

Clinical Performance Measures

Osteoarthritis of the Knee

Tools Developed by Physicians for Physicians

Provided by:

American Academy of Orthopaedic Surgeons
Physician Consortium for Performance Improvement

Purpose

This measurement tool provides physicians with *evidence-based*¹ clinical performance measures, including a data collection flowsheet, that may be useful for quality improvement activities within physician practices. The measures and flowsheet are intended for prospective data collection only. The ability to track changes over time is integral to the concept of continuous quality improvement in patient care. Evidence-based clinical performance measures have been identified as a means for tracking these changes.

These measures are provided for physicians by the **American Academy of Orthopaedic Surgeons (AAOS)** and the **Physician Consortium for Performance Improvement (The Consortium)**. The AAOS, with 24,000 members internationally, provides educational programs and develops practice management tools for orthopaedic surgeons and allied health professionals. The AAOS also works to inform the public about the science of orthopaedics and serves as an advocate for improved patient care. Toward this end, the AAOS supports the development of evidence-based measures and tools to enhance the quality of care for patients with orthopaedic conditions.

The Consortium is a physician-led initiative that includes methodological experts, clinical experts representing more than 50 national medical specialty societies, state medical societies, the Agency for Healthcare Research and Quality, and the Centers for Medicare and Medicaid Services. The Consortium's vision is to fulfill the responsibility of physicians to patient care, public health, and safety by becoming the leading source organization for evidence-based clinical performance measures and outcomes reporting tools for physicians.

Performance measures must be designed based on their intended purpose.^{2,3} The measures presented here are intended to facilitate individual physician quality improvement. Therefore, there are no minimum sample size requirements, and the suggested feedback is sufficiently detailed to pinpoint areas of concern for the physician (eg, an NSAID risk assessment was completed on each patient receiving prescribed or OTC NSAIDs). The measures defined in this measurement tool are not intended, and should not be used, for physician comparison.⁴

Performance measures are not clinical guidelines; rather, measures are derived from evidence-based clinical guidelines and indicate whether or not or how often a process or outcome of care occurs.² Performance measures provide important information to a physician, allowing him or her to enhance the quality of care delivered to patients.

This Physician Performance Measurement Set (PPMS) was developed by the Physician Consortium for Performance Improvement (The Consortium) to facilitate quality improvement activities by physicians. The performance measures contained in this PPMS are not clinical guidelines and do not establish a standard of medical care. This PPMS is intended to assist physicians in enhancing quality of care and is not intended for comparing individual physicians to each other or for individual physician accountability by comparing physician performance against the measure or guideline. The Consortium has not tested this PPMS.

This PPMS is subject to review and may be revised or rescinded at any time by The Consortium. The PPMS may not be altered without the prior written approval of The Consortium. A PPMS developed by The Consortium, while copyrighted, can be reproduced and distributed, without modification, for noncommercial purposes. Any other use is subject to the approval of The Consortium. Neither The Consortium nor its members shall be responsible for any use of this PPMS. Clinical measures and data are being provided in accordance with the Data Rights Agreement between the Centers for Medicare & Medicaid Services and the American Medical Association.

Statistics on Osteoarthritis of the Knee

Osteoarthritis (OA), also known as degenerative joint disease, is the most common form of arthritis and a leading cause of disability.⁵ The risk for disability attributable to OA of the knee is as great as the risk attributable to cardiovascular disease and greater than that attributable to any other medical condition in elderly persons.^{6,7}

- OA of the knee affects at least 12% of American adults, aged 65 years and older.⁸
- Symptomatic OA of the knee affects at least 6% of American adults aged 30 years and older.⁸
- Approximately 10 million American adults were diagnosed with osteoarthritis in 1999.⁹

Statistics on Current Practice

Although there is no known cure for OA, treatment designed for the individual patient aims to reduce pain, maintain or improve joint mobility, and limit functional impairment.¹⁰⁻¹² Currently, there are insufficient data regarding gaps in current practice relevant to the treatment of osteoarthritis of the knee.

Selected Evidence-Based Clinical Guidelines

Evidence-based clinical practice guidelines are available for the management of OA of the knee. This measurement set is based on clinical guidelines from the following:

- American Academy of Orthopaedic Surgeons¹¹
- American College of Rheumatology¹²
- American Geriatrics Society^{13, 14}

The performance measures found in this document have been developed in agreement with these guidelines, enabling the physician to track his or her performance in individual patient care and across patient populations. *Please note that treatment must be based on individual patient needs and professional judgment.*

For more information and updates, including a list of practicing physicians and other experts who developed this measurement set, please visit The Consortium's Web site

www.ama-assn.org/go/quality

Relevant Physician Specialties, Patient Population, and Settings of Care

These performance measures are designed for:

- Use by any physician who manages the ongoing care of patients who have reached skeletal maturity (aged ≥ 21 years) with a confirmed diagnosis of OA of the knee.
- Prospective data collection in the office-based practice setting only.

**American Academy of Orthopaedic Surgeons and
Physician Consortium for Performance Improvement
Osteoarthritis of the Knee Core Physician Performance Measurement Set^a**

	Clinical Recommendations	Clinical Performance Measures Per Reporting Year^b	
Symptom and Functional Assessment	An assessment of the patient's symptoms and functional status is recommended. ^{11,14} (Serves as a basis for treatment modification)	Percentage of patient visits with assessment for current level of satisfaction with symptoms and functional status Numerator = Patient visits with assessment for current level of satisfaction with symptoms and functional status Denominator = All patient visits for patients with OA of the knee	
		<i>Per Patient:</i> Patient visits with assessment for current level of satisfaction with symptoms and functional status/Number of visits	<i>Per Patient Population:</i> Percentage of patient visits with assessment for current level of satisfaction with symptoms and functional status
Physical Examination of the Knee	A physical examination of the knee (eg, visual inspection, palpation, range of motion) is recommended during the initial visit. ^{12,13,15} (Serves as a basis for treatment modification)	Percentage of patients for whom a physical examination of the knee was performed during the initial visit Numerator = Patients for whom a physical examination of the knee was performed during the initial visit Denominator = All patients with OA of the knee	
		<i>Per Patient:</i> Whether or not a physical examination of the knee was performed during the initial visit	<i>Per Patient Population:</i> Percentage of patients for whom a physical examination of the knee was performed during the initial visit
Assessment for Use of Anti-inflammatory or Analgesic OTC Medications	An assessment for concomitant therapy including the use of OTC medications is recommended. ¹² (Serves as a basis for treatment modification)	Percentage of patient visits with assessment for use of anti-inflammatory or analgesic OTC medications Numerator = Patient visits with assessment for use of anti-inflammatory or analgesic OTC medications Denominator = All patient visits for patients with OA of the knee	
		<i>Per Patient:</i> Patient visits with assessment for use of anti-inflammatory or analgesic OTC medications/Number of visits	<i>Per Patient Population:</i> Percentage of patient visits with assessment for use of anti-inflammatory or analgesic OTC medications
Anti-inflammatory/Analgesic Therapy <i>Numerator Inclusion:</i> Documentation that an anti-inflammatory agent or analgesic was not indicated; documentation of medical reason(s) for not prescribing an anti-inflammatory agent or analgesic (eg, allergy, drug interaction, contraindication); documentation of patient reason(s) for not prescribing an anti-inflammatory agent or analgesic (eg, economic, social, religious); documentation that an anti-inflammatory agent or analgesic was prescribed	NSAID/Analgesic therapy as part of the medical management of OA is recommended. ^{11,12} (A recommendation) ¹¹ All pharmacologic agents should be considered additions to nonpharmacologic measures. ¹²	Percentage of patient visits during which an anti-inflammatory agent or analgesic was considered Numerator = Patient visits during which an anti-inflammatory agent or analgesic was considered Denominator = All patient visits for patients with OA of the knee	
		<i>Per Patient:</i> Patient visits during which an anti-inflammatory agent or analgesic was considered/Number of visits	<i>Per Patient Population:</i> Percentage of patient visits during which an anti-inflammatory agent or analgesic was considered

**American Academy of Orthopaedic Surgeons and
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Osteoarthritis of the Knee Core Physician Performance Measurement Set^a**

	Clinical Recommendations	Clinical Performance Measures Per Reporting Year^b	
Non-steroidal Anti-inflammatory Drug (NSAID) Risk Assessment	An assessment for gastrointestinal (GI) and renal risk factors is recommended for patients who are treated with NSAIDs. ^{11,12} (Serves as a basis for treatment modification)	Percentage of patients on prescribed or OTC NSAIDs who were assessed for GI/renal risk factors Numerator = Patients who were assessed for <i>all</i> of the following: GI risk factors: <ul style="list-style-type: none"> • Age > 65 years • GI bleed • History of peptic ulcer disease (PUD) • Concomitant use of glucocorticoids or anticoagulants • Smoking • Significant alcohol use Renal risk factors: <ul style="list-style-type: none"> • Renal disease (Cr > 2.0 mg/dl) • Hypertension • Heart failure • Concomitant use of diuretic or angiotensin-converting enzyme (ACE) inhibitor Denominator = All patients with OA of the knee on prescribed or OTC NSAIDs	
		<i>Per Patient:</i> Whether or not patient on prescribed or OTC NSAIDs was assessed for GI/renal risk factors	<i>Per Patient Population:</i> Percentage of patients on prescribed or OTC NSAIDs who were assessed for GI/renal risk factors
Gastrointestinal Prophylaxis <i>Numerator Inclusion:</i> Documentation that GI prophylaxis was not indicated (eg, patients on COX-2 inhibitors); documentation of medical reason(s) for not prescribing GI prophylaxis (eg, allergy, drug interaction, contraindication); documentation of patient reason(s) for not prescribing GI prophylaxis (eg, economic, social, religious); documentation that GI prophylaxis was prescribed	If the patient is at risk for GI complications, GI prophylaxis should be considered. ^{11,12} (Serves as a basis for treatment modification)	Percentage of patient visits during which GI prophylaxis was considered Numerator = Patient visits during which GI prophylaxis was considered Denominator = All patient visits for patients with OA of the knee on prescribed or OTC NSAIDs	
		<i>Per Patient:</i> Patient visits during which GI prophylaxis was considered/Number of visits	<i>Per Patient Population:</i> Percentage of patient visits during which GI prophylaxis was considered
Therapeutic Exercise for the Knee <i>Numerator Inclusion:</i> Documentation that therapeutic exercise for the knee was not indicated; documentation of medical reason(s) for not instructing therapeutic exercise for the knee or prescribing physical therapy for the knee; documentation of patient reason(s) for not instructing therapeutic exercise for the knee or prescribing physical therapy for the knee (eg, economic, social, religious); documentation that therapeutic exercise for the knee was instructed; documentation that physical therapy for the knee was prescribed	Therapeutic exercises for the knee as part of the medical management of OA of the knee is recommended. ¹¹⁻¹³ (A recommendation) ¹¹	Percentage of patient visits during which therapeutic exercise for the knee (therapeutic exercise instructed or physical therapy prescribed) was considered Numerator = Patient visits during which therapeutic exercise for the knee was considered Denominator = All patient visits for patients with OA of the knee	
		<i>Per Patient:</i> Patient visits during which therapeutic exercise for the knee was considered/ Number of visits	<i>Per Patient Population:</i> Percentage of patient visits during which therapeutic exercise for the knee was considered

^a Refers to patients who have reached skeletal maturity (aged ≥ 21 years) with confirmed diagnosis of OA of the knee.

^b Reporting year refers to a year in which a patient was seen for the management of OA of the knee.

American Academy of Orthopaedic Surgeons and Physician Consortium for Performance Improvement Osteoarthritis of the Knee Core Physician Performance Measurement Set

Prospective Data Collection Flowsheet

Provider No. _____ Patient Name or Code _____ Birth Date ____ / ____ / ____ Gender M F Height (m) _____
(mm / dd / yyyy)

Initial Visit: <input type="checkbox"/> Symptoms/patient perception of functional impairment: <input type="checkbox"/> Physical examination of knee:			
Date of Visit (mm/dd/yyyy)	____ / ____ / ____	____ / ____ / ____	____ / ____ / ____
Weight (lb/kg)	<input type="checkbox"/> Unable to weigh	<input type="checkbox"/> Unable to weigh	<input type="checkbox"/> Unable to weigh
Symptom and Functional Assessment	<input type="checkbox"/> Patient satisfied <input type="checkbox"/> Patient dissatisfied	<input type="checkbox"/> Patient satisfied <input type="checkbox"/> Patient dissatisfied	<input type="checkbox"/> Patient satisfied <input type="checkbox"/> Patient dissatisfied
	<input type="checkbox"/> Assessment scale used ^b	<input type="checkbox"/> Assessment scale used ^b	<input type="checkbox"/> Assessment scale used ^b
Physical Exam of Knee	<input type="checkbox"/> Not indicated <input type="checkbox"/> Performed:	<input type="checkbox"/> Not indicated <input type="checkbox"/> Performed:	<input type="checkbox"/> Not indicated <input type="checkbox"/> Performed:
Use of Anti-inflammatory or Analgesic OTC Medications	<input type="checkbox"/> No <input type="checkbox"/> Analgesic OTC <input type="checkbox"/> Anti-inflammatory OTC: <input type="checkbox"/> GI/renal risk assessed*	<input type="checkbox"/> No <input type="checkbox"/> Analgesic OTC <input type="checkbox"/> Anti-inflammatory OTC: <input type="checkbox"/> GI/renal risk assessed*	<input type="checkbox"/> No <input type="checkbox"/> Analgesic OTC <input type="checkbox"/> Anti-inflammatory OTC: <input type="checkbox"/> GI/renal risk assessed*
Analgesic	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed
Anti-inflammatory Therapy	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed: <input type="checkbox"/> GI/renal risk assessed*	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed: <input type="checkbox"/> GI/renal risk assessed*	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed: <input type="checkbox"/> GI/renal risk assessed*
GI Prophylaxis (at-risk patients)	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed
Therapeutic Exercise for Knee^c	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not recommended (medical reasons**) <input type="checkbox"/> Not recommended (patient reasons**) <input type="checkbox"/> Therapeutic exercise instructed <input type="checkbox"/> Physical therapy prescribed	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not recommended (medical reasons**) <input type="checkbox"/> Not recommended (patient reasons**) <input type="checkbox"/> Therapeutic exercise instructed <input type="checkbox"/> Physical therapy prescribed	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not recommended (medical reasons**) <input type="checkbox"/> Not recommended (patient reasons**) <input type="checkbox"/> Therapeutic exercise instructed <input type="checkbox"/> Physical therapy prescribed
Patient Education (select all that apply)	<input type="checkbox"/> Weight loss counseling <input type="checkbox"/> Activity modification <input type="checkbox"/> Specific program ^d <input type="checkbox"/> Other _____	<input type="checkbox"/> Weight loss counseling <input type="checkbox"/> Activity modification <input type="checkbox"/> Specific program ^d <input type="checkbox"/> Other _____	<input type="checkbox"/> Weight loss counseling <input type="checkbox"/> Activity modification <input type="checkbox"/> Specific program ^d <input type="checkbox"/> Other _____
Durable Medical Equipment	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed (specify): _____	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed (specify): _____	<input type="checkbox"/> Not indicated <input type="checkbox"/> Not prescribed (medical reasons**) <input type="checkbox"/> Not prescribed (patient reasons**) <input type="checkbox"/> Prescribed (specify): _____
*Gastrointestinal (GI) risk factors (select all that apply):		*Renal risk factors (select all that apply):	
<input type="checkbox"/> Age > 65 years <input type="checkbox"/> GI bleed <input type="checkbox"/> History of PUD <input type="checkbox"/> Concomitant use of glucocorticoids/anticoagulants <input type="checkbox"/> Smoking <input type="checkbox"/> Significant alcohol use <input type="checkbox"/> Other (specify): _____		<input type="checkbox"/> Renal disease (Cr > 2.0 mg/dl) <input type="checkbox"/> Hypertension <input type="checkbox"/> Heart Failure <input type="checkbox"/> Concomitant diuretic/ACE inhibitor <input type="checkbox"/> Other (specify): _____	
**Specify medical (eg, allergy, contraindication) or patient (eg, economic, social, religious) reasons for not prescribing/recommending therapy:			

^a Body mass index = weight in kilograms divided by square of height in meters. The *National Heart, Lung and Blood Institute* and *World Health Organization* define obesity as BMI ≥ 30.
^b Symptom and functional assessment may include the use of a standardized scale or the completion of an assessment questionnaire (eg, SF-36¹⁶, AAOS Hip & Knee Questionnaire¹⁷).
^c Therapeutic exercise of the knee may include knee range of motion, quadriceps strengthening (progressing from isometric muscle contractions to open kinetic chain to closed kinetic chain) and aerobic conditioning and strengthening (eg, walking, exercise bicycle). These exercises may be instructed in the office or administered by a physical therapist.
^d May include programs such as the Arthritis Foundation's *Arthritis Self-Help Course* (ASHC) or support groups.

This flowsheet is intended for prospective data collection only.

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