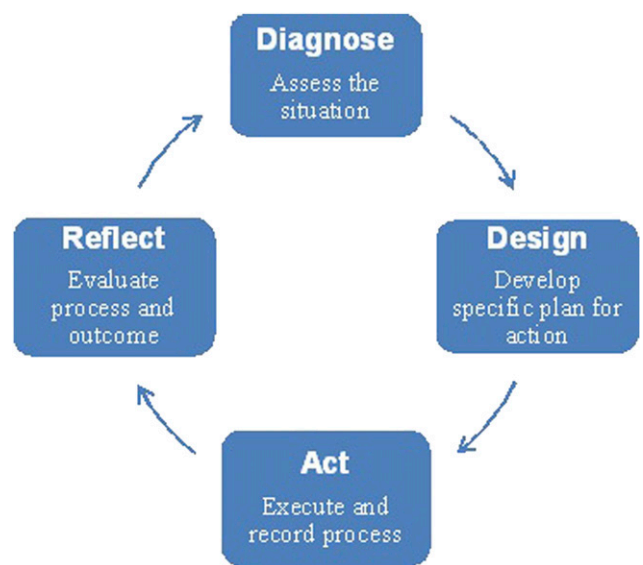

Fig. 1

Diagram depicting the learning cycle, tracing the process from diagnosis to design to action to reflection.

Act

The third step is the shift from talking to doing. Key to effective action is tracking what actually happens as well as the results that these actions produce. Traditional management controls emphasize outcomes data, which capture results. The teaming system pays just as much attention to process data, which describe how the work unfolds[15]. The individual who is conducting the process will record its details in the patient's file. Similarly, the individual who witnesses the outcome will record its details. Each patient encounter allows the team to gain experience in how to optimally address a similar issue in the future.

Reflect

The final step is crucial for understanding what worked and what did not as well as for preventing any identified failures from recurring. Four simple questions are addressed at the completion of each task: What did we set out to do? What actually happened, and were the treatment processes successful? Why did it happen, and what caused any possible complications or caused failure or success of the treatment? What can we improve next time, and how do we refine our procedures preoperatively, perioperatively, and postoperatively? Besides looking at what went wrong, it is just as crucial to reflect on what went right and to consider whether similar results would occur under different circumstances[30]. To encourage failure detection, orthopaedic surgeons need to be open to criticism from fellow team members, gathering data and feedback. Teams that iteratively engage in reflection and action perform best[16,31].

Failure detection and failure analysis are critical to learning, as they ultimately lead to discovering a system that may be generalized for any patient with a similar comorbidity, as well as guidelines that are only applicable in individual circumstances. However, it is more important to modify and improve thinking patterns. Technical changes and improvements are acute and specific, while correcting thought and behavior patterns better facilitates learning and adapting[30]. To maximize learning and the effectiveness of the learning cycle, the orthopaedic surgeon should emphasize the following three principles: (1) Learning occurs throughout the entire process of patient care. (2) Lessons derived from the learning cycle must be applied to future actions. (3) Everyone is accountable, especially the orthopaedic surgeon, for learning from episodes of care[30].

Teaming Templates That Improve Quality and Outcomes

Preliminary implementations of multidisciplinary teams have already demonstrated improvements in quality and outcomes for orthopaedic care. One version of the multidisciplinary team called the Hip Fracture Service integrates various disciplines, ranging from orthopaedic surgeons to geriatricians to specialty nurses, for improved coordination and collaboration on inpatient care for geriatric patients with hip fractures[32]. Over a period of eight years, under consistent orthopaedic and geriatric leadership, the Hip Fracture Service significantly decreased surgery time from inception to presentation while maintaining the comparably low time to surgery from the emergency room, length of stay, complication rate, and mortality rate[33]. Other hip-fracture multidisciplinary teams have also substantially decreased time to surgery, resulting in lowered patient mortality and a shortened hospital stay[34-36].

Another organizational variant of multidisciplinary teams is the integrated practice unit[4]. An integrated practice unit is a patient-centered team that includes all essential health-care personnel for that patient for the full cycle of care, not just for an individual disease but for all associated conditions or complications[4]. Employing this model for the care of patients with back pain, Virginia Mason Medical Center (Seattle, Washington) improved quality while lowering costs[37]. An excellent example of integrated practice unit success is patients presenting with back pain. Through integrated collaboration, new patient intake capacity increased, advanced imaging utilization decreased by 23%, patient satisfaction improved, and most importantly, the number of lost work days and therapy visits was reduced[37]. Overall thus far, integrated practice units have resulted in quicker treatment, improved outcomes, and decreased costs[4].

Another case study that demonstrates the effectiveness of successful multidisciplinary and integrated care is the Osteo-Arthritis Service Integration System (OASIS)[38]. Similarly to integrated practice units, OASIS provides care for one condition, osteoarthritis, and all accompanying complications[38]. OASIS integrates various specialists, including physical therapists and dietitians, who work together with the orthopaedic surgeon to help the patient manage his or her condition before and after surgery, which optimizes outcomes[38].

Conclusions

To confront current issues facing health care, orthopaedics is shifting toward a value-based system. Greater health-care teaming efforts will be necessary among multidisciplinary and multispecialty members to adapt to the rapidly advancing diagnostic and treatment modalities of increasingly complex patient care. The orthopaedic surgeon should lead this transformation, adopt the appropriate leadership roles, and employ the necessary leadership skills for successful teaming implementation. In addition to effectively motivating, communicating, and resolving conflicts in these teams, the orthopaedic surgeon is best suited to facilitate replacement of the well-established vertical hierarchy of orthopaedics in favor of an environment of open communication and mutual responsibility. Furthermore, the orthopaedic surgeon should facilitate a teaming model that maximizes adaptability and feedback implementation by utilizing the cycle of diagnosis, design, action, and reflection. In this manner, the orthopaedic surgeon actively implements a continually improving framework in each episode of care, providing the best value and quality for one's patients. ■

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