



Value-based Healthcare

Value-based Healthcare: Preoperative Assessment and Global Optimization (PASS-GO): Improving Value in Total Joint Replacement Care

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In 2012, the Institute of Medicine convened a panel of chief executive officers from US healthcare organizations to discuss healthcare delivery transformation initiatives with

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the stated goal of providing better outcomes at lower costs [2]. The panel identified key strategies to achieve high-value healthcare including: (1) Evidence protocols to reduce variation and inefficiencies in care, (2) integrated care (finding the right team to provide the right care in the right setting), (3) shared decision-making to enable the patient and physician to make care decisions collaboratively, (4) targeted services (tailoring interventions for resource intensive patients), and (5) internal transparency on quality and cost performance measures [2].

Currently, there is wide variation across all phases of care for patients who undergo hip or knee arthroplasty, including preoperative use of imaging

and medical interventions, intraoperative implant choice and anesthetic technique, postoperative inpatient physical therapy and analgesic regimen, and postdischarge disposition and rehabilitation [1]. By decreasing this variation, hospitals and their clinicians can potentially improve quality and reduce costs for total joint arthroplasty episodes.

A central component of our perioperative management system at the Dell Medical School at the University of Texas at Austin is what we call the Preoperative Assessment and Global Optimization (PASS-GO) program, which realigns the conventional perioperative steps and decision points (Fig. 1). This perioperative management program encompasses the entire episode of care and is designed to guide patients and their family members through the complexities across the perioperative continuum. The program emphasizes patient-centered care, shared decision-making, rigorous process standardization, the use of evidence-based clinical care pathways to achieve current “best practices,”

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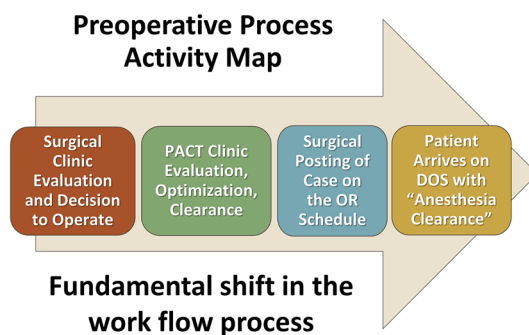


Fig. 1 The preoperative process and activity map highlights the realigned conventional preoperative steps and decision points. PACT = Perioperative Assessment, Consultation, and Treatment; OR = Operating room; DOS = Day of surgery. (Published with permission from Thomas R. Vetter MD, MPH).

Preoperative Management Matrix and Patient Categorization

Co-Morbidity: Based on ASA Physical Status Score and/or "Red Flags" Present on Preoperative Screening Questionnaires ↓	Surgical Procedure Class 1 (1 = Minimal)	Surgical Procedure Class 2	Surgical Procedure Class 3	Surgical Procedure Class 4	Surgical Procedure Class 5 (5 = High)
1	EXPRESS	EXPRESS	EXPRESS	EXPRESS	EXPRESS
2	EXPRESS	EXPRESS	PASS	PASS	PASS
3	PASS	GO	GO	GO	GO
4	PASS	GO	GO	GO	GO

Fig. 2 A preoperative management matrix and patient categorization chart is shown. Surgical Procedure Class = Level of surgical intensity based on invasiveness, physiologic stress, estimated blood loss, and expected postoperative intensive care unit (ICU) admission (ranges from Minimal = 1 to High = 5). ASA = American Society of Anesthesiologists. (Published with permission from Thomas R. Vetter MD, MPH).

Once a patient and the surgeon decide to pursue hip or knee replacement surgery, the PASS-GO process is initiated. A designated registered nurse in our integrated Perioperative Command Center conducts a telephone interview with all patients, collects information, and enters it into the patient’s electronic health record through an individualized “preoperative dashboard.” This information is made available to the surgeon, anesthesiologists, hospitalists, and other patient-care providers. All patients then undergo a brief preadmission testing visit for routine vital signs, standardized, evidence-based laboratory testing, electrocardiogram, a nasal swab culture, and a joint replacement education class.

Based on the data collected, the patient is risk-stratified by an advanced-practice registered nurse or physician assistant in the Perioperative Command Center, and designated into one of three associated care “swim lanes”—EXPRESS, PASS, or GO. This stratification is generated from a combination of preoperative comorbidities based on the results of a Preoperative Clearance and Consult Questionnaire [4], a set of risk screening tools, and the level of surgical intensity [3]. The level of intensity is based on invasiveness, physiologic stress, estimated blood loss, and planned postoperative

and robust coordination and integration of care. The overall goal is to improve not only surgical outcomes, but also to reduce costs, thereby improving the value (outcomes/cost) of care [5].

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intensive care unit admission (Fig. 2). Hip and knee replacement, for example, are considered moderate-intensity procedures [3]. The Perioperative Command Center team also assists in determining the patient’s immediate postdischarge disposition, including, when indicated, a site visit to the patient’s current residence for successful rehabilitation.

Individuals with minimal or no comorbid risk factors are designated as EXPRESS patients. EXPRESS patients can be scheduled for surgery immediately, have an additional brief telephone interview with an anesthesia nurse, and are evaluated by an anesthesiologist on the day of surgery (Fig. 3).

Patients with moderate comorbid risk factors are categorized as needing Preoperative Assessment (PASS). Patients in the PASS “swim lane” have a face-to-face, preoperative evaluation and management encounter with an advanced-practice provider, collaborating closely with an anesthesiologist or internist. Based on the patient’s particular needs, additional diagnostic tests may be performed, and the results reviewed with the patient and family/caregiver. Once the patient receives bona fide preoperative clearance from anesthesiology [4], the plan for postacute discharge care is collectively determined. Once the postdischarge plan is agreed upon, the

initial tentative scheduled surgery date is confirmed (Fig. 4).

Patients with major comorbid risk factors are categorized as needing Global Optimization (GO). GO patients have a more in-depth, face-to-face, preoperative consultation with a designated anesthesiologist or internist. Following this consultation, the patient may undergo further diagnostic testing, along with a pain management consultation and medical subspecialty consultations, if indicated. At this point, the surgeon, anesthesiologist, and internist confer and engage with the patient and family in a shared decision-making process about: (1) The risks versus benefits of surgery and anesthesia and (2) possible alternative therapeutic options to surgery (such as long-term medication management). Then, the final decision as to whether or not to proceed with surgery is made. If the care providers and patient/family decide together to proceed with surgery—and once the patient has undergone any necessary

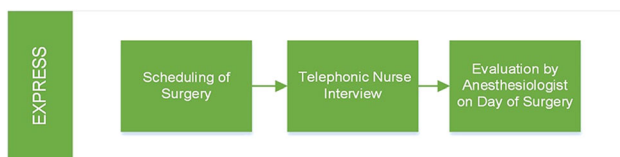


Fig. 3 Patients with no or only minimal risk factors undergoing minimally invasive surgery follow the “EXPRESS” lane. (Published with permission from Thomas R. Vetter MD, MPH).

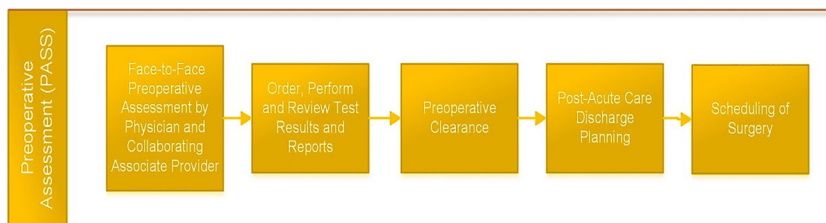


Fig. 4 Patients with moderate risk factors and/or undergoing moderately invasive surgery follow the “PASS” lane. (Published with permission from Thomas R. Vetter MD, MPH).

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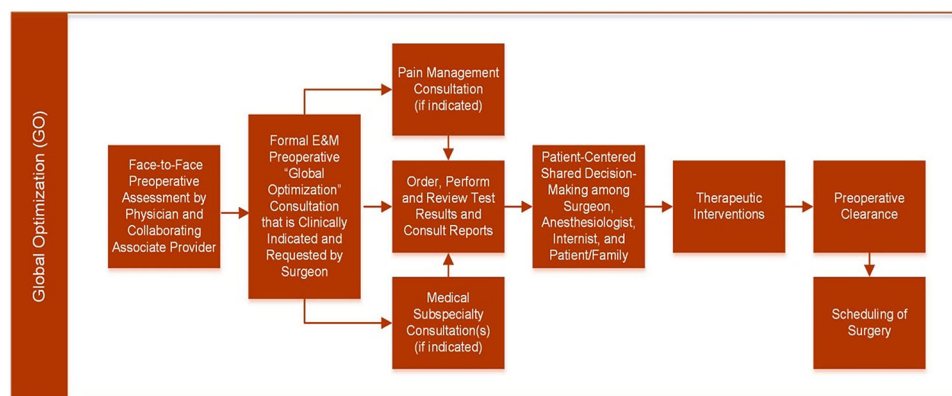


Fig. 5 Patients with comorbidity and undergoing intensive surgical procedures, who are at greater risk for complications, follow the “GO” lane. E & M = Evaluation and management. (Published with permission from Thomas R. Vetter MD, MPH).

therapeutic interventions, has been medically optimized, and has received bona fide preoperative clearance from anesthesiology [4]—the surgery is definitively scheduled (Fig. 5).

Our PASS-GO clinic is currently being piloted at our institution with two surgeons and costaffed by a core group of anesthesiologists and internal medicine “extensivists”—working in close collaboration and consistently communicating with the participating orthopaedic surgeons. Advanced-practice registered nurses and physician assistants are also important participants in this model.

A likely question is whether our program could be replicated elsewhere, and if so, what it would take in terms of institutional/structural support, personnel, and financing? Our PASS-GO program represents an

evolution and consolidation of the several existing system-wide Preadmission Testing (PAT) clinics into a more efficient “hub-and-spoke” model. In expanding the scope of these conventional PAT clinics, we are capitalizing upon their currently under-utilized advanced practice nurses by allowing them to “practice at the top of their license.” Furthermore, we are shifting a substantial portion of patient-provider interaction to the existing telecommunications and much broader telemedicine capability of our Perioperative Command Center. This will eventually include a robust online perioperative patient portal.

Still, our PASS-GO program involves considerable process reengineering and requires additional human and operational resources. We will be

rigorously evaluating whether this new approach can successfully increase standardization of care for patients, leading to improved safety, higher quality care, greater patient and provider satisfaction, lower costs, and ultimately, greater value for all its stakeholders.

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