



# User Guide for Enhancing the Utilization of **Patient-Reported Outcomes Measures (PROMs)** in Orthopaedic Practice

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# Background and Summary

To increase utilization of PROMs in orthopaedic clinical practice, American Academy of Orthopaedic Surgeons (AAOS) convened a project team to better understand facilitators and barriers in effectively utilizing PROMs and the benefits of consistent utilization to clinicians and patients. One of the results of that work is this User Guide, which will help AAOS members and the population at large to better understand the facilitators and barriers of effectively using PROMs in clinical practice as well as the benefits of consistent use to clinicians and patients. We will also outline resources and processes that can help our members realize those benefits to their own practices and the orthopaedic patient population.

Our work revealed that effective PROMs utilization cannot only enhance the quality of patient care, satisfaction, and experience, but can also enhance practice efficiencies, diminish insurance pre-authorization burden for orthopaedic practices, and drive practice growth.

Our challenge was to redefine the tools we are using to measure pain, function, and Quality of Life (QoL), as well as shed a brighter light on the patient's perspective to better understand what patients value in orthopaedic care, and more specifically their understanding and appreciation of PROMs tools.



# BARRIERS TO ADOPTION

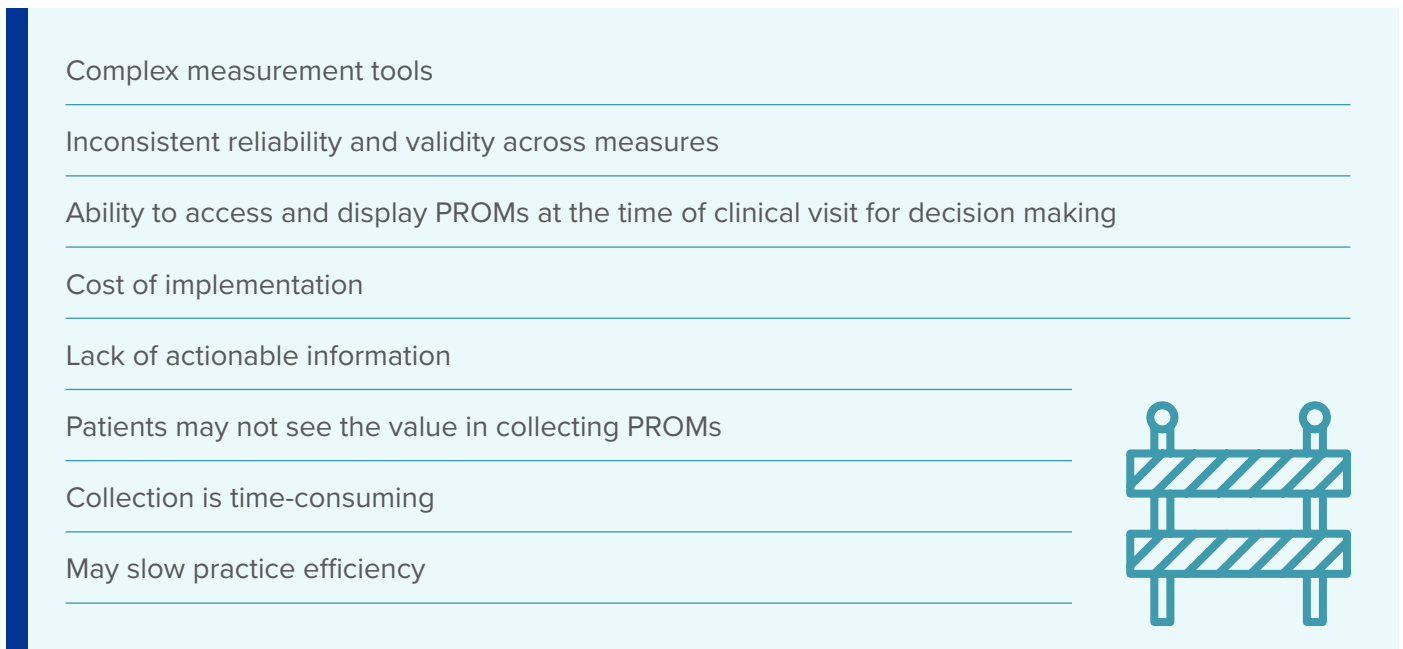
## Why aren't we utilizing PROMs more consistently?

Our research indicates that the barriers to adoption are vast. Perceptual barriers revolve around how clinicians, patients, and organizations feel and think about PROMs. Many clinicians feel that PROMs tools are complex and difficult to use, and are concerned about it taking away time from their schedules. There are also perceptions that using PROMs is a resource-intensive process, requiring substantial administrative support and/or robust technology. Often, clinical practices struggle to incorporate PROMs into their existing workflows due to a variety of factors:

- Even with PROMs scores available in the EMR, they require the clinician to move through a series of screens to visualize the scores.
- The PROMs scores are not displayed in a way the patient (or even occasionally the clinician) can understand.
- Data is often incomplete or not meaningful for clinical decision-making.
- A well-structured process to define the goals of PROMs utilization and develop a process that supports those goals is not present.

Given that in general, payers today are not compensating for PROMs utilization, some organizations have concluded that the benefits are not worth the effort. This furthers the perception that there are unsurmountable barriers to effectively utilizing PROMs.

**Figure 1:** Perceived barriers to implementing PROMs



# FACILITATORS TO ADOPTION

## What best practices and perspectives can be deployed to enhance utilization?

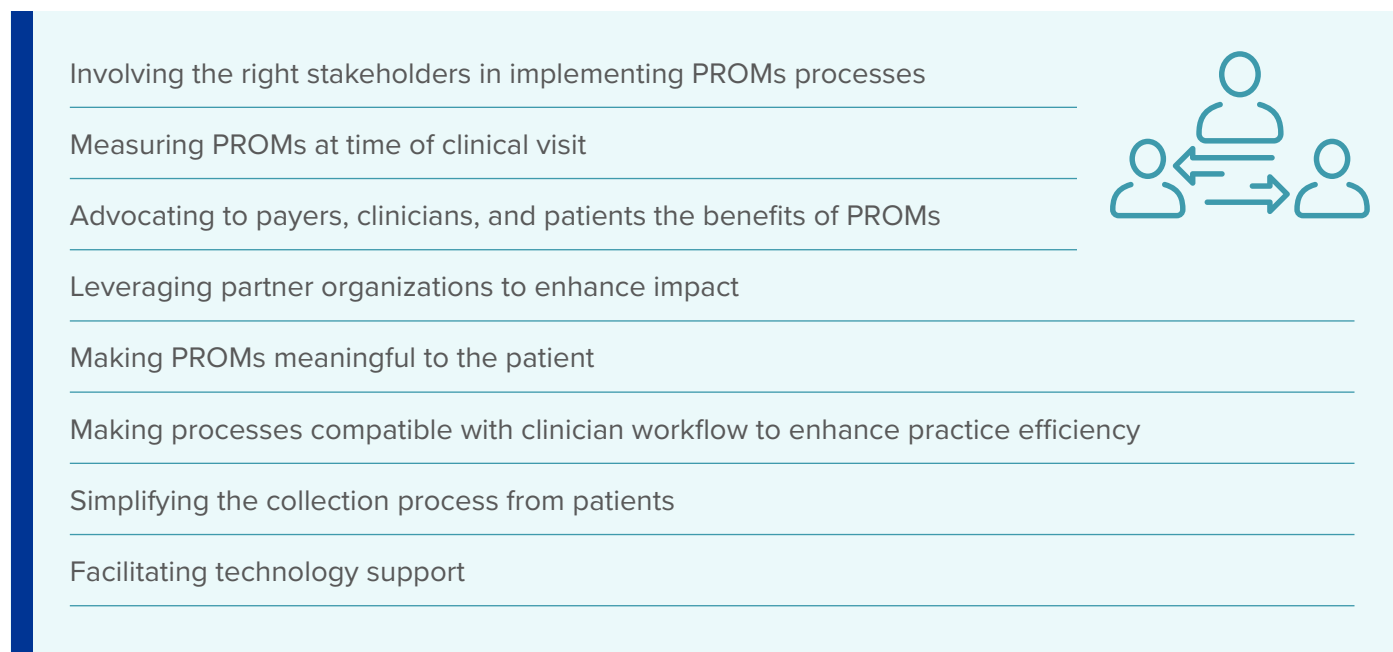
One of the biggest catalysts to PROMs adoption is involving relevant stakeholders (clinicians, implementation leads, patients, practice leadership, etc.) in the planning and implementation process. It is imperative that the clinicians choose PROMs that they feel are relevant and that PROMs utilization be incorporated into existing workflows.

By using patient-friendly versions of PROMs that are easy for the patient to understand, clinicians can reduce the amount of time they spend explaining the PROMs score. Additionally, incorporating technology that can support and simplify the process for the patient to easily complete the questionnaires prior to their clinician visit, and ensuring that the clinician can easily access the scores during the patient visit can facilitate utilization.

When patients and clinicians see the value in PROMs, it greatly increases the likelihood of adoption. Identifying the outcomes desired by individual patients is crucial for both the clinicians and patients to feel that PROMs are useful.

Payers are beginning to mandate PROMs measurement to demonstrate the value of surgical intervention. For example, CMS has included PROMs measurement in its value-based care initiatives. Although this addresses the proverbial “stick” incentive, other payers have used reduced preauthorization burden for clinicians effectively utilizing PROMs as a “carrot” incentive, and have steered patients to Centers of Excellence (COE), identified as those that effectively utilize PROMs.

**Figure 2:** Facilitators to PROMs adoption



# IMPLEMENTATION PLANNING

## Seven steps to implementing PROMs in your practice

To facilitate the effective utilization of PROMs in orthopaedics, one must begin with the end in mind, and tailor the program to meet the goals of the patients they work with and the practice setting they work within, as challenges and catalysts to effectively utilizing PROMs varies substantially depending on the type of clinical organization within which these initiatives are being implemented.

### **STEP 1** Identify your goals

What are you hoping to get out of the process? The benefits to clinicians and patients can be substantial but will vary based on your practice and patient population. Perhaps you are simply trying to comply with new CMS mandates, or perhaps you see this as an avenue to enhance efficiency in shared decision-making with your patients. Regardless, to establish the right process, you must understand what you are trying to accomplish.

**Figure 3:** Clinician and patient benefits of effectively utilizing PROMs

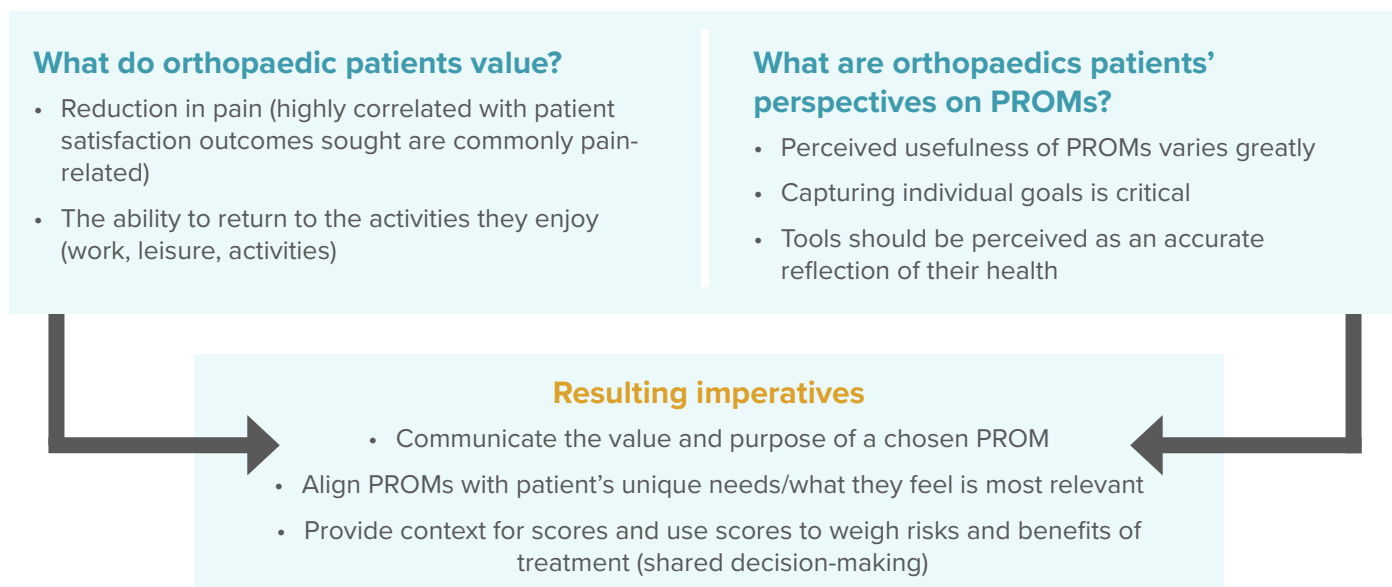
<b>QUALITY ASSURANCE</b>	<ul style="list-style-type: none"><li>• Define outcomes retrospectively</li><li>• Drive clinical innovation</li><li>• Detect pre-existing conditions that have not been identified earlier</li><li>• Understand actual outcome relative to patient expectations</li><li>• Promote health equity</li></ul>
<b>BUSINESS DEVELOPMENT</b>	<ul style="list-style-type: none"><li>• Capability to leverage good outcomes in marketing</li><li>• Improved patient experience drives patient loyalty</li><li>• Ease of finding qualified clinicians</li></ul>
<b>PATIENT OPTIMIZATION</b>	<ul style="list-style-type: none"><li>• Use surgeon time more effectively/operational improvements</li><li>• Inform decision-making and patient-clinician agreement</li><li>• Ensures the right treatment for the specific patient</li></ul>
<b>PAYER/PAYMENT</b>	<ul style="list-style-type: none"><li>• Comply with payer mandates</li><li>• Enhanced payment for time spent with patient/correct coding</li><li>• Payer steerage with COE designation</li><li>• Good outcomes = reduced preauthorization burden and diminished wait time from diagnosis to appropriate intervention</li></ul>



## What do patients value in orthopaedic care and PROMs utilization?

The patient perspective should be considered when determining the goals of your process. As part of the PROMs project, patient interviews and research were conducted to better understand the patients' perspective on PROMs. We sought to understand what orthopaedic patients value in general as well as their perspective on PROMs utilization and to manage their expectations. In nearly every interview conducted, patients voiced that the single most important element that would make the process valuable to them was to measure their success based on their individual goal. For example, returning to running, kneeling to garden or worship, or working without pain were all specific individual goals for the patients that we interviewed. Most of these patients reported that their surgeon didn't address these specific goals when making the decision to have surgery. Other insights gained from this research indicate that clinicians must articulate the value of the PROMs measure chosen and to provide context for the score to support the shared decision-making process.

**Figure 4:** What do patients value in orthopaedic care and PROMs utilization?



## **STEP 2** Engage stakeholders for input

This is perhaps the most critical but overlooked step in the process. Valuable perspectives can be gained and accurate current processes and protocols reflected by collecting input from referral sources to intake coordinators, clinical staff across sites of care, physicians, technology support staff, nurse navigators, administrators, and perhaps process engineers to help document and identify areas to enhance efficiency can be helpful to the process. These individuals will likely continue to be involved at relevant points in the process.

You may also want to appoint implementation leads who can work across clinicians and departments to summarize input, establish work plans, identify resource needs, and ensure the project is on-track.



### STEP 3

## Understand your current stage of development

AAOS has developed a succinct scoring tool to assist members in understanding their stage of PROMs program development and opportunities for program advancement. The tool can assist you in objectively quantifying the maturity of your PROMs program as well as measure progress in development as initiatives are completed. The tool can be found in the [Appendix A](#) or on the [AAOS website](#).

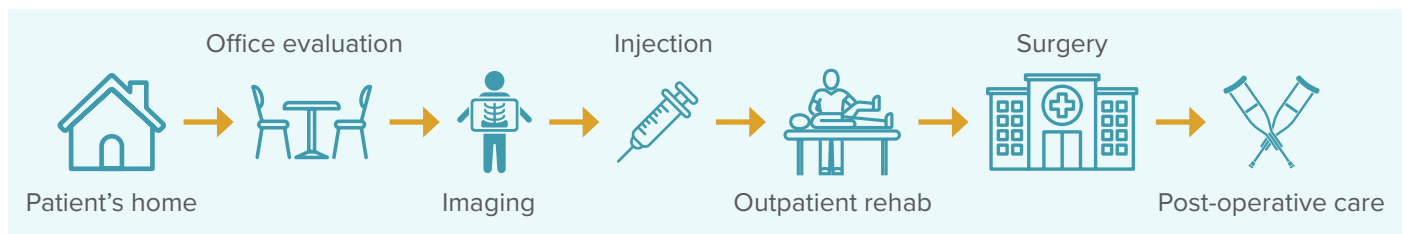
### STEP 4

## Understand and document your current processes to identify how PROMs can enhance those

Understanding your practice's current processes for decision-making and care delivery is critical, as is understanding the same for the organizations you work with, such as imaging centers, outpatient rehab clinics, ambulatory surgery centers, and hospitals and the departments within them such as pre-admission testing, patient education, nursing, and rehabilitation. Think about every step in the process from the moment a patient experiences a problem through each step in the care journey. It might be helpful to draw a visual diagram of each step in the process and see how they are connected.

Next, think about where PROMs would fit into the process. Consider when PROMs would be introduced to the patient, when patients would complete PROMs questionnaires, and how/when their scores would be reviewed and utilized. It is ideal that PROMs are used earlier in the care process so they can help steer the care path.

As you complete this exercise, ask key questions about the care journey to best understand how to build your PROMs program. An example of a care pathway and key questions to establish processes is outlined below:





**Figure 5:** Sample care pathway and key questions for PROMs program development

TECHNOLOGY SUPPORT	CLINICAL	OPERATIONAL	PARTNER INTEGRATION
Does our program have the capability to collect intake information virtually and how can/should PROMs instruments be incorporated into that?	Are there guidelines in place for PROMs scores that trigger a specific intervention? What are those and/or should those be established for a particular patient population?	Are we measuring PROMs today and if so, who is collecting that data and how? (i.e., nurse navigator via paper form at the time of decision for surgery)	How are our partners (i.e., hospital, MSO, vendors) interacting with the patient (particularly as it relates to a surgical episode) and how can we avoid duplicating efforts and creating survey fatigue for our patients?
What systems (i.e., scheduling, EMR, text message) are in place that will allow us to get PROMs data to the physician efficiently at the time of care to support shared decision-making?	How are we measuring patient readiness for surgery, and who is involved in that decision? How are we sharing that information across specialties/departments?	How is the PROMs score communicated to the physician today? How can that be done efficiently?	What forms and patient intake information are being gathered from each partner? How can that process be streamlined as we add PROMs data?
Does the program have the capability to capture intake information in the office electronically (i.e., via iPad or tablet)?	What instruments will we use? Do those measures incorporate a whole-person health score? Do they incorporate an individual patient goal?	What messaging is in place (or needs to be developed) to assist our staff in communicating the importance of PROMs to our patients?	When a patient needs a referral outside of the practice how are we using (or how should we use) PROMs data to inform the clinician who will see the patient next?
What technologies are in place to efficiently communicate other studies to the physician during the encounter that can be replicated for PROMs data?	How can we adapt tools to ensure patients understand them?	What workflow inefficiencies exist today and can we use PROMs to alleviate any of those?	What needs to occur to ensure our technology platforms can communicate with our partners' platforms to share PROMs data? (i.e., EMR, registries)



## STEP 5

### Design your program








This is the point at which you will:

- Determine the PROMs instruments that will be utilized, ensuring that the tools chosen are those that clinicians perceive as valid, relevant, and useful. The tools should also incorporate whole-person health and an individual patient goal.
- Identify the process for gathering data, identify how to support patients in completing assessments as well as reducing burden on clinicians and administrators. Designing a process which ensures the clinician can review scores prior to seeing the patient so that they can be incorporated into decision-making is critical. Consider in-office collection as a less resource-intensive solution (as opposed to home collection).
- Beginning with a single pre-visit PROM should be a priority, with expansion to multi-month utilization as the program progresses
- Creating dashboards (to easily visualize patients who have completed questionnaires), as well as ensuring graphical displays are easily understandable to both the patient and clinician is a key step in this process.
- Using non-clinical staff, such as administrative staff, to assist in the implementation of PROMS by doing things like teaching patients how to use them and reminding patients to complete them. This reduces the burden on the clinicians.
  - Establish messaging to support the importance of utilizing PROMs to address the specific goals of your practice. For example, educating patients about why PROMs are important and how the data will be used to benefit them can substantially increase compliance and should be communicated intentionally. Ensure the staff that will be assisting patients in collecting PROMs understand these key messages and that any messaging is incorporated into the technology solutions you may choose. Do not leave it to chance that your staff will understand how to message this to patients.
- Determine where the data will be stored and who “owns” the data, as well as who can access it and how it will be accessed.
- Determine how results should be interpreted. You may want to develop thresholds for a particular intervention or referral to another specialist.
- Identify who will need to be trained, and ensure messaging and tools are in place for that education.
- You should also determine the metrics that will be used to measure success. AAOS has developed a list of metrics that may be valuable to track to evaluate your progress and impact:
  - Uptick in utilization of PROMs measured by the percentage of your patient population (initial and/ or follow-up scores), number of surgical episodes, anatomical areas evaluated, or clinicians utilizing PROMs.
  - Demonstrating improved health equity through collection rates that are consistent across socioeconomic, ethnic, and racial groups.
  - An increase in the development score of your program using the [AAOS PROMs Scoring Tool](#)
  - Number of pre-authorizations for care avoided through effective utilization and communication of PROMs to payors.
  - Percentage of interventions that correlate with protocols established that use PROMs as an indicator for intervention.
  - Patient satisfaction scores increase.



**Figure 6:** AAOS recommended PROMs and whole-health measure scores

AAOS partnered with the orthopaedic specialty societies to develop recommendations of instruments to be used for various anatomical areas. These recommendations can be found below:

 <b>ELBOW, WRIST, AND HAND</b>	 <b>FOOT AND ANKLE</b>	 <b>SPINE</b>	 <b>WHOLE-PERSON HEALTH SCORE</b>
<ul style="list-style-type: none"> <li>Disabilities of the Arm Shoulder and Hand Score (DASH)</li> <li>Quick DASH</li> </ul>	<ul style="list-style-type: none"> <li>Foot and Ankle Ability Measure (FAAM)</li> <li>Foot and Ankle Disability Index (FADI)</li> </ul>	<ul style="list-style-type: none"> <li>Oswerty Disability Index (ODI)*</li> <li>Neck Disability Index (NDI)*</li> </ul>	<ul style="list-style-type: none"> <li>Patient-Reported Outcomes Measurement Information System (PROMIS) 10-Item Global Health*</li> <li>Veterans RAND 12 Item Health Survey (VR-12)*</li> <li>EQ-5D**</li> </ul>
 <b>KNEE</b>	 <b>HIP</b>	 <b>SHOULDER</b>	
<ul style="list-style-type: none"> <li>International Knee Documentation Committee (IKDC)</li> <li>Subjective Keen Form (Pedi - IKDC)</li> <li>MARX Activity Rating Scale</li> <li>Knee Injury and Osteoarthritis Outcome Score (KOOS)**</li> <li>Knee injury and Osteoarthritis Outcome Score JR (KOOS, JR)*</li> </ul>	<ul style="list-style-type: none"> <li>Hip Disability and Osteoarthritis Outcomes Survey (HOOS)**</li> <li>Hip Disability and Osteoarthritis Outcome Survey JR (HOOS, JR)*</li> </ul>	<ul style="list-style-type: none"> <li>American Shoulder and Elbow Surgeons Standardized Shoulder Assessment Form (ASES)*</li> <li>Oxford Shoulder Score (OSS)</li> <li>Western Ontario Shoulder Instability Index (WOSI)</li> </ul>	

\*The AAOS Registry Program utilizes this instrument for one of these registries: The American Joint Replacement Registry (AJRR), Shoulder & Elbow Registry (SER), and American Spine Registry (ASR).

\*\* AJRR also accepts the HOOS, KOOS, and EQ-5D final score as well as some additional instruments not on this list. ASR also accepts EQ-5D final score as well as different variations of PROMIS.

The Fracture & Trauma Registry and Musculoskeletal Registry instruments are not mentioned in this grid, but the AAOS Registry team would be happy to discuss all the instruments available. More information about the Registry Program can be found at [www.aaos.org/registries](http://www.aaos.org/registries).





## Conduct training

Next, conduct practical training to review the process for utilizing PROMs, the responsibilities of staff in collecting the information, how the data is accessed and interpreted, and best practices in sharing the information with patients. It is critical to include training for all stakeholders that will have a role in the process, whether that be collecting the data, answering patient questions about completing forms, identifying pathways and/or next steps for patients depending on their score, and sensitively communicating with patients and other clinicians about the results.



## Implementation

This phase typically begins with a pilot of a small number of patients or the patients of a single or few clinician champions to ensure clinicians are comfortable with the process and identify any gaps in the process that were not previously identified. The bugs should be worked out in this phase before rolling the process out to a wider audience and patient population. During a pilot phase (and beyond), there should be opportunities to provide feedback.

### Utilization in clinical practice: PROMs considerations by program type

Any practice, from a small independent group to a large academic medical center, can benefit from more consistent PROMs utilization, and can reach the highest level of program development regardless of its size. There are often particular benefits and challenges that correlate with the practice type and goals the practice has set out for itself. In Figure 7, we have outlined some goals and considerations below that may be typical for various practice types. Although your practice may not fit cleanly into one of the [categories below](#), understanding how you might customize your program by considering different practice segments can assist the development of a program that works best for you.



**Figure 7:** Goals and considerations by practice type

LOCATION	GOAL(S)	IMPLEMENTATION CONSIDERATIONS	TECHNOLOGY SUPPORT	STAKEHOLDERS
<b>HOSPITAL EMPLOYED PRACTICE</b>	<ul style="list-style-type: none"> <li>Streamline decision-making</li> <li>Enhance workflows in practice setting</li> </ul>	<ul style="list-style-type: none"> <li>Be aware of duplicative processes for collecting PROMs that may be in place through other hospital efforts</li> <li>May need to consider existing processes for PROMs collection</li> </ul>	<ul style="list-style-type: none"> <li>May have more robust EMR to leverage that has enhanced capabilities for utilizing PROMs</li> <li>Tools may be in place for other service lines that can support orthopaedic efforts</li> </ul>	<ul style="list-style-type: none"> <li>May have process engineers, lean-trained resources to assist in planning and implementation efforts</li> <li>Include stakeholders across all relevant departments</li> <li>Ensure physician-led efforts to drive clinical decision-making</li> </ul>
<b>ACADEMIC MEDICAL CENTER</b>	<ul style="list-style-type: none"> <li>Use PROMs for research projects to define clinical protocols to be used nationally</li> </ul>	<ul style="list-style-type: none"> <li>May support other research efforts</li> <li>Leverage volume of patients to establish more reliable protocols and pathways</li> <li>Learnings can be shared across industry</li> </ul>	<ul style="list-style-type: none"> <li>May have resources to create unique PROMs technology solution</li> </ul>	<ul style="list-style-type: none"> <li>May have process engineers, lean-trained resources to assist in planning and implementation efforts</li> <li>Include stakeholders across all relevant departments and ensure appropriate training occurs</li> </ul>
<b>LARGE INDEPENDENT PHYSICIAN PRACTICE</b>	<ul style="list-style-type: none"> <li>Reduce pre-authorization burden</li> <li>Streamline care processes and decision-making</li> </ul>	<ul style="list-style-type: none"> <li>Can customize processes based on what works best for the clinician practice and their patients</li> </ul>	<ul style="list-style-type: none"> <li>May consider an outside resource/platform with capabilities to assist in data analysis, compliance with collection, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Particularly if the practice owns an ASC, may require less collaboration with those outside of the practice, with more control from the physicians</li> </ul>
<b>SMALLER PRACTICE W/ LIMITED RESOURCES</b>	<ul style="list-style-type: none"> <li>Comply with CMS mandates</li> <li>Utilize clinician time with patients more efficiently</li> </ul>	<ul style="list-style-type: none"> <li>Highly customizable protocols are easier to implement</li> <li>Training needs are less robust</li> </ul>	<ul style="list-style-type: none"> <li>May need to prioritize efforts that leverage existing technology or a QR code process that can be developed with minimal resources</li> </ul>	<ul style="list-style-type: none"> <li>Will likely need to rely on internal resources/practice administration to support process</li> </ul>



# APPENDIX A

## PROMs Utilization Scoring Tool

Please visit [www.aaos.org/promsscoringtool](http://www.aaos.org/promsscoringtool) for an interactive version of this tool

To increase utilization of PROMs in Orthopaedic clinical practice, AAOS convened a project team to better understand facilitators and barriers in effectively utilizing PROMs and the benefits of consistent utilization to clinicians and patients. Our work revealed that effective PROMs utilization can not only enhance the quality of patient care and experience, but can also enhance practice efficiencies, diminish pre-authorization burden for interventions, and drive practice growth.

Instructions: For each component your program has implemented, one point should be added. If the program does not include the component outlined, a zero should be recorded.

	COMPONENT	SCORE	BENEFIT
Typically represents programs early in PROMs development	Program collects baseline measure of PROM s for one subspecialty (i.e., TJR, Spine, Trauma)		Complies with mandates, establishes baseline
	PROMs measurement includes/incorporates measures of general health (i.e., PROMIS-10, VR-12, EQ-5D)		Considers patient overall health, enhances patient experience/perception of provider empathy
	Capability to display PROMs at time of encounter exists		Allows for real-time decision- making
	Individual patient preferences and values are incorporated into process (i.e., return to sport or favorite activity)		Provides insight into patient expectations, enhances patient experience
	Tools are utilized to facilitate shared decision-making		Supports objective clinical decision-making
	Tools are used as predictor of outcome and feed post-intervention treatment planning		Provides efficiency and clarity in care path
	Pre-and post-op PROMs comparison is utilized to define successful outcome		Identifies successful interventions
Typically represents mid- development programs	Program collects baseline measure of PROMs for two subspecialties (i.e., TJR, Spine, Trauma)		Expands collection (i.e., beyond mandated specialties)
	PROMs process is utilized a clinician workflow enhancement (i.e., used as triage tool or to define patients who need to see physician for follow up)		Enhances practice efficiency
	Technology is utilized to support PROMs measurement		Supports process, diminishes staff burden
	Program has achieved COE designation from external certifying organization based on PROMs utilization		Supports program growth
	PROMs have been utilized to reduce pre-authorization for some procedures (i.e., “gold-carding”)		Enhances clinician and staff efficiency
	PROMs are used in marketing efforts		Supports program growth
	PROMs are submitted to one or more registries for benchmarking		Allows for benchmarking capability and protocol modifications
	Percentage of post-operative PROMs measurement for surgical cases is >25%		Supports understanding of intervention efficacy
Typically represents well-resourced Mature Programs	Program collects baseline measure of PROMs for three or more subspecialties (i.e., TJR, Spine, Trauma)		Expands collection across broader population(s)
	Program performs quality improvement initiatives to inform treatment protocols at a societal/population level		Drives clinical innovation and program awareness
	Percentage of post-operative PROMs measurement for surgical cases is >50%		Supports understanding of intervention efficacy

A score of 1-8 Indicates Early Development, 8-15 Indicates Mid-Development, 16+ Indicates Advanced

Note: If your score is above 15 or you are consistently achieving above 70% collection rate of follow-up PROMs scores, please contact our project team. We would appreciate hearing the drivers of your success.



## APPENDIX B

### References

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