

Value-based Healthcare: Improving Outcomes through Patient Activation and Risk Factor Modification

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As orthopaedic surgery shifts toward value-based payment and delivery models [12], clinicians and payers alike are prioritizing efforts to identify patients at risk of poor clinical and patient-reported outcomes following an orthopaedic procedure.

A note from the Editor-in-Chief: We are pleased to present to readers of Clinical Orthopaedics and Related Research® the latest Value-based Healthcare column (formerly Orthopaedic Healthcare Worldwide). Value-based Healthcare explores strategies to enhance the value of musculoskeletal care by improving health outcomes and reducing the overall cost of care delivery. We welcome reader feedback on all of our columns and articles; please send your comments to eic@clinorthop.org.

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What if there was a measurable parameter that we could use to help patients improve their own health, inexpensively, and with little risk? Such a parameter exists—although surgeons likely do not know about it. That parameter is called patient activation, which is a patients' level of engagement in their own health.

In our view, the more engaged a patient is, the more “activated” they are in taking interest in and managing their health, as well as interacting with their surrounding health ecosystem. We believe this concept is especially relevant in the context of patient risk factors surrounding orthopaedic surgery. While identifying and ameliorating modifiable risk factors (BMI, high A1C, and smoking cessation) early along the care continuum can predictably improve patient-reported and clinical outcomes following surgery [5], the role of patient activation as a modifiable risk factor has not been definitively proven.

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Validated patient-reported survey instruments for measuring activation include the Patient Activation Measure (PAM-13/PAM-10) and the Effective Consumer Scale (EC-17) [7, 10]. Survey instruments like PAM specifically assesses activation and the personal and psychological competencies (knowledge, skills, confidence) required to manage one's health. The EC-17 scale is designed to measure an individual's skills, behaviors, and effectiveness in dealing with their condition and making decisions to effectively manage their health. Intuitively, the propensity to engage in adaptive health behaviors demands a level of self-efficacy, which can be measured using tools such as the validated Pain Self Efficacy Questionnaire [11].

These measures have been developed mostly for chronic conditions involving non-musculoskeletal populations. Not surprisingly, many orthopaedic surgeons are unaware of the concept of patient activation, let alone the existence of these measures. Still, there is a growing body of work in orthopaedics, particularly in upper extremity, spine, and total joint arthroplasty evaluating the impact of patient activation on clinical and patient-reported outcomes [5, 13, 14]. These studies found greater decreases in pain and disability, as well as improved adherence with physical therapy in patients who were more activated.

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Further, we found, that higher pre-operative patient activation was associated with better patient-reported outcomes after total joint arthroplasty [3].

Interventions that utilize the concept of activation in improving risk factors and modifying health outcomes have been carried out in a variety of settings (primary care, workplace, disease management programs) and health conditions [6]. A common theme involving the use of activation to modify patient outcomes has focused on skill development, problem solving, goal setting, and social support. While research has been limited in an orthopaedic setting, one study found that a clinician-facilitated, bedside multimedia intervention enhanced patient activation and participation in care after TKA, as well as decreased pain intensity and in-hospital length of stay [9].

There are still challenges, however, identifying how to empower and activate our patients. For example, providing unstructured feedback to patients about their patient-reported outcome scores did not clinically improve patients' activation score [1]. Future work should involve: (1) Enhanced psychometric evaluation tailored specifically to the needs of musculoskeletal patients and better validated tools that measure this concept more precisely and efficiently. (2) Work that consolidates the link between activation and risk factor modification and preventative health behaviors. (3) Interventions that improve activation including tools to improve patient self-management, awareness of patient preferences and values, and surgeon interpersonal communication skills to improve coping strategies.

Patient activation measures could also be used as screening tools to stratify patients based on activation level, informing surgeons and health systems

about patients at risk for poor outcomes. Pre-operative PAM scores can guide care delivery teams to improve patient appropriateness for surgery by directing at-risk patients with lower activation levels towards a care pathway that potentially investigates and addresses underlying factors and interventions focused on resiliency, self-efficacy, and mindset. Moreover, patient activation measures may be useful for risk stratification modeling for patient-reported outcome-based performance measures.

Although prior work has shown risk-factor modification (weight loss, smoking cessation, lowered AIC levels) to be beneficial in decreasing post-operative complications and improving clinical outcomes, patient activation itself could be the common trait that correlates with positive health outcomes [2, 4, 8]. The effect of weight loss on surgical outcomes may actually be driven by increased levels of activation (the patient is making a greater effort to take control of their health and engage with their surrounding healthcare ecosystem).

While the early evidence is compelling, gaps of knowledge still exist—unstructured counseling, for example, may not empower patients. Further work is required to understand the impact of cultivating peri-operative patient activation on recovery, quality of care, and quality of life [6]. Furthermore, as we shift the spotlight of care upstream, a more-activated patient may develop ways of adapting to their condition, and could avoid a surgical procedure altogether or potentially revision surgery in future. In other words, a more-activated patient may be better equipped with coping strategies to contend with the natural progression of disease. Adaptation and resilience may bear as much or more fruit than a focusing on specific risk factors alone. We encourage orthopaedic surgeons to study the effect of patient activation, its synergy with

modifiable risk factors, and to build on these findings to improve clinical and patient-reported outcomes.

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