Quality Standards

Osteoarthritis

Care for Adults With Osteoarthritis of the Knee, Hip, or Hand

November 2017

Health Quality Ontario

Let's make our health system healthier

Ontario
Health Quality Ontario

Summary

This quality standard addresses care for adults (18 years of age or older) with osteoarthritis of the knee, hip, or hand. The quality standard focuses on the assessment, diagnosis, and management of this condition for people across all health care settings and health care professionals. It provides guidance on nonpharmacological and pharmacological care.

Table of Contents

About Quality Standards

Health Quality Ontario, in collaboration with clinical experts, patients, residents, and caregivers across the province, is developing quality standards for Ontario.

Quality standards are concise sets of statements that will:

- Help patients, residents, families, and caregivers know what to ask for in their care
- Help health care professionals know what care they should be offering, based on evidence and expert consensus
- Help health care organizations measure, assess, and improve their performance in caring for patients

The statements in this quality standard do not override the responsibility of health care professionals to make decisions with patients, after considering each patient's unique circumstances.

How to Use Quality Standards

Quality standards inform clinicians and organizations about what high-quality health care looks like for aspects of care that have been deemed a priority for quality improvement in the province. They are based on the best available evidence.

They also include indicators to help clinicians and organizations assess the quality of care they are delivering, and to identify gaps and areas for improvement. These indicators measure process, structure, and outcomes.

In addition, tools and resources to support clinicians and organizations in their quality improvement efforts accompany each quality standard.

For more information on how to use quality standards, contact: qualitystandards@hqontario.ca.

About This Quality Standard

Scope of This Quality Standard

This quality standard includes 9 quality statements addressing areas identified by Health Quality Ontario's Osteoarthritis Quality Standard Advisory Committee as having high potential for improving the quality of osteoarthritis care in Ontario.

This quality standard addresses care for adults 18 years of age or older who have been diagnosed with or are suspected as having osteoarthritis of the knee, hip, or hand (i.e., thumb or fingers). The quality standard focuses on the assessment, diagnosis, and management of osteoarthritis for people across all health care settings and health care professionals. It provides guidance on nonpharmacological and pharmacological care. It covers referral for consideration of joint surgery, but does not discuss specific surgical procedures. This quality standard does not apply to care for people with osteoarthritis affecting the spine, other peripheral joints (i.e., shoulder, elbow, wrist, foot, ankle), or neck or low back pain. It also does not apply to those with a diagnosis of chronic pain syndrome, including fibromyalgia and widespread pain syndrome. This quality standard also excludes those with inflammatory arthritis or medical conditions and treatments that can lead to osteoarthritis.

Terminology Used in This Quality Standard

When we refer to "people with osteoarthritis" in this quality standard, we mean those with knee, hip, or hand osteoarthritis. Only one quality statement (Quality Statement 5: Therapeutic Exercise) applies to people with hip or knee osteoarthritis, not to those with hand osteoarthritis.

The term "symptoms" in this quality standard means any symptom related to osteoarthritis. Typical symptoms include pain, aching, stiffness, swelling, functional limitations, disability, decreased physical activity, mood disorders, fatigue, and/or poor sleep quality.

Why This Quality Standard Is Needed

Osteoarthritis, the most common type of arthritis, is a progressive condition that can affect any moveable joint of the body but most commonly the hips, knees, and hands. About 20% to 30% of adults in various populations have osteoarthritis in at least one of these joints.[1] The condition starts as a change to the biological processes within a joint, leading to structural changes such as cartilage breakdown, bone reshaping, bony lumps, joint inflammation, and loss of joint function. This often results in pain, stiffness, and loss of movement.[2] Osteoarthritis is characterized by fluctuating symptoms and increased intensity of joint pain over time. Certain factors make some people more vulnerable to developing osteoarthritis: genetic factors, being overweight or obese, injury from accidents or surgery, and heavy physical activity in some sports or at work.[2]

In Canada, the overall prevalence of diagnosed osteoarthritis in primary care is 14.2%[3] and is expected to increase to about 25% in the next 30 years.[4] The condition is more common in middle to older age (prevalence is 35.1% in those aged 80 years and older), affects more women than men, and is associated with other chronic health conditions such as depression and high blood pressure.[3] In Ontario, people with osteoarthritis report a quality of life 10% to 25% lower than those without osteoarthritis, and they incur health care costs two to three times higher.[5] The rising rates of osteoarthritis will have a substantial impact on the lives of people living with the condition and their families, on costs to the health care system, and on the

broader economy through lost productivity, people leaving the workforce, and long-term disability.[4,6]

Despite the obvious personal and societal burden of osteoarthritis, it is underdiagnosed and undertreated,[7-9] resulting in missed opportunities for people to benefit from high-quality care. While there is no cure for osteoarthritis, there are several ways to effectively manage symptoms through nonpharmacological and pharmacological treatments that can help reduce pain, improve function, maintain quality of life, and delay disability.[10] Early intervention is best.[10] Poorly managed hip and knee osteoarthritis leads to avoidance of physical activity and exacerbation of pain. This in turn can lead to fatigue, disability, and depressed mood,[11,12,13] and is linked with heart disease, diabetes, and obesity.[14-17]

Substantial gaps in the quality of osteoarthritis care exist all along the care pathway. Many people delay seeking care: in a Canadian study, about 40% of patients with osteoarthritis had symptoms for more than a year before they were diagnosed, and the average time elapsed was more than 7 years.[18] Those who do seek care are often incorrectly diagnosed or not optimally managed.[7-9] First-line treatment for osteoarthritis, according to evidence-based guidelines, should include nonpharmacological approaches: education, therapeutic exercise, daily physical activity, weight loss (if appropriate), and self-management support.[19] These treatments are underused. A study in British Columbia found that only 25% of patients with hip or knee osteoarthritis received therapeutic exercise or weight management as part of their management plan, and advice to use these approaches differed across the patients' gender, age, disability, and education.[9] Only 29% received an assessment of their ability to walk (ambulatory function) and a mere 7% were assessed for nonambulatory functions such as dressing, cooking, and the ability to rise from sitting to standing.[9] A survey of Canadians diagnosed with osteoarthritis shows relatively few are seeking advice from health professionals who can provide effective nonpharmacological management. Only 22% had consulted a physiotherapist or occupational therapist in the previous year, and 12% had attended an educational class to help them manage arthritis-related problems.[18] These shortfalls in access to needed care could be influenced by the misconception among health care providers and patients alike that osteoarthritis symptoms are a normal part of aging with limited treatment options. The cost of services and/or a lack of extended health insurance coverage also play a role. Most community-based services for osteoarthritis (such as physiotherapy, occupational therapy, weight-management programs) are not covered under Ontario's provincial health care plan; this poses significant challenges for many patients.[20,21]

In contrast, most people with osteoarthritis are prescribed some form of pharmacological treatment. In a 2015 study of primary care in Canada, 57% of patients with osteoarthritis had a prescription for a nonsteroidal anti-inflammatory drug, and about 33% were prescribed an opioid for pain management.[3] This is an underestimate of medication use, given that many people with osteoarthritis use over-the-counter medications, which are not often captured in data from electronic medical records. In another national study, 66% of people with osteoarthritis (any joint) used nonprescription medications. Among those with hip and/or knee osteoarthritis, the figure was 74%.[18]

For a small percentage of people, their condition will deteriorate to the extent that surgical options such as joint replacement, joint fusion, or joint-conserving surgery may be necessary. Surgical treatment should be offered to people with moderate to severe joint damage causing unacceptable pain or limitation of function and with significant osteoarthritis on imaging and clinical examination with symptoms.[6] However, large regional variations across Ontario's local health integration networks (LHINs) in rates of joint replacement surgeries may signal regional

inequities in access to effective nonsurgical management options for osteoarthritis. Age-standardized rates per 100,000 LHIN residents varied in 2015/16 from 100 to 263 cases for knee replacements and from 50 to 149 cases for hip replacements (data source: Canadian Institute for Health Information). In addition, a study of Ontario family physicians and orthopaedic surgeons found physicians were more likely to recommend total knee replacement to men than to women, suggesting that gender bias may contribute to the sex-based disparity in rates of that surgery.[22]

Hip and knee joint replacements are much more common than surgery for hand osteoarthritis. This is because the options for hand surgery (joint replacement and joint fusion) have higher complication and failure rates and generally sacrifice mobility for pain relief.[23] In Ontario, a total of 39,231 primary unilateral hip and knee joint replacements were performed in fiscal year 2016/17 (data source: Canadian Institute for Health Information), compared to 627 day surgeries for hand osteoarthritis (data sources: IntelliHealth Ontario, National Ambulatory Care Reporting System).

Principles Underpinning This Quality Standard

This quality standard is underpinned by the principles of respect, equity, and equality.

People with osteoarthritis should receive services that are respectful of their rights and dignity and that promote self-determination.

A quality health system is one that provides good access, experience, and outcomes for all Ontarians, no matter where they live, what they have, or who they are.

People with osteoarthritis should be provided services that are respectful of their gender, sexual orientation, socioeconomic status, housing, age, background (including self-identified cultural, ethnic, and religious background), and disability.

People with osteoarthritis should receive care through an integrated approach that facilitates access to interprofessional services from primary care, rehabilitation care providers, referral to surgical and nonsurgical specialists, and programs in the community, according to the patient's needs over time. Interprofessional collaboration, shared decision-making, coordination of care, and continuity of care (including follow-up care) are hallmarks of this patient-centred approach. Collaborative practice in health care "occurs when multiple health care workers from different professional backgrounds provide comprehensive services by working with patients, their families, carers, and communities to deliver the highest quality of care across settings."[24]

How Success Can Be Measured

The Quality Standard Advisory Committee identified a small number of overarching goals for this quality standard. These have been mapped to indicators that may be used to assess quality of care provincially and locally.

How Success Can Be Measured Provincially

- Percentage of people with osteoarthritis referred to a specialist (rheumatologist, orthopaedic surgeon, sport and exercise medicine, or pain specialist) who had their first appointment within the provincial target timeframe

Note: This can only be measured for people who see an orthopaedic surgeon and subsequently proceed to surgery.

How Success Can Be Measured Locally

You may want to assess the quality of care you provide to your patients with osteoarthritis. You may also want to monitor your own quality improvement efforts. It may be possible to do this using your own clinical records, or you might need to collect additional data. We recommend the following list of potential indicators, some of which cannot be measured provincially using currently available data sources:

- Percentage of people with osteoarthritis who report sustained, long-term control of their pain
- Percentage of people with osteoarthritis who report a high level of confidence in their self-management of the condition
- Percentage of people with osteoarthritis who have timely access to appropriate rehabilitation management strategies (such as education, exercise, and weight management)

In addition, each quality statement within the standard is accompanied by one or more indicators. These indicators are intended to guide the measurement of quality improvement efforts related to the implementation of the statement.

Quality Statements in Brief

Quality Statement 1: Clinical Assessment for Diagnosis
People who have persistent, atraumatic, movement-related joint pain or aching and morning stiffness lasting less than 30 minutes are diagnosed with osteoarthritis based on clinical assessment. Radiological imaging is not required in people aged 40 years or over if symptoms are typical of osteoarthritis.

Quality Statement 2: Comprehensive Assessment to Inform the Care Plan
People who have been diagnosed with osteoarthritis receive a comprehensive assessment of their needs to inform the development of their care plan.

Quality Statement 3: Patient Education
People with osteoarthritis are offered education that is provided in accessible formats to facilitate a self-management plan.

Quality Statement 4: Patient Self-Management Plan
People with osteoarthritis are supported to develop an individualized, goal-oriented self-management plan that evolves to address ongoing symptom management and access to resources and supports.

Quality Statement 5: Therapeutic Exercise
People with hip or knee osteoarthritis are strongly encouraged to participate in specific progressive neuromuscular training, muscle strengthening, and aerobic exercise of sufficient frequency and intensity to maintain or improve joint health and physical fitness.

Quality Statement 6: Physical Activity
People with osteoarthritis are strongly encouraged to optimize their physical activity and minimize sedentary activity, and are offered information and support to help them towards these goals.

Quality Statement 7: Weight Management
People with osteoarthritis who are overweight or obese are offered patient-centred weight-management strategies, and people at a normal weight are encouraged to maintain their weight.

Quality Statement 8: Pharmacological Symptom Management
People with symptomatic osteoarthritis are offered pain-relieving medication options when nonpharmacological treatments are insufficient to control their symptoms.

Quality Statement 9: Referral for Consideration of Joint Surgery
People with osteoarthritis whose symptoms are not sufficiently controlled through nonsurgical management and whose quality of life is negatively impacted should be referred for consideration of joint surgery.

Quality Statement 1: Clinical Assessment for Diagnosis

People who have persistent, atraumatic, movement-related joint pain or aching and morning stiffness lasting less than 30 minutes are diagnosed with osteoarthritis based on clinical assessment. Radiological imaging is not required in people aged 40 years or over if symptoms are typical of osteoarthritis.

Background

For people aged 40 years or over who present with symptoms typical of osteoarthritis, a diagnosis of osteoarthritis can be made based on a clinical assessment. Diagnosis does not require radiological imaging (e.g., x-ray, magnetic resonance imaging [MRI]) or laboratory investigations (e.g., blood work).[19]

Clinical assessment is the most accurate way to diagnose osteoarthritis because symptoms do not always match visible findings on x-ray or MRI. Some people present with severe pain and show minimal changes on imaging, while others have minimal symptoms despite moderate to severe structural joint changes. In addition, the visible bony changes on x-ray are a relatively late feature in the progression of the condition. Changes seen on x-ray do not require treatment if the person is asymptomatic.

Osteoarthritis may be diagnosed in people under the age of 40 when other factors such as prior injury (in the past decade or remote past) or joint dysplasia are present along with typical osteoarthritis symptoms.

For adults who present with atypical features of osteoarthritis or where an alternative diagnosis is being considered, it may be necessary to perform other investigations or refer to a specialist (rheumatologist, sport and exercise medicine physician, orthopaedic surgeon) to assist in making a diagnosis.[25]

Sources: Canadian Association of Radiologists 2012[26] | European League Against Rheumatism 2017[27] | National Institute for Health and Care Excellence 2014[19]

Definitions Used Within This Quality Statement

Symptoms typical of osteoarthritis
These symptoms include persistent atraumatic movement-related joint pain, aching, stiffness, and/or swelling; morning stiffness lasting less than 30 minutes; and symptoms affecting one or a few joints.[27]

Atypical features of osteoarthritis
These include a recent history of injury, joint locking, prolonged morning joint-related stiffness, rapid onset of symptoms, or the presence of a hot swollen joint. Atypical features usually indicate the need for further investigations to identify possible additional or alternative diagnoses including loose body, meniscal injury, gout, or other inflammatory arthritides such as rheumatoid arthritis, septic arthritis, and malignancy (if bone or soft tissue pain are present).[28]

What This Quality Statement Means

For Patients
Getting a diagnosis early is important so that you can manage symptoms and maintain your quality of life. The symptoms of osteoarthritis tend to get worse with time, and it's best to start therapies early.

You should see a health care professional to find out if you have osteoarthritis if you have persistent pain or aching in your knee, hip, or hand when you move them *and* if they feel stiff for up to 30 minutes after you wake up. This does not apply if you have had a recent injury in that area.

To diagnose your condition, your health care professional will examine you and ask about your symptoms. You will *not* need an x-ray or a magnetic resonance imaging (MRI) scan if you are age 40 or older and have symptoms typical of osteoarthritis. This is because osteoarthritis is more common in this age group, and an x-ray or MRI will not explain your symptoms or help in making a diagnosis. Initial decisions about your treatment can usually be based on the examination and how your symptoms are affecting your life.

For Clinicians
Diagnose osteoarthritis in adults based on clinical assessment if the person has symptoms typical of osteoarthritis (see Definitions).[25] Radiological imaging is not needed for people aged 40 years or over who present with symptoms typical of osteoarthritis. For those who present with atypical features of osteoarthritis or where an alternative diagnosis is being considered, it is usually necessary to perform other investigations or refer to a specialist[25] to assist in making a diagnosis.

For Health Services
Ensure health care professionals have clear policies and processes in place for making a diagnosis based on clinical assessment for people with symptoms typical of osteoarthritis (without radiological imaging). Service providers should also monitor the use of imaging for diagnosing osteoarthritis in adults to ensure that it is not being used inappropriately.

Quality Indicators

Process Indicator

Percentage of people aged 40 and older with symptoms typical of osteoarthritis who undergo an x-ray or MRI to confirm diagnosis (lower is better)

- Denominator: total number of people aged 40 and older with symptoms typical of osteoarthritis
- Numerator: total number of people in the denominator who undergo an x-ray or MRI to confirm diagnosis
- Data source: local data collection

Quality Statement 2: Comprehensive Assessment to Inform the Care Plan

People who have been diagnosed with osteoarthritis receive a comprehensive assessment of their needs to inform the development of their care plan.

Background

A comprehensive assessment of needs goes beyond the clinical examination and considers the whole person. The assessment should take into account social and psychological factors that impact quality of life, the ability to carry out activities of daily living, and participation in work, family commitments, and leisure activities.[19]

People living with osteoarthritis experience a complex cycle of challenges because of their symptoms. Joint pain can cause interrupted sleep, fatigue, functional limitations, and disability, which often lead to mood changes, worsening pain, avoidance of activity, and—consequently—exacerbated symptoms and even greater disability.[13] Obesity and coexisting chronic conditions, both more likely in people with osteoarthritis, will impact their symptoms and overall management of their condition.[29] The comprehensive assessment should address the individual's medical needs (including body mass index [BMI] and coexisting health conditions), as well as their social and emotional needs. This assessment should inform the development of a care plan that is patient-centred and responsive to the person's needs, preferences, and goals.

Sources: American College of Rheumatology 2012[30] | Department of Veterans Affairs, Department of Defense 2014[31] | European League Against Rheumatism 2013[32] | National Institute for Health and Care Excellence 2014[19]

Definitions Used Within This Quality Statement

Comprehensive assessment of needs
In collaboration with the patient, this assessment should take into account their osteoarthritis in its broader context. The assessment should be adapted to meet individual needs and address the following domains[33]:

- **Impairment**—pain, stiffness, quality of sleep, mood changes, joint range of motion
- **Activity limitation**—activities of daily living (ADL) such as personal care, walking ability; instrumental activities of daily living (iADLs) such as house work, preparing meals, shopping, managing medications
- **Participation**—family duties, leisure activities, exercise, employment, handling stress
- **Personal factors**—adaptations and accommodations (e.g., use of physical aids, flexible work hours), avoidance of activity, attitudes towards exercise, health beliefs, other coexisting health conditions, weight (BMI), socioeconomic status, culture
- **Environmental factors**—support network, use of assistive devices, geographical region of residence

Care plan
This documented plan describes the person's assessed health needs, preferences, and goals, and the care that will be provided to meet them. The care plan should be developed early in

their diagnosis and be reviewed whenever the patient visits their health care professional to discuss a change in their condition, including pain or other physical symptoms or a change in their activity management, weight management, sleep disturbance, or mood. A part of the care plan should include a self-management plan for the ongoing management of their chronic condition.

What This Quality Statement Means

For Patients
Your health care professionals should do a comprehensive assessment that covers your overall health. You should also talk together about how your osteoarthritis affects your energy, mood, sleep, work, hobbies, family, and social life.

This information should be used to develop a care plan outlining how you and your health care professionals will work together to improve your symptoms and your ability to keep doing your usual activities.

For Clinicians
Perform and document a comprehensive assessment (as described in the Definitions section of this statement) for people with osteoarthritis. This assessment takes place early in their diagnosis and whenever the patient visits you to discuss a change in their condition (as described in the definition of care plan in this statement).

For Health Services
Ensure all health care settings have assessment tools, systems, processes, and resources in place for adults with osteoarthritis to have comprehensive assessments of their needs early in their diagnosis and on an ongoing basis to address any changes in their condition and to inform their care plan (as described in the Definitions section of this statement).

Quality Indicators

Process Indicators

Percentage of people with osteoarthritis who participate in a comprehensive assessment of their needs early in their diagnosis

- Denominator: total number of people with osteoarthritis
- Numerator: number of people in the denominator who participate in a comprehensive assessment of their needs early in their diagnosis
- Data source: local data collection

Percentage of people with osteoarthritis who participate in a review of their comprehensive assessment of their needs when they visit a health care professional for a change in their condition

- Denominator: total number of people with osteoarthritis who have completed a prior comprehensive assessment of their needs who visit a health care professional for a change in their condition
- Numerator: number of people in the denominator who participate in a review of their comprehensive assessment of needs
- Data source: local data collection

Percentage of people with osteoarthritis who have participated in a comprehensive assessment of their needs who have a documented care plan

- Denominator: total number of people with osteoarthritis who have participated in a comprehensive assessment of their needs
- Numerator: number of people in the denominator who have a documented care plan
- Data source: local data collection

Quality Statement 3: Patient Education

People with osteoarthritis are offered education that is provided in accessible formats to facilitate a self-management plan.

Background

The goal of patient education is to improve self-management and self-confidence in the ability to manage a condition and its health outcomes.[19] Patient education for people with osteoarthritis encourages positive changes in attitudes, knowledge, health behaviours, and beliefs about pain, physical activity, and joint damage. Components of this education include general information about osteoarthritis to support understanding of the condition and specific information, such as the importance of weight management and the benefits of physical activity, to enable positive health-seeking behaviours.

Patients should receive this information early in their diagnosis and on an ongoing basis to address symptom changes. It may be provided in different formats, including tailored one-to-one sessions, as well as through group education programs in the clinical setting or referral to community-based education programs. Not every topic noted in the Definitions section of this statement will be relevant for everyone with osteoarthritis, and there may be other areas that warrant consideration for particular individuals.

The sharing of information is an integral part of osteoarthritis management and should include family and caregivers, if appropriate. The information provided should be based on the individual needs of the person with osteoarthritis, their perception of their condition, their learning abilities, and their readiness to change.

Sources: American College of Rheumatology 2012[30] | European League Against Rheumatism 2013[32] | National Institute for Health and Care Excellence 2014[19]

Definitions Used Within This Quality Statement

Education
Patient education should include information in verbal, written, and/or electronic (e.g., e-learning, website) formats. Education should be individualized and may include the following types of information:

- Overview of the condition (e.g., nature of osteoarthritis), causes (especially those pertaining to the person), its consequences (e.g., relationship between pain and sleep, emotional impact of pain), prognosis, and common myths (e.g., using affected joints will cause harm)
- Living with and managing osteoarthritis (see Quality Statement 4: Patient Self-Management)
- Importance of an active lifestyle (see Quality Statement 5: Therapeutic Exercise and Quality Statement 6: Physical Activity), healthy eating (see Quality Statement 7: Weight Management), management of sleep interruptions, cessation of smoking/tobacco use, balanced use of alcohol
- Difference between therapeutic exercise and physical activity, and the need for both
- How to protect joints and prevent injury

- Value of trying nonpharmacological treatments before starting medication (see Definitions in Quality Statement 8: Pharmacological Symptom Management)
- Benefits and risks of medications (see Quality Statement 8: Pharmacological Symptom Management)
- Advice and training on aids and devices (e.g., footwear, orthotics, bracing, joint supports, canes) and ergonomic principles to enhance daily functioning and participation in social and work roles
- Local application of heat or cold as an adjunct to other treatments
- Relationship between weight and osteoarthritis symptoms (see Quality Statement 7: Weight Management)
- Information about support groups and patient organizations
- When to consider surgery (see Quality Statement 9: Referral for Consideration of Joint Surgery)
- Encouragement to seek information about relevant clinical trials

What This Quality Statement Means

For Patients
Your health care professionals should help you learn about your osteoarthritis and how to manage it. They may provide this information directly or refer you to education programs in your community. You should receive this information when you are first diagnosed and again as your needs change.

Each person will need different types of information, but there are key things everyone with osteoarthritis needs to know. Your health care professionals should talk with you about the importance of being physically active, doing specific exercises, and managing your weight to help reduce your pain and other symptoms. They should also show you how to protect your joints and prevent injury while being physically active (for example, by taking short breaks to allow the joint to rest).

For Clinicians
Provide education, or referral to community-based education programs, that is responsive to the needs of people with osteoarthritis and enhances their understanding of the condition and its management. Information should include all aspects of management and be reinforced and expanded upon at subsequent visits. It should include family and caregivers, if appropriate.

For Health Services
Ensure all health care settings have patient education available for adults with osteoarthritis that includes accessible information sessions and materials in written and electronic formats.

Quality Indicators

Process Indicator

Percentage of people with osteoarthritis who receive education on osteoarthritis and its management

- Denominator: total number of people with osteoarthritis
- Numerator: number of people in the denominator who receive education on osteoarthritis and its management
- Data source: local data collection

Quality Statement 4: Patient Self-Management Plan

People with osteoarthritis are supported to develop an individualized, goal-oriented self-management plan that evolves to address ongoing symptom management and access to resources and supports.

Background

Self-management is a problem-based approach designed to help people gain self-confidence in their ability to develop skills to better manage their osteoarthritis (including their symptoms) and other health conditions.[34,35] Self-management principles empower people with osteoarthritis to take an active role in understanding their condition and how best to manage it, enabling them to identify their own priorities and goals for managing their health.[19] Self-management programs can be individual or group programs that include the benefit of peer support and opportunities for interaction, while helping people develop their individual self-management plans.

In developing and working with a self-management plan, people identify challenges associated with their osteoarthritis and other health conditions, set goals, create action plans, problem-solve to understand the strategies they can use to overcome barriers, and monitor their progress in meeting their goals.[36] Health care professionals have an important role in helping patients develop an individualized self-management plan and reviewing it with them on an ongoing basis.

Sources: American Academy of Orthopaedic Surgeons 2013[37] | American College of Rheumatology 2012[30] | National Institute for Health and Care Excellence 2014[19] | Osteoarthritis Research Society International 2014[38]

Definitions Used Within This Quality Statement

Self-management plan
The plan should be a written and/or electronic document that addresses both physical and psychosocial health needs. It may include[28]:

- A record of the mutually agreed-upon approach to self-managing osteoarthritis, while taking into account other chronic conditions
- Individualized goals
- Information about the condition and the chosen treatments, how to find support groups and online information, and details of self-management programs available locally
- A plan to access advice and support for:
    - How to manage the emotional aspects of osteoarthritis and its impact on mental health and relationships
    - How to increase physical activity and exercise, including pacing strategies, and information about local services such as physiotherapy, exercise classes, groups, and facilities
    - How to lose weight, for people who are overweight or obese, including referral to local resources
    - Appropriate types and uses of aids and devices and referral to local services such as an occupational therapist, orthotist, pedorthist, or podiatrist; these services can provide advice on suitable footwear, orthotic devices (such as

    - insoles and braces) and assistive devices (such as walking sticks and tap turners)
    - Pain management
    - Pharmacological management, including who can provide support (e.g., community pharmacies)
- A plan to review the patient's osteoarthritis symptoms and adjust the self-management plan as their condition and needs change
- Who will be available to monitor and follow up

What This Quality Statement Means

For Patients
Your health care professionals should work with you to create a self-management plan. This is the part of your care plan that focuses on your role in your care. Your self-management plan is where you can set goals for living with osteoarthritis, create action plans, solve problems that arise, and chart your progress.

Your plan should include information about how to access local services such as exercise classes, weight-management programs, and support groups.

Depending on your needs, your plan might also include information about physical aids such as suitable shoes, leg braces, and hand grips. These things can help you stay active and function well.

For Clinicians
Work with people with osteoarthritis to develop an individualized, goal-oriented self-management plan that gives the person information and advice on the ongoing management of their symptoms and directs them to resources and supports that they may need to help them manage their condition. This may include referring them to other clinicians, services, and community resources.

For Health Services
Ensure all health care settings have systems and processes in place for people with osteoarthritis to participate in developing an individualized, goal-oriented self-management plan that addresses the ongoing management of their symptoms and how to access resources and supports when needed.

Quality Indicators

Process Indicators

Percentage of people with osteoarthritis who have a documented self-management plan

- Denominator: total number of people with osteoarthritis
- Numerator: number of people in the denominator who have a documented self-management plan
- Data source: local data collection

Percentage of people with osteoarthritis who have a self-management plan who have documented goals for the management of their osteoarthritis

- Denominator: total number of people with osteoarthritis who have a self-management plan
- Numerator: number of people in the denominator who have documented goals for the management of their osteoarthritis
- Data source: local data collection

Quality Statement 5: Therapeutic Exercise

People with hip or knee osteoarthritis are strongly encouraged to participate in specific progressive neuromuscular training, muscle strengthening, and aerobic exercise of sufficient frequency and intensity to maintain or improve joint health and physical fitness.

Background

Currently, the most effective nonsurgical treatment for hip and knee osteoarthritis is therapeutic exercise and other physical activity. Therapeutic exercise, a subset of physical activity, is planned, structured, and repetitive and has the objective of improving or maintaining physical fitness.[39] People with osteoarthritis of the hip and knee commonly experience physical deconditioning, lower extremity muscle weakness, functional instability, and poor neuromuscular function that can improve with exercise.[40-44] Exercise has been shown to reduce pain, disability, and medication use, and to improve physical function in people with hip and knee osteoarthritis.[19] Therapeutic exercise programs that include specific progressive neuromuscular training, muscle strengthening, and aerobic exercise can restore strength, balance, and healthy movement patterns and will not cause additional joint damage.[10,45]

Therapeutic exercise programs should be developed by a health care professional with expertise in the prescription of exercise. The exercise program should be progressive, with a plan to gradually increase frequency and intensity sufficient to create physiological changes, and designed to optimize function.[45] Exercises for osteoarthritis of the hip and knee should target the quadriceps, hamstring, and gluteal muscles as well as the core (trunk) muscles. The exercises need to be tailored to the specific muscular and functional deficits of each individual based on findings from clinical assessment. However, the exercise program can be done in a group setting, which provides additional motivation for patients to learn about their condition and progressively increase their exercises.

Sources: American Academy of Orthopaedic Surgeons 2013[37] | American College of Rheumatology 2012[30] | Department of Veterans Affairs, Department of Defense 2014[31] | European League Against Rheumatism 2013[32] | National Institute for Health and Care Excellence 2014[19] | Osteoarthritis Research Society International 2014[38] | Ottawa Panel 2016[46] | Ottawa Panel 2017[47,48]

Definitions Used Within This Quality Statement

Neuromuscular training
The aim of this training is to improve controlled movement through coordinated muscle activity (sensorimotor control) and the ability of the joint to remain stable during physical activity (functional stability).[42,49] Components include strength, balance, agility, and neuromuscular control to optimize movement patterns and reduce abnormal joint loads.[10,50,51]

Muscle strengthening
This involves exercise to strengthen the muscles around the affected joint to maintain functional independence, enhance balance, and reduce risk of falls.[28] This can include non–weight-bearing exercises to train isolated muscles selectively, and also weight-bearing exercises involving multiple joints. The quantity of muscle output is emphasized and the level of training

and progression is guided by the person's one-repetition maximum (the maximum amount of force that can be generated in one maximal contraction).[42]

Aerobic exercise
Also known as cardio, this is physical exercise of low to high intensity that depends primarily on the process of generating aerobic energy, such as cycling, swimming, or a walking program.[52] It is linked with improved physical and mental health as well as increased stamina or energy to participate in everyday activities.

What This Quality Statement Means

For Patients
If you have osteoarthritis in your hip or knee, doing specific types of exercises can reduce your pain and improve your ability to move. Your health care professionals should provide you with an individualized exercise program or refer you to a specialist who can do this.

Your exercise program should target the muscles in your abdomen, back, and legs. It should include exercises to improve your balance and agility (ability to move with ease), strengthen your muscles, and improve neuromuscular control or “muscle memory” (training your muscles to move in healthy patterns).It should also include cardio activities such as walking, swimming, or biking. To benefit from this exercise, your health care professionals should show you how to do it properly and safely and how to gradually do more challenging exercises and increase the amount you can do.

For Clinicians
For your patients with osteoarthritis of the hip and knee, provide them with specific progressive neuromuscular training, muscle strengthening, and aerobic exercise of sufficient frequency and intensity to maintain or improve joint health and physical fitness. This may include referral to a supervised group education and exercise program. The program should be developed to address the person’s individual needs, circumstances, and self-motivation as identified in your clinical assessment. The program needs to be individually progressed; however, it can be provided in a group setting, depending on availability of local programs or facilities.

For Health Services
Ensure all health care settings have systems, processes, and resources in place for adults with osteoarthritis of the hip and knee to receive specific progressive neuromuscular training, muscle strengthening, and aerobic exercise of sufficient frequency and intensity to maintain or improve joint health and physical fitness.

Quality Indicators

Process Indicator

Percentage of people with hip or knee osteoarthritis who receive a prescription for a specific progressive neuromuscular training, muscle strengthening, and aerobic exercise program from a health care professional

- Denominator: total number of people with hip or knee osteoarthritis
- Numerator: number of people in the denominator who receive a prescription for a specific progressive neuromuscular training, muscle strengthening, and aerobic exercise program from a health care professional
- Data source: local data collection

Structural Indicator

Local availability of therapeutic exercise programs delivered by health care professionals with expertise in the prescription of exercise

Quality Statement 6: Physical Activity

People with osteoarthritis are strongly encouraged to optimize their physical activity and minimize sedentary activity, and are offered information and support to help them towards these goals.

Background

In addition to therapeutic exercise (see Quality Statement 5), physical activity includes other activities that involve bodily movement and are done as part of leisure, recreation, work, active transportation, or household tasks.[39,53] Regular physical activity will not damage joints and can reduce the symptoms of osteoarthritis and improve overall health.[19,32,38]

A sedentary lifestyle is a known risk factor for osteoarthritis and for worsening of symptoms, and can be modified by increasing physical activity and exercise.[54,55] People with osteoarthritis who are sedentary are also vulnerable to further losses of quality of life if they become increasingly sedentary.[55,56] They may need education from a health care professional that includes information and support in developing a plan to get started, including how to incorporate physical activity into their daily lives and guidance on managing symptoms, such as doing physical activity with acceptable pain levels rather than avoiding pain.[57-59]

Regular physical activity is recommended, as much as the person is able to do and can tolerate, with a target to accumulate at least 150 minutes of moderate to vigorous aerobic activity per week, in bouts of 10 minutes or more.[57-59] Moderate activity will cause adults to sweat a little and breath harder; examples are brisk walking, biking, and vacuuming. Vigorous activity will cause adults to sweat and be out of breath; examples are faster-paced walking, biking uphill, swimming, and carrying heavy loads such as a backpack or groceries.

For those who cannot meet the recommended target, a small amount of physical activity is better than none. Quality of life gains can be achieved by replacing sedentary time (sitting, lying down) with either daily intervals of 10 minutes of moderate to vigorous physical activity or 1 hour of light physical activity, such as walking slowly, making a bed, and preparing food.[55] If physical activity does not aggravate joint pain or swelling, it is safe to engage in it beyond these amounts.[57-59]

Sources: American Academy of Orthopaedic Surgeons 2013[37] | American College of Rheumatology 2012[30] | Department of Veterans Affairs, Department of Defense 2014[31] | European League Against Rheumatism 2013[32] | National Institute for Health and Care Excellence 2014[19] | Osteoarthritis Research Society International 2014[38] | Ottawa Panel 2011[60] | Ottawa Panel 2016[46] | Ottawa Panel 2017[61]

Definitions Used Within This Quality Statement

Information and support
Components may include:

- Understanding that joint pain from physical activity does not equal harm, and that there is greater health risk and increased risk of joint pain by not being active
- Pacing of activity

- Developing an individualized physical activity plan, based on the person's needs and preferences, with realistic and gradually increasing targets (e.g., X minutes of walking, X steps per day)
- Iterative problem-solving that emphasizes skills to improve adherence and reinforce maintenance (e.g., motivational programs, log books, written information or electronic resources, booster sessions)
- Choosing activities the person likes and that are easier for the joints, such as[25]:
    - Cardiovascular and/or resistance exercise on land (e.g., walking, biking)
    - Activities requiring neuromuscular control (e.g., yoga, Tai Chi)
    - For advanced osteoarthritis: biking, aquatic exercise (e.g., swimming, aqua-fit, walking in a pool)
- Helping those who are sedentary make a plan to get started; if pain is a barrier to physical activity, this may include providing pain-relieving medication (see Quality Statement 8: Pharmacological Symptom Management)

What This Quality Statement Means

For Patients
In addition to your therapeutic exercise program, your health care professionals should encourage you to be physically active every day. Even a small amount of activity is good. Regular physical activity can reduce the pain, aching, and stiffness related to your osteoarthritis and improve your overall health. Walking, biking, yoga, Tai Chi, swimming, aqua-fit, and walking in a pool are activities that are gentler on the joints.

If you feel pain when you are active, it does not mean you are damaging your joints. If an activity does make your symptoms worse, your health care professionals should show you how to modify it or recommend other activities.

You should aim to do as much physical activity as you can tolerate. A good target is at least 150 minutes of moderate to vigorous activity each week, in bouts of 10 minutes or more. Brisk walking, biking, and vacuuming your home are examples of moderate activity. Examples of vigorous activity are faster-paced walking, swimming laps, and carrying heavy loads such as a backpack or groceries.

If you find that target is too hard, you can start small and gradually increase the amount of physical activity you do each day. Your health care professionals should work with you on a plan to reach your goals, or refer you to community programs that can help.

For Clinicians
Encourage your patients with osteoarthritis to optimize their physical activity and minimize sedentary activity. Explain the importance of being physically active every day, both for their osteoarthritis and their overall health. Provide information about strategies and resources to help them develop an individualized physical activity plan that is responsive to their needs and preferences. If needed, refer patients to community programs that provide education and peer support and facilitate ongoing participation in daily physical activity for people with osteoarthritis.

For Health Services
Ensure all health care settings have systems, processes, and resources in place for adults with osteoarthritis to receive information and support about how to optimize their physical activity and minimize sedentary activity. Ensure that appropriate local programs are available to support a physically active lifestyle, including referral to community-based fitness programs and facilities

that offer walking, aquatic, yoga, or Tai Chi activities. Ensure all health care settings have systems and processes in place for people with osteoarthritis to participate in developing an individualized physical activity plan.

Quality Indicators

Process Indicator

Percentage of people with osteoarthritis who receive information and support for daily physical activity from a health care professional

- Denominator: total number of people with osteoarthritis
- Numerator: number of people in the denominator who receive information and support for daily physical activity from a health care professional
- Data source: local data collection

Outcome Indicator

Percentage of people with osteoarthritis who complete a daily minimum of 10 minutes of moderate to vigorous physical activity or 1 hour of light physical activity

- Denominator: total number of people with osteoarthritis
- Numerator: number of people in the denominator who complete a daily minimum of 10 minutes of moderate to vigorous physical activity or 1 hour of light physical activity
- Data source: local data collection

Quality Statement 7: Weight Management

People with osteoarthritis who are overweight or obese are offered patient-centred weight-management strategies, and people at a normal weight are encouraged to maintain their weight.

Background

Being overweight or obese is a known risk factor for the development and progression of osteoarthritis. The contributing stresses on the body are complex and include both biomechanical factors (e.g., increased or abnormal joint loading, loss of muscle mass and strength over time, mechanical stress leading to release of inflammatory mediators from joint tissues) and nonmechanical factors (e.g., inflammatory mediators produced in fat tissue).[62]

A combination of weight loss and exercise is the most beneficial approach.[60,62] People who are overweight or obese should be offered weight-management strategies or referred to community programs to help them to lose a minimum of 5% of body weight for some symptom relief[31,38] and ideally 10% or more for significant improvements in symptoms, physical function, and health-related quality of life.[62] Medications and surgical interventions such as bariatric surgery are options for people with more severe obesity and should be considered only after dietary, exercise, and behavioural approaches have been tried and evaluated.[28]

Sources: American Academy of Orthopaedic Surgeons 2013[37] | American College of Rheumatology 2012[30] | Department of Veterans, Affairs Department of Defense 2014[31] | European League Against Rheumatism 2013[32] | National Institute for Health and Care Excellence 2014[19] | Osteoarthritis Research Society International 2014[38] | Ottawa Panel 2011[60]

Definitions Used Within This Quality Statement

Overweight or obese
The excessive accumulation of body fat is measured by the body mass index (BMI) and calculated as weight in kilograms divided by height in metres squared. BMI is not a direct measure of body fat but is the most widely investigated and most useful indicator of weight-related health risk. Internationally accepted BMI values for overweight adults are 25.0 to 29.9 kg/m^2; for obesity, 30.0 to 39.9 kg/m^2; and for severe obesity, 40.0 kg/m^2 or higher.[63]

Normal weight
BMI values for adults are 18.5 to 24.9 kg/m^2.[63]

Weight-management strategies
Strategies to help people with osteoarthritis lose weight should focus on lifestyle interventions and behaviour-change strategies to encourage healthy eating and increased physical activity. The amount of support should be determined by the person's needs and be responsive to changes over time. Weight-management programs should be delivered by trained professionals and ideally use a multidisciplinary approach. Practical, patient-centred weight-management strategies may include the following[32]:

- Regular self-monitoring, recording weight monthly
- Regular support meetings to review/discuss progress
- Understanding how food intake and exercise work together to affect weight

- Education on healthy eating
- Understanding eating behaviours, triggers such as stress, and alternative coping strategies
- Timing of eating and exercise
- Appropriate sleep hygiene
- Maintaining good mental health
- Nutrition education
- Predicting and managing relapse

What This Quality Statement Means

For Patients
Being overweight can make joint pain and mobility worse. Losing weight can improve your symptoms. If you have osteoarthritis and are overweight, your health care professionals should offer you help to lose at least 5% to 10% of your body weight. If you are at a healthy weight, they should encourage you to maintain it.

If you need help, your health care professionals should refer you to a dietitian or weight-management program. They can support you with information and advice on things like how eating and exercise work together to affect your weight and how to stay motivated and reach your weight-loss goals.

For Clinicians
Offer weight-management strategies to adults with osteoarthritis who are overweight or obese, to help them lose a minimum of 5% to 10% of body weight. Patients should receive information and support to develop individual weight loss goals, learn problem-solving techniques to reach their goals, and receive follow-up visits to re-evaluate and discuss their goals for losing weight and increasing physical activity (see Quality Statement 6: Physical Activity). If needed, refer patients to a weight-management program. Encourage adults with osteoarthritis who are at a normal weight to maintain their weight.

For Health Services
Ensure all health care settings have systems, processes, and resources in place so that people with osteoarthritis who are overweight or obese are offered weight-management strategies to lose weight, and those who are at a normal weight are supported to maintain their weight. This may include information for clinicians on accessing community resources (e.g., referral to a weight-management program delivered by a trained professional) when needed.

Quality Indicators

Process Indicators

Percentage of people with osteoarthritis whose BMI has been documented in their medical chart

- Denominator: total number of people with osteoarthritis
- Numerator: number of people in the denominator who have had their BMI documented in their medical chart
- Data source: local data collection

Percentage of people with osteoarthritis who receive a documented weight-management strategy

- Denominator: total number of people with osteoarthritis
- Potential stratification: BMI status
- Numerator: number of people in the denominator who receive a documented weight-management strategy
- Data source: local data collection

Quality Statement 8: Pharmacological Symptom Management

People with symptomatic osteoarthritis are offered pain-relieving medication options when nonpharmacological treatments are insufficient to control their symptoms.

Background

Overall, the goal of treatment for osteoarthritis should be to improve quality of life. All people with osteoarthritis require nonpharmacological treatments.[19] Despite using them, however, some people experience persistent, significant, activity-limiting symptoms and may need to concurrently use pain-relieving medication. These medications can target different aspects of a person's pain, including pain experienced with joint use. In addition, sleep problems and psychological factors such as depression and anxiety also contribute to the pain cycle,[10] and treating these downstream effects of osteoarthritis pain (e.g., with duloxetine) may be beneficial.[25]

Many clinical trials have found medications (i.e., hyaluronic acid, acetaminophen, glucosamine, chondroitin) are not better than placebo (30% to 40% placebo response), although this does not mean there was no effect at the level of individual patients.[64] Few trials have been conducted in people with osteoarthritis who also have other conditions such as diabetes and heart disease; this is despite the fact that most people with knee, hip, or hand osteoarthritis have at least one other chronic condition.[65] Therefore, comorbidities should be considered with any prescribed management plan. It is important to assess osteoarthritis-related symptoms using valid and reliable measures.[25] In selecting pain-relieving medication, a stepped approach should be used that takes into consideration risks, side effects, efficacy, costs to the patient, and the person's needs and preferences. Pain-relieving medication options should be offered and then a collaborative approach used to make a plan for symptom management, including reassessments as needed of the response to treatment. Opioids should not be used routinely to treat osteoarthritis pain. They can have a small effect on pain and function but their effectiveness in long-term management of chronic pain is not known. The use of opioids is also associated with significant harms and side effects, including addiction and fatal and nonfatal overdose. For detailed guidance, see Health Quality Ontario's *Opioid Prescribing for Chronic Pain* quality standard.

Sources: American Academy of Orthopaedic Surgeons 2013[37] | American College of Rheumatology 2012[30] | Department of Veterans Affairs, Department of Defense 2014[31] | National Institute for Health and Care Excellence 2014[19] | Osteoarthritis Research Society International 2014[38]

Definitions Used Within This Quality Statement

Symptomatic osteoarthritis
Symptoms vary by osteoarthritis stage (early, moderate, and advanced)[25] and include pain, aching, swelling, stiffness, functional limitations, mood disorders, fatigue, and/or poor sleep quality.[11,12,13] These symptoms are all connected and pain is the instigator.

Nonpharmacological treatments[19]

- Education, advice, information (see Quality Statement 3: Patient Education)
- Patient self-management (see Quality Statement 4: Patient Self-Management Plan)

- Exercise and physical activity (see Quality Statement 5: Therapeutic Exercise and Quality Statement 6: Physical Activity)
- Weight loss, for patients who are overweight or obese (see Quality Statement 7: Weight Management)

Pain-relieving medication options

- Topical (nonsteroidal anti-inflammatory drugs [NSAIDs], capsaicin for hand) or local therapies (intra-articular corticosteroid injections for hip and knee) are recommended before systemic therapies (acetaminophen, selective and nonselective NSAIDs)[25]
- Opioids should not be used routinely to treat osteoarthritis pain

What This Quality Statement Means

For Patients

If things like exercise and weight management are not working well enough to control your symptoms, your primary care provider (a family doctor or nurse practitioner) should offer you options for pain-relieving medication. If you decide to use pain medication, it is important to continue using other non-drug treatments as well. You and your primary care provider should also make a plan to review your use of medication after a certain time.

Your primary care provider should first offer you a cream you rub over the joint or an injection into the joint. If those don't work for you, you may be offered over-the-counter pills (such as acetaminophen or nonsteroidal anti-inflammatory drugs) or prescription pills.

You should not be offered an opioid medication, such as oxycodone, as a routine way to treat your osteoarthritis pain. These drugs have serious risks including addiction, overdose, and death. For more information, please see our patient reference guide, *Opioid Prescribing for Chronic Pain.*

For Clinicians

For people with symptomatic osteoarthritis where nonpharmacological treatments are insufficient to control their symptoms, offer pain-relieving medication options in collaboration with the patient (see Quality Statement 4: Patient Self-Management Plan). With respect to medication, the discussion should include information about its benefits, when to take it, how much to take, how long to take it for, any possible side effects, and an agreement to reassess the response to treatment as needed.

For Health Services

Ensure all health care settings have systems, processes, and resources in place for people with osteoarthritis to receive pain-relieving medication options when nonpharmacological treatments are insufficient to control their symptoms.

Quality Indicators

Process Indicators

Percentage of people with osteoarthritis who were prescribed pain-relieving medication who also receive nonpharmacological treatments

- Denominator: total number of people with osteoarthritis who were prescribed pain-relieving medication
- Numerator: number of people in the denominator who also receive nonpharmacological treatments
- Data source: local data collection

Percentage of people with osteoarthritis prescribed pain-relieving medication who had a documented discussion of risks and benefits of their medication with their primary care provider

- Denominator: total number of people with osteoarthritis who were prescribed pain-relieving medication
- Numerator: number of people in the denominator who had a documented discussion of risks and benefits of their medication with their primary care provider
- Data source: local data collection

Quality Statement 9: Referral for Consideration of Joint Surgery

People with osteoarthritis whose symptoms are not sufficiently controlled through nonsurgical management and whose quality of life is negatively impacted should be referred for consideration of joint surgery.

Background

People with osteoarthritis should be supported with nonsurgical management before any referral for consideration of joint replacement surgery (hip, knee, thumb carpometacarpal), joint-conserving surgery (such as osteotomy), or joint fusion or excision in the hand.[19,31] An adequate trial of conservative management, before exploring a surgical solution, will give people with osteoarthritis the best chance of optimizing their quality of life. People who do go on to have a hip or knee replacement are likely to have greater functional recovery after surgery if they have better pre-operative physical function.[66]

People with osteoarthritis whose symptoms are not sufficiently controlled after an adequate trial of nonsurgical management and whose quality of life is negatively impacted should be offered referral for consideration of joint surgery. The decision to refer should be based on the severity of their pain, functional limitations, or other patient-reported osteoarthritis outcomes negatively impacting quality of life; their general health; their expectations for lifestyle and activity; and their willingness to consider surgery as an option.[19,31,67] Patient-specific factors, such as age, sex, smoking, obesity, and comorbidities, should not be barriers to referral for considerations of joint surgery.[19]

There is no role for arthroscopic surgery in the management of knee osteoarthritis.[68]

When considering surgical consultation for people with osteoarthritis of the hip or knee, the referring clinician should obtain weight-bearing plain radiographs within 6 months prior to their first appointment with a surgeon.[31] Advanced imaging, such as magnetic resonance imaging, is not required. People being considered for hip or knee joint replacement surgery should not receive joint injections in the involved joint if surgery is anticipated within 3 to 6 months.[31]

Sources: BMJ Rapid Recommendations 2017[68] | Department of Veterans Affairs, Department of Defense 2014[31] | National Institute for Health and Care Excellence 2014[19]

Definitions Used Within This Quality Statement

Symptoms are not sufficiently controlled
This occurs when a patient experiences escalated use of pain medication and/or reduced effectiveness of nonpharmacological and pharmacological pain management strategies.

Quality of life is negatively impacted
This occurs when the person considers the level of their osteoarthritis symptoms—pain, aching, stiffness, sleep interruption, reduced function, etc.—to be unacceptable.

Nonsurgical management
This includes nonpharmacological (see Quality Statements 3 to 7) and pharmacological interventions (see Quality Statement 8), both of which should be supported before any referral for consideration of joint surgery.

What This Quality Statement Means

For Patients
If you have tried to manage your symptoms using the treatments described in this guide, and your osteoarthritis symptoms are still having a significant negative impact on your life, your health care professionals may suggest you see a surgeon to see if you could benefit from surgery to realign or replace your painful joint. Joint replacement can greatly reduce pain and improve function for people severely affected by osteoarthritis.

If you have knee osteoarthritis, your surgeon should not offer you a treatment called arthroscopy. In this procedure, a tube-like device is inserted into a joint to examine and treat it. However, arthroscopy should not be used to treat *knee osteoarthritis* because it does not change the progression of osteoarthritis or improve people's quality of life.

For Clinicians
Refer people with osteoarthritis for assessment by a surgeon if the patient has complied with an adequate trial of nonpharmacological (see Quality Statements 3 to 7) and pharmacological (see Quality Statement 8) management but is experiencing a significant reduction of joint mobility that negatively impacts activities of daily living and quality of life, along with an escalation in the use of pain medication and/or reduced effectiveness of pain management.

For people with knee osteoarthritis, do not refer for surgical consultation for arthroscopic procedures.[68]

If you order x-ray for hip or knee osteoarthritis, specify weight-bearing films.

For Health Services
Ensure all health care professionals and hospitals have clear policies and processes in place so that people with osteoarthritis are not referred for consideration of joint surgery until they have been supported with an adequate trial of nonsurgical management. Decisions on referral thresholds should be based on discussions between the patient and family representatives, the referring health care professionals, and surgeons.

Quality Indicators

Process Indicators

Percentage of people with osteoarthritis referred for surgical consultation who have documentation of having received nonsurgical management prior to surgery

- Denominator: total number of people with osteoarthritis referred for surgical consultation
- Numerator: number of people in the denominator who have documentation of having received nonsurgical management
- Data source: local data collection

Percentage of people with osteoarthritis referred for surgical consultation who had weight-bearing plain radiographs taken within 6 months prior to their first appointment with a surgeon

- Denominator: total number of people with osteoarthritis referred for surgical consultation
- Numerator: number of people in the denominator who receive weight-bearing plain radiographs within 6 months prior to their first appointment with a surgeon
- Data source: local data collection

Percentage of people with osteoarthritis who are planning to undergo surgery who receive joint injections into the involved joint within 3 to 6 months of their anticipated surgery date (lower is better)

- Denominator: total number of people with osteoarthritis who are planning to undergo surgery
- Numerator: number of people in the denominator who receive joint injections into the involved joint within 3 to 6 months of their anticipated surgery date
- Data source: local data collection

Outcome Indicator

Percentage of people with knee osteoarthritis who undergo a knee arthroscopy (lower is better)

- Denominator: total number of people with knee osteoarthritis
- Numerator: number of people in the denominator who undergo an arthroscopic procedure
- Data source: IntelliHealth Ontario, National Ambulatory Care Reporting System (NACRS)

Acknowledgements

Advisory Committee

Health Quality Ontario thanks the following individuals for their generous, voluntary contributions of time and expertise to help create this quality standard:

Julia Alleyne (co-chair)
Primary Care and Sports Medicine Specialist, University of Toronto, Toronto Rehabilitation Institute, University Health Network

Rhona McGlasson (co-chair)
Physiotherapist, Executive Director, Bone and Joint Canada

Vandana Ahluwalia
Consultant Rheumatologist, Division of Rheumatology, Brampton Civic Hospital, William Osler Health System

Lorna Bain
Interprofessional Clinical Models of Care, Rheumatology, Occupational Therapist Coordinator, The Arthritis Program (TAP), Interprofessional Collaboration and Education, Southlake Regional Health Centre

Zahra Bardai
Family Physician

Joan Conrad
Lived Experience Advisor

Aileen Mary Davis
Senior Scientist and Division Head, Division of Health Care and Outcomes, Krembil Research Institute, University Health Network

Suzanne Denis
Advanced Practice Physiotherapist, Orthopaedics, Arthroplasty Program, Holland Centre, Sunnybrook Health Sciences Centre

Chandra Farrer
Advanced Practice Physiotherapist, Rheumatology, Women's College Hospital

Jennifer Harris
Physiotherapist, Prevention and Rehabilitation Outreach Programs, Heart Wise Exercise, University of Ottawa Heart Institute

Gillian A. Hawker
Sir John and Lady Eaton Professor and Chair of Medicine, Scientist/Rheumatologist, Women's College Hospital, University of Toronto

Tatiana Jevremovic
CFPC—Sport and Exercise Medicine, CFPC—Emergency Medicine, Fowler Kennedy Sport Medicine Clinic, Department of Family Medicine, Schulich School of Medicine, Western University

Peter Juni
Clinical Epidemiologist, Generalist Internal Medicine, Clinical Osteoarthritis Research Director, Applied Health Research Centre, St. Michael's Hospital

Anna Larson
Lived Experience Advisor

Jocelyne Murdoch
Rheumatology Occupational Therapist/ Advanced Clinician Practitioner in Arthritis Care, Arthritis Rehabilitation and Education Program, The Arthritis Society

Jennifer Nash
Chiropractor, Instructor/Facilitator, Bachelor of Health Sciences (Honours) Program, McMaster University

Shirlee Anne O'Connor
Nurse Practitioner, Primary Care, Nurse Practitioners' Association of Ontario

Ken Sabourin
Family Physician, Sport and Exercise Medicine

Tiziana Silveri
Administration Vice President, Clinical and Chief Nurse Executive, North Bay Regional Health Centre

Edward Moore Vasarhelyi
Orthopaedic Surgeon, Adult Hip and Knee Reconstruction, Assistant Professor, Division of Orthopaedic Surgery, Western University

Janet Wells
Lived Experience Advisor

Renée-Ann Wilson
Advanced Practice Physiotherapist, Orthopaedics, Musculoskeletal, Osteoarthritis

References

(1) Neogi T, Zhang Y. Epidemiology of osteoarthritis. Rheum Dis Clin North Am. 2013;39(1):1-19.

(2) Osteoarthritis Research Society International. What is osteoarthritis? [Internet]. Mount Laurel (NJ): The Society; 2013 [cited 2016 Dec 28]. Available from: https://www.oarsi.org/what-osteoarthritis

(3) Birtwhistle R, Morkem R, Peat G, Williamson T, Green ME, Khan S, et al. Prevalence and management of osteoarthritis in primary care: an epidemiologic cohort study from the Canadian Primary Care Sentinel Surveillance Network. CMAJ Open. 2015;3(3):E270-5.

(4) Arthritis Alliance of Canada. The impact of arthritis in Canada: today and over the next 30 years [Internet]. Toronto: The Alliance; 2011 [cited 2016 Dec 29]. Available from: http://www.arthritisalliance.ca/images/PDF/eng/Initiatives/20111022_2200_impact_of_arthritis.pdf

(5) Tarride JE, Haq M, O'Reilly DJ, Bowen JM, Xie F, Dolovich L, et al. The excess burden of osteoarthritis in the province of Ontario, Canada. Arthritis Rheum. 2012;64(4):1153-61.

(6) Public Health Agency of Canada, Centre for Chronic Disease Prevention and Control, Chronic Disease Surveillance Division resource team. Life with arthritis in Canada: a personal and public health challenge [Internet]. Ottawa: The Agency; 2010 [cited 2016 Dec 28]. Available from: http://www.phac-aspc.gc.ca/cd-mc/arthritis-arthrite/lwaic-vaaac-10/pdf/arthritis-2010-eng.pdf

(7) Ganz DA, Chang JT, Roth CP, Guan M, Kamberg CJ, Niu F, et al. Quality of osteoarthritis care for community-dwelling older adults. Arthritis Rheum. 2006;55(2):241-7.

(8) Grindrod KA, Marra CA, Colley L, Cibere J, Tsuyuki RT, Esdaile JM, et al. After patients are diagnosed with knee osteoarthritis, what do they do? Arthritis Care Res (Hoboken). 2010;62(4):510-5.

(9) Li LC, Sayre EC, Kopec JA, Esdaile JM, Bar S, Cibere J. Quality of nonpharmacological care in the community for people with knee and hip osteoarthritis. J Rheumatol. 2011;38(10):2230-7.

(10) Allen KD, Choong PF, Davis AM, Dowsey MM, Dziedzic KS, Emery C, et al. Osteoarthritis: Models for appropriate care across the disease continuum. Best Pract Res Clin Rheumatol. 2016;30(3):503-35.

(11) Hawker GA. The challenge of pain for patients with OA. HSS J. 2012;8(1):42-4.

(12) Sadosky AB, Bushmakin AG, Cappelleri JC, Lionberger DR. Relationship between patient-reported disease severity in osteoarthritis and self-reported pain, function and work productivity. Arthritis Res Ther. 2010;12(4):R162.

(13) Hawker GA, Gignac MA, Badley E, Davis AM, French MR, Li Y, et al. A longitudinal study to explain the pain-depression link in older adults with osteoarthritis. Arthritis Care Res (Hoboken). 2011;63(10):1382-90.

(14) Nuesch E, Dieppe P, Reichenbach S, Williams S, Iff S, Juni P. All cause and disease specific mortality in patients with knee or hip osteoarthritis: population based cohort study. BMJ. 2011;342:d1165.

(15) Hawker GA, Croxford R, Bierman AS, Harvey PJ, Ravi B, Stanaitis I, et al. All-cause mortality and serious cardiovascular events in people with hip and knee osteoarthritis: a population-based cohort study. PLoS One. 2014;9(3):e91286.

(16) Hawker GA, Croxford R, Bierman AS, Harvey P, Ravi B, Kendzerska T, et al. Osteoarthritis-related difficulty walking and risk for diabetes complications. Osteoarthritis Cartilage. 2017;25(1):67-75.
(17) Schieir O, Hogg-Johnson S, Glazier RH, Badley EM. Sex variations in the effects of arthritis and activity limitation on first heart disease event occurrence in the Canadian general population: results from the Longitudinal National Population Health Survey. Arthritis Care Res (Hoboken). 2016;68(6):811-8.
(18) MacDonald KV, Sanmartin C, Langlois K, Marshall DA. Symptom onset, diagnosis and management of osteoarthritis. Health Rep. 2014;25(9):10-7.
(19) National Institute for Health Care Excellence. Osteoarthritis: care and management [Internet]. London, UK: The Institute; 2014 [cited 2016 Dec 28]. Available from: https://www.nice.org.uk/guidance/cg177/resources/osteoarthritis-care-and-management-35109757272517
(20) Cott CA, Davis AM, Badley EM, Wong R, Canizares M, Li LC, et al. Commonalities and differences in the implementation of models of care for arthritis: key informant interviews from Canada. BMC Health Serv Res. 2016;16(1):415.
(21) Davis AM, Palaganas M, Li LC. Public opinion on community-based education and exercise programs for managing hip and knee osteoarthritis-like symptoms: results of a survey. Patient preference and adherence. 2016;10:283-90.
(22) Borkhoff CM, Hawker GA, Kreder HJ, Glazier RH, Mahomed NN, Wright JG. The effect of patients' sex on physicians' recommendations for total knee arthroplasty. CMAJ. 2008;178(6):681-7.
(23) Rath L. Surgery for aching hands: treating arthritis in finger joints can relieve pain – but at a price [Internet]. Atlanta (GA): Arthritis Foundation; [cited 2017 Oct 23]. Available from: http://www.arthritis.org/living-with-arthritis/treatments/joint-surgery/types/other/hand-surgery.php
(24) World Health Organization. Framework for action on interprofessional education and collaborative practice [Internet]. Geneva: WHO Press; 2010 [cited 2017 Mar 31]. Available from: http://who.int/hrh/resources/framework_action/en/index.html
(25) Arthritis Alliance of Canada, Centre for Effective Practice, College of Family Physicians of Canada. Osteoarthritis tool [Internet]. 2017 [cited 2017 Jul 6]. Available from: http://arthritisalliance.ca/en/osteoarthritis-toolbox
(26) Canadian Association of Radiologists. 2012 CAR diagnostic imaging referral guidelines: section D musculoskeletal system [Internet]. 2012 [cited 2016 Dec 29]. Available from: http://www.car.ca/uploads/standards%20guidelines/car-referralguidelines-d-en_20120918.pdf
(27) Sakellariou G, Conaghan PG, Zhang W, Bijlsma JW, Boyesen P, D'Agostino MA, et al. EULAR recommendations for the use of imaging in the clinical management of peripheral joint osteoarthritis. Ann Rheum Dis. 2017.
(28) National Institute for Health and Care Excellence. Osteoarthritis: quality standard [Internet]. London, UK: The Institute; 2015 [cited 2016 Dec 28]. Available from: https://www.nice.org.uk/guidance/qs87
(29) Arthritis Community Research & Evaluation Unit. Arthritis in Ontario. Toronto: The Arthritis Society; 2013.
(30) Hochberg MC, Altman RD, April KT, Benkhalti M, Guyatt G, McGowan J, et al. American College of Rheumatology 2012 recommendations for the use of nonpharmacologic and pharmacologic therapies in osteoarthritis of the hand, hip, and knee. Arthritis Care Res (Hoboken). 2012;64(4):465-74.
(31) Department of Veterans Affairs, Department of Defense. VA/DoD clinical practice guidelines for the non-surgical management of hip & knee osteoarthritis [Internet].

Washington (DC): The Departments; 2014 [cited 2016 Dec 28]. Available from: https://www.healthquality.va.gov/guidelines/CD/OA/VADoDOACPGFINAL090214.pdf

(32) Fernandes L, Hagen KB, Bijlsma JW, Andreassen O, Christensen P, Conaghan PG, et al. EULAR recommendations for the non-pharmacological core management of hip and knee osteoarthritis. Ann Rheum Dis. 2013;72(7):1125-35.

(33) World Health Organization. International classification of functioning, disability and health [Internet]. 2017 [cited 2017 Jun 25]. Available from: http://www.who.int/classifications/icf/en/

(34) Lorig KR, Mazonson PD, Holman HR. Evidence suggesting that health education for self-management in patients with chronic arthritis has sustained health benefits while reducing health care costs. Arthritis Rheum. 1993;36(4):439-46.

(35) Lorig K, Lubeck D, Kraines RG, Seleznick M, Holman HR. Outcomes of self-help education for patients with arthritis. Arthritis Rheum. 1985;28(6):680-5.

(36) Health Council of Canada. Self-management support for Canadians with chronic health conditions: a focus for primary health care [Internet]. Toronto (ON): The Council; 2012 [cited 2016 Dec 28]. Available from: http://www.selfmanagementbc.ca/uploads/HCC_SelfManagementReport_FA.pdf

(37) American Academy of Orthopaedic Surgeons. Treatment of osteoarthritis of the knee: evidence-based guideline. 2nd ed [Internet]. Rosemont (IL): The Academy; 2013 [cited 2016 Jan 15]. Available from: http://www.aaos.org/research/guidelines/TreatmentofOsteoarthritisoftheKneeGuideline.pdf

(38) McAlindon TE, Bannuru RR, Sullivan MC, Arden NK, Berenbaum F, Bierma-Zeinstra SM, et al. OARSI guidelines for the non-surgical management of knee osteoarthritis. Osteoarthritis Cartilage. 2014;22(3):363-88.

(39) Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. Public Health Rep. 1985;100(2):126-31.

(40) Bennell KL, Hunt MA, Wrigley TV, Lim BW, Hinman RS. Role of muscle in the genesis and management of knee osteoarthritis. Rheum Dis Clin North Am. 2008;34(3):731-54.

(41) Fitzgerald GK, Piva SR, Irrgang JJ. Reports of joint instability in knee osteoarthritis: its prevalence and relationship to physical function. Arthritis Rheum. 2004;51(6):941-6.

(42) Ageberg E, Link A, Roos EM. Feasibility of neuromuscular training in patients with severe hip or knee OA: the individualized goal-based NEMEX-TJR training program. BMC Musculoskelet Disord. 2010;11:126.

(43) Shih M, Hootman JM, Kruger J, Helmick CG. Physical activity in men and women with arthritis, National Health Interview Survey, 2002. Am J Prev Med. 2006;30(5):385-93.

(44) Fontaine KR, Heo M, Bathon J. Are US adults with arthritis meeting public health recommendations for physical activity? Arthritis Rheum. 2004;50(2):624-8.

(45) McArdle WD, Katch FI, Katch VL. Exercise physiology: nutrition energy and and human performance. Philadelphia: Lippincott Williams & Wilkins 2014.

(46) Brosseau L, Wells GA, Pugh AG, Smith CA, Rahman P, Alvarez Gallardo IC, et al. Ottawa Panel evidence-based clinical practice guidelines for therapeutic exercise in the management of hip osteoarthritis. Clin Rehabil. 2016;30(10):935-46.

(47) Brosseau L, Taki J, Desjardins B, Thevenot O, Fransen M, Wells GA, et al. The Ottawa panel clinical practice guidelines for the management of knee osteoarthritis. Part three: aerobic exercise programs. Clin Rehabil. 2017:269215517691085.

(48) Brosseau L, Taki J, Desjardins B, Thevenot O, Fransen M, Wells GA, et al. The Ottawa panel clinical practice guidelines for the management of knee osteoarthritis. Part two: strengthening exercise programs. Clin Rehabil. 2017:269215517691084.

(49) Roos EM, Arden NK. Strategies for the prevention of knee osteoarthritis. Nat Rev Rheumatol. 2016;12(2):92-101.
(50) Emery CA, Roy TO, Whittaker JL, Nettel-Aguirre A, van Mechelen W. Neuromuscular training injury prevention strategies in youth sport: a systematic review and meta-analysis. Br J Sports Med. 2015;49(13):865-70.
(51) Lauersen JB, Bertelsen DM, Andersen LB. The effectiveness of exercise interventions to prevent sports injuries: a systematic review and meta-analysis of randomised controlled trials. Br J Sports Med. 2014;48(11):871-7.
(52) Plowman SA, Smith DL. Exercise physiology for health, fitness, and performance. Philadelphia: Lippincott Williams & Wilkins; 2007.
(53) World Health Organization. Global strategy on diet, physical activity and health [Internet]. 2017 [cited 2017 Jul 6]. Available from: http://www.who.int/dietphysicalactivity/pa/en/
(54) Booth FW, Roberts CK, Laye MJ. Lack of exercise is a major cause of chronic diseases. Comprehensive Physiology. 2012;2(2):1143-211.
(55) Pinto D, Song J, Lee J, Chang RW, Semanik PA, Ehrlich-Jones LS, et al. The association between sedentary time and quality of life from the Osteoarthritis Initiative: who might benefit most from treatment? Arch Phys Med Rehabil. 2017.
(56) White D. Protective effects of replacing sedentary time with light and moderate to vigorous physical activity on functional limitation in knee OA [abstract]. Arthritis Rheumatol [Internet]. 2016; 68 (Suppl 10). Available from: http://acrabstracts.org/abstract/protective-effects-of-replacing-sedentary-time-with-light-and-moderate-to-vigorous-physical-activity-on-functional-limitation-in-knee-oa/
(57) Canadian Society for Exercise Physiology. Canadian physical activity guidelines for older adults 65 years and older [Internet]. 2011 [cited 2017 Jan 6]. Available from: http://www.csep.ca/CMFiles/Guidelines/CSEP_PAGuidelines_older-adults_en.pdf
(58) Canadian Society for Exercise Physiology. Canadian physical activity guidelines for adults 18 to 64 years [Internet]. 2011 [cited 2017 Jan 6]. Available from: http://www.csep.ca/CMFiles/Guidelines/CSEP_PAGuidelines_adults_en.pdf
(59) Dunlop DD, Song J, Lee J, Gilbert AL, Semanik PA, Ehrlich-Jones L, et al. Physical activity minimum threshold predicting improved function in adults with lower-extremity symptoms. Arthritis Care Res (Hoboken). 2017;69(4):475-83.
(60) Brosseau L, Wells GA, Tugwell P, Egan M, Dubouloz CJ, Casimiro L, et al. Ottawa Panel evidence-based clinical practice guidelines for the management of osteoarthritis in adults who are obese or overweight. Phys Ther. 2011;91(6):843-61.
(61) Brosseau L, Taki J, Desjardins B, Thevenot O, Fransen M, Wells GA, et al. The Ottawa panel clinical practice guidelines for the management of knee osteoarthritis. Part one: introduction, and mind-body exercise programs. Clin Rehabil. 2017:269215517691083.
(62) Bliddal H, Leeds AR, Christensen R. Osteoarthritis, obesity and weight loss: evidence, hypotheses and horizons - a scoping review. Obes Rev. 2014;15(7):578-86.
(63) Health Canada. Canadian guidelines for body weight classification in adults [Internet]. 2003 [cited 2017 Mar 15]. Available from: https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/healthy-weights/canadian-guidelines-body-weight-classification-adults/quick-reference-tool-professionals.html
(64) Zhang W, Robertson J, Jones AC, Dieppe PA, Doherty M. The placebo effect and its determinants in osteoarthritis: meta-analysis of randomised controlled trials. Ann Rheum Dis. 2008;67(12):1716-23.
(65) Centers for Medicare and Medicaid Services. Chronic conditions among Medicare beneficiaries chartbook 2012 edition [Internet]. Baltimore (MD): CMS; [cited 2016 Dec 28]. Available from: https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/Downloads/2012Chartbook.pdf

(66) Kennedy DM, Hanna SE, Stratford PW, Wessel J, Gollish JD. Preoperative function and gender predict pattern of functional recovery after hip and knee arthroplasty. J Arthroplasty. 2006;21(4):559-66.
(67) Hawker G, Bohm ER, Conner-Spady B, De Coster C, Dunbar M, Hennigar A, et al. Perspectives of Canadian stakeholders on criteria for appropriateness for total joint arthroplasty in patients with hip and knee osteoarthritis. Arthritis Rheumatol. 2015;67(7):1806-15.
(68) Siemieniuk RAC, Harris IA, Agoritsas T, Poolman RW, Brignardello-Petersen R, Van de Velde S, et al. Arthroscopic surgery for degenerative knee arthritis and meniscal tears: a clinical practice guideline. BMJ. 2017;357:j1982.

About Health Quality Ontario

Health Quality Ontario is the provincial advisor on the quality of health care. We are motivated by a single-minded purpose: **Better health for all Ontarians.**

Who We Are

We are a scientifically rigorous group with diverse areas of expertise. We strive for complete objectivity, and look at things from a vantage point that allows us to see the forest and the trees. We work in partnership with health care providers and organizations across the system, and engage with patients themselves, to help initiate substantial and sustainable change to the province's complex health system.

What We Do

We define the meaning of quality as it pertains to health care, and provide strategic advice so all the parts of the system can improve. We also analyze virtually all aspects of Ontario's health care. This includes looking at the overall health of Ontarians, how well different areas of the system are working together, and, most importantly, patient experience. We then produce comprehensive, objective reports based on data, facts, and the voices of patients, caregivers, and those who work each day in the health system. As well, we make recommendations on how to improve care using the best evidence. Finally, we support large scale quality improvements by working with our partners to facilitate ways for health care providers to learn from each other and share innovative approaches.

Why It Matters

We recognize that, as a system, we have much to be proud of, but also that it often falls short of being the best it can be. Plus certain vulnerable segments of the population are not receiving acceptable levels of attention. Our intent at Health Quality Ontario is to continuously improve the quality of health care in this province regardless of who you are or where you live. We are driven by the desire to make the system better, and by the inarguable fact that better has no limit.

Looking for more information?

Visit our website at **hqontario.ca** and contact us at **qualitystandards@hqontario.ca** if you have any questions or feedback about this guide.

Health Quality Ontario
130 Bloor Street West, 10th Floor
Toronto, Ontario
M5S 1N5

Tel: 416-323-6868
Toll Free: 1-866-623-6868
Fax: 416-323-9261
Email: QualityStandards@hqontario.ca
Website: hqontario.ca

ISBN TBA (Print)
ISBN TBA (PDF)

Ontario
Health Quality Ontario