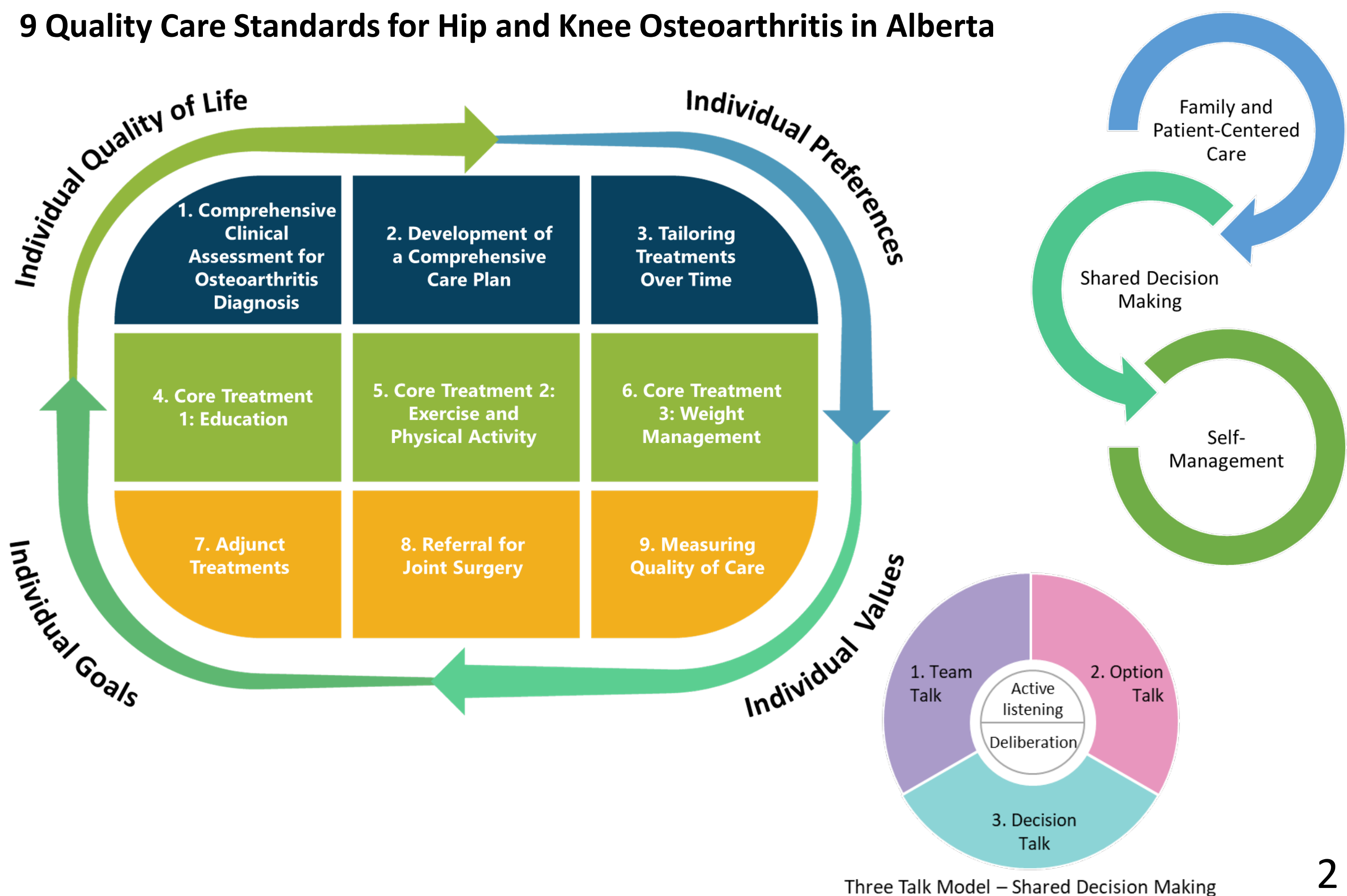
Comprehensive Quality Care Standards for Osteoarthritis of the Hip and Knee

Alberta Health Services
Bone & Joint Health Strategic Clinical Network™

Alberta Bone & Joint Health Institute



- Adults (typically aged 40+) who present with joint pain, swelling or stiffness in hips, knees or lowers backs should be thoroughly examined for a diagnosis of OA.

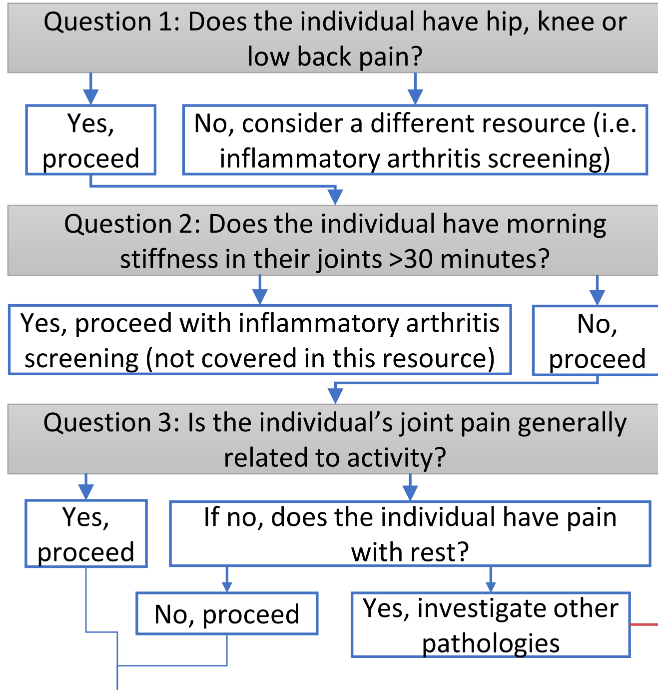
1. Review the individual's history
2. Rule out other serious pathologies (red flags)
3. Look for psychosocial risk factors (yellow flags)
4. Complete a thorough physical examination

- The use of the terms 'early', 'moderate/mild' or 'late/advanced' are **not recommended** to describe clinical presentation of OA because they don't accurate describe an individual's lived experience
- Imaging and laboratory investigations are **not required** to assist with clinical OA diagnosis of typical presentation
- **Findings on imaging may not always match the individual's symptoms, and do not predict the response to treatment**
- **If required, weight bearing x-rays are the most appropriate imaging for viewing OA degradation**
- Stay familiar with the **criteria for immediate referral to an orthopaedic surgeon** as every individual seeks care at a different stage of their journey

For more information see [the AAC OA Tool]

Flow chart for Comprehensive Biopsychosocial Clinical Assessment for Diagnosing OA of the Hip or Knee (AAC OA Tool, 2017)

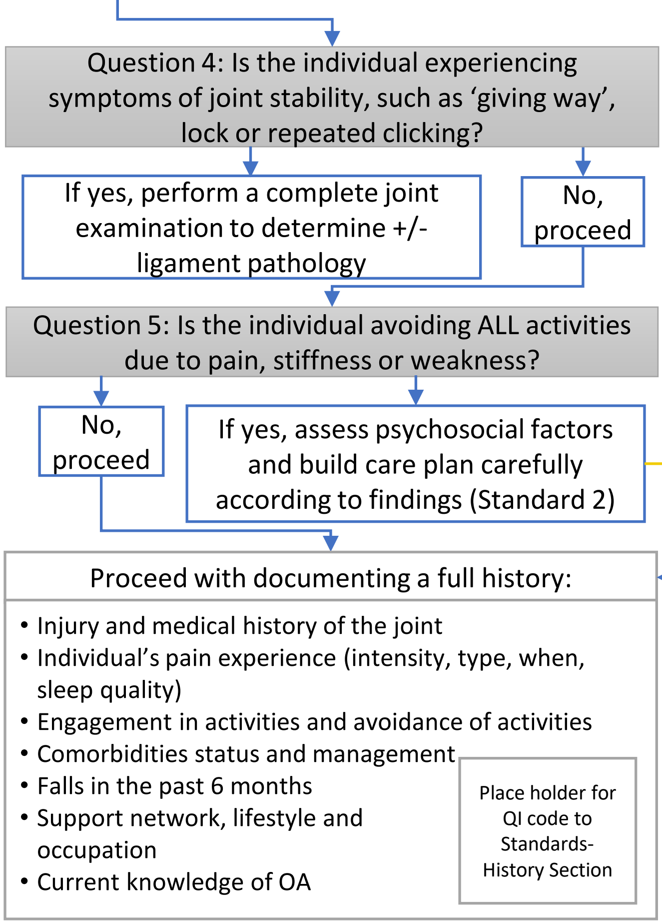
1. History



2. Rule Out Serious Pathologies

If indicated by Question 3, consider further investigation to rule out the following serious pathologies when assessing joint pain:

Pathology	Indication (flags)	Further Investigations
Infection	Fever, meningism, history of immuno-suppression/intra-venous drug use	X-ray, MRI, CBC
Inflam-matory	Rheumatoid arthritis, polymyalgia rheumatica, giant cell arteritis	Rhematology consult plus laboratory (ESR, CRP & Rheumatological markers)
Fracture	Osteoporotic facture, traumatic fall with risk of fracture	X-ray, CT (if required)
Tumor	History of cancer, unexplained weight loss, significant night pain, severe fatigue	X-ray, MRI



3. Look for Psychosocial Risk Factors

If indicated by Question 5, look for psychosocial risk factors that may lead to developing chronicity.

Questions to Ask	What to Look For
Do you think your pain will improve or become worse?	Belief that joint pain is harmful or potentially severely disabling
Do you think you would benefit from activity, movement or exercise?	Fear and avoidance of activity or movement
How are you emotionally coping with your joint pain?	Tendency to low mood and withdrawal from social interaction
What treatments or activities do you think will help you recover?	Expectation of passive treatment(s) rather than a belief that active participation will help

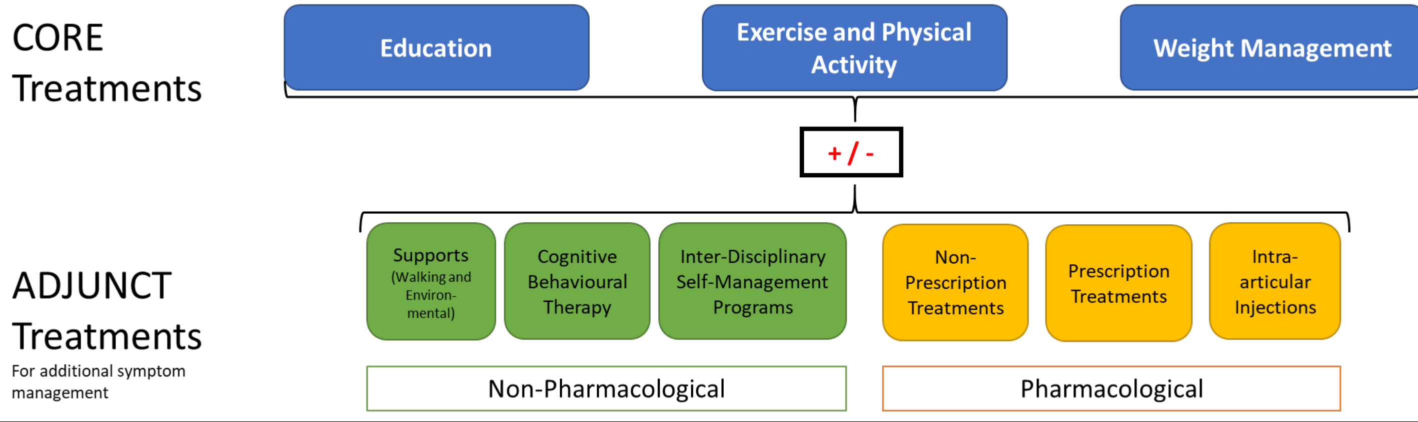
An individual with a positive answer will benefit from reassurance combined with education to reduce chronicity

Revisit these risk factors for those with joint pain that is not being managed after six weeks of treatment.

4. Physical Examination

- Height & weight
- Posture
- Joint alignment
- Balance
- Pain signs
- Joint appearance
- Range of motion
- Strength
- Stability
- Gait – TUG test
- Falls risk – Sit to Stand test

2. Development of a Comprehensive Care Plan

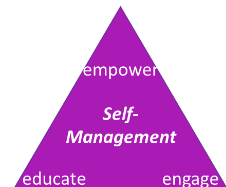


The Hierarchy of Conservative OA Treatments

- A care plan is living document that describes the treatments discussed with the individual with OA and chosen to **address their health concerns and goals**
- Each care plan is *tailored* to the individual and should account for socio-economic status
- Using shared decision making techniques, select Core Treatments and combine with Adjunct Treatments as required to support full participation in the Core Treatments
- Attach SMART goals to the selected treatments
- Choose a *specific* review or follow up plan
- Use your **Resource Inventory to create a guide** for the individual to the options in your local area

3. Tailoring Treatments Over Time

- Every person's life and OA symptoms evolve differently, their unique care plan should evolve with their needs and goals
- Repeated imaging is **not required** for ongoing tracking of OA, the individual's clinical presentation and personal choices guides ongoing OA management
- Multi-disciplinary clinician collaboration is crucial for successful OA care
    - If you are the **Primary Clinician** you take the lead in overseeing the care plan evolution over the individual's lifetime and building a **network of supporting clinicians** (at the same clinic or separate organizations in the community)
    - If you are a **supporting clinician** you are responsible for clear communication back to the Primary Clinician, clear **discharge planning, and warm hand overs**
- Have a clear follow up plan established with the individual. Follow up to evaluate the response to a treatment, or to 'check-in' on OA evolution
- **It can take over three months of dedication to most conservative treatments to see results**
- The goal is to strive to empower, engage and educate the individual to self-manage their OA



4. Core Treatment 1: Education

- Education should be offered to all individuals diagnosed with OA, and continued to be offered throughout their lifetime
- Education empowers and equips the individual with OA with the knowledge and tools to self-manage their condition and health outcomes
- Education has the strongest evidence for improving the quality of life for an individual with OA
- Education may offer **broad introductory information**: like an introduction to OA class or introduction to nutrition class
- Education may be offered to **understand a specific treatment**: like how a pool exercise program is going to work, the GLA:D™ education classes, or classes on self-management coping strategies
    - The *Good Life with osteoArthritis: Denmark (GLA:D)* program is an education and exercise program which promotes independence in physical activity

GLA:D™ CANADA

- Education sessions can be delivered in verbal, written and/or virtual formats

5. Core Treatment 2: Exercise & Physical Activity

- Individuals with OA often experience weakness in lower extremities which may lead to functional and mobility decline over time – a sedentary lifestyle is a major risk factors of OA as it aggravates symptoms
- Regular exercise and physical activity should be built into a care plan using shared decision making to select treatments that suit the goals and baseline fitness of the individual
- Most recommended exercises and physical activities for hip and knee OA target lower extremities, including trunk/core, gluteal, quadriceps, hamstring, and calf muscles
- Prescribed movement can be suggested as independent work or as a part of joining structured programs and over time, when safe, the individual can gradually progress the intensity, frequency and duration

Prescribed Exercise Vs.	Physical Activity
• Purposeful movements • Targeted to specific body parts • Structured movements • Repetitive movements	• Any leisurely action or task performed in everyday environments • Encourages movement of all body parts • For improving overall health and wellness • No structure • Not repetitive or targeted

Physical Activity Target for Adults

With clinician approval, aim for:

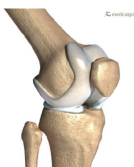
- 150 min of moderate to vigorous aerobic physical activity per week
- 10 min of continuous activity daily

Moderate Activity	Vigorous Activity
Can carry a conversation while performing	Would feel a little out of breath during conversation while performing

6. Core Treatment 3: Weight Management

- Carrying extra body weight:
  1. Exerts additional mechanical stress on the lower limb joints; and
  2. May have a metabolic link to the disease progression
- Over time, increased stress on the joints from extra body weight can result in the production of inflammatory mediators from fat tissue, negatively impacting the health of joint cartilage, and causing loss of muscle mass and strength
- **Healthy and safe weight management should be considered for all individuals with OA**, but reducing extra body weight may be one goal of those individuals who have obesity
  - Obesity is a chronic medical condition characterized by an excessive accumulation of body fat, it is a significant comorbidity in individuals with OA
- Effective weight management explores a wide range of strategies based on the individual's needs and goals. Use shared decision-making techniques to build a plan that considers:
  - Nutritional and/or weight management services to support lifestyle intervention and behaviour modification
  - Coordination with exercise and physical activity plans
  - Mental health support
  - Referral to appropriate supporting clinicians to assist with:
    - Pharmacological treatments or Surgery

A pound matters:
For every extra pound of body weight, there is 4 to 6 times more force through the knee joints.



Examples of Core Treatments

Education

Format:
- Online support
- Group classes
- 1:1 Counselling

Examples:
- MyHealth
- Healthier Together
- GLA:D®
- COMET at Glen Sather Sports Medicine Clinic
- OA Education Class Video

Exercise and Physical Activity

Land Based Physical Activity:
- Walking
- Cycling
- Cross Country Skiing
- Yoga
- Tai Chi
- Low impact Aerobics

Water Based Physical Activity:
- Swimming
- Low impact water aerobics
- Deep water workout
- Aqua-cycle
- Aqua-walking

Exercise:
- OA group exercise program (i.e. GLA:D®)
- Physical Therapist 1:1
- Community recreation programs
- Home exercise programs
- Glen Sather Sports Medicine Clinic Videos

Weight Management

Weight Management:
- Dietitian Consultant (1:1) or group class
- Public weight management programs
- Private weight management programs
- Cognitive Behavioural Therapy (CBT)

Nutrition:
- Dietitian 1:1 consult
- Public education programs
- Private education programs
- Private nutritional counselling

Adjunct Treatments: Non-Pharmacological Treatments

Supports

Walking Supports

Assistive Devices:
- Cane
- Crutches
- Nordic walking poles
- Framed walker
- Wheeled walker

Braces:
- Knee brace
- Hip brace
- Knee soft sleeve

Footwear and Orthotics:
- Foot orthotics (custom or commercial)
- Specialized footwear
- OT or PT for range of motion and joint protection ideas

Environmental Supports

Assistive Technologies:
- Long shoehorn
- Long Handled Reacher
- Sock aids
- Elastic shoelaces
- Long handled sponges

Home Adaptations:
- Raised toilet seat
- Toilet armrests/commodes

*Feet should be planted on the floor for pelvic stability
*Check manufacturer weigh limits

- Higher seat/hip cushions
- Bath seat/Bench
- Handrails on stairs
- Bedrails/Assists
- Tub grab bars, wall bars

Cognitive Behaviour Therapy

Format:
- Group counselling
- 1:1 counselling

May Include:
- Acceptance Commitment Therapy (ACT)
- Mindfulness

Inter-disciplinary Self-Management Programs

Format:
- Group classes
- Online support
- 1:1 Counselling

Examples:
- Priority and goal setting
- Self-evaluation strategies
- Problem-solving strategies
- Mental health strategies
- Symptom management options:
  - Thermotherapy
  - Heat modalities
  - Cryotherapy
  - Activity self selection

General

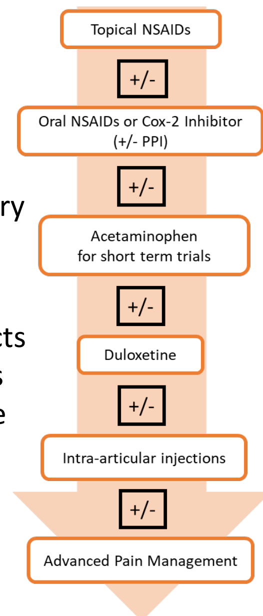
- **Adjunct Treatments are used to improve the individual's ability to fully participate in the Core Treatments**
- The costs of Adjunct Treatments should be discussed before adding a treatment to a care plan

Non-Pharmacological Treatments

- Supports can improve stability and mobilization, conserve energy, minimize the risk of falling and provide options for safe movement reduce the lower limb loading that can increase pain
- The individual's pain experience can be influenced by changes in physical, emotional, behavioural, and cognitive states so cognitive behaviour therapy can be offered that may or may not include Acceptance Commitment Therapy (ACT) and mindfulness
- Inter-disciplinary self-management programs offer more specific resources and strategies to help struggling individuals develop coping skills in response to their evolving symptoms

Pharmacological Treatments

- The algorithm guides progressive use of pharmacological treatments
- The individual's full history should be considered before prescribing
- Complications, side effects and possible interactions of medications should be considered
- Intra-articular injections includes: steroids, hyaluronic acid and platelet rich plasma
- Advanced pain management includes opioids (use with extreme caution), peripheral nerve blocks or referral for joint surgery



Adjunct Treatments: Pharmacological Treatments[1]		
Non-Prescription Treatments		
Topical NSAIDs: (knees only) • Diclofenac diethylamine 1.16%-2.32%) ***Voltaren Emulgel***: Apply 3-4 times daily	Oral NSAIDs:[4] • Ibuprofen 200-400mg po up to 3 times daily (max OTC dose) • Naproxen 220mg po 1-2 times daily (***Aleve*** OTC)	Acetaminophen: [2] • Regular strength tablets: 325-650mg po every 4-6 hours • Extra strength tablets: 500-1000mg po every 6 hours • CR tablets (***Tylenol Arthritis***): 650-1300mg po every 8-12 hours
Prescription Treatments		
Topical NSAIDs: (knees only) • Diclofenac 1.5% Solution (***Pennsaid***): 40 drops four times daily or 50 drops three times daily	• Diclofenac sodium 3-10% compounded cream: Apply three to four times daily	Oral NSAIDs: [3,4] • Naproxen 375-500mg po 1-2 times daily • Ibuprofen 600-800mg po up to 3 times daily • Diclofenac SR 75-100mg po daily
Cox-2 Inhibitors: [4] • Celecoxib 100-200 mg po once to twice daily	Combo Products:[4] • Diclofenac + misoprostol 50mg/200mcg po up to 3 times daily or 75mg/200mcg po 1-2 times daily • Naproxen + esomeprazole 375/20mg po 1-2 times daily or 500/20mg po 1-2 times daily	
SNRI's: (knee only) [5] • Duloxetine 30mg once daily for 1 week then increase to 60mg	Opioids: Not recommended for routine use in OA	Cannabinoids: No randomized clinical trials in OA available. If patient chooses to use, caution about potential side effects. Start low, go Slow.
Injectable Examples		
Cortico-steroid • Depo-medrol® • Kenalog ®	Hyaluronic Acid: • Durolane® • Synvisc®	Platelet Rich Plasma: • N-Stride® Note: preparations varies by clinic

[1]When prescribing, remember to personalize and adjust medication/dosages for individual patient factors. (eg. renal/liver function, potential for drug interactions, comorbidities, history of addiction, elderly/frail, and pain experience.)

[2]Acetaminophen in clinical trials appears to offer little clinically meaningful benefit. However, a short-term trial is often recommended as it is considered relatively safe compared to alternatives. Daily maximum dose is 4 g. Consider a lower maximum daily dose of 3.2g per day for those using daily or elderly patients.

[3]Consider adding on a Proton Pump Inhibitor (PPI) for gastroprotection for those at increased GI Risk (eg pantoprazole 40mg/day).

[4] All NSAIDS have increased risk of serious side effects. Consider contraindications prior to prescribing. Use the lowest possible dose for the shortest possible treatment duration.

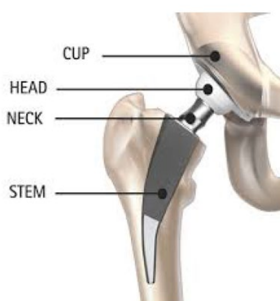
[5] Osteoarthritis of the knee: Consider for those with moderate to severe symptoms with an inadequate response to non-pharmacological treatments and oral NSAIDS or patients who have a contradiction to oral NSAIDS. May also consider for patients with OA of the hip with comorbid depression or anxiety.

8. Referral for Joint Surgery

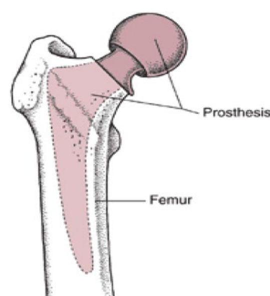
- Referral to a surgeon can be considered if conservative treatments stop working. Surgery is not a goal to achieve, but an advanced pain management option after other conservative treatments have failed
- Joint replacements are very successful procedures for many individuals but there are risks and benefits and the individual has a choice – they are *elective* procedures
- Use the standardized referral form to refer to one of 11 Albertan Hip and Knee Clinics that all follow the Hip and Knee Surgical Care Path, where the individual will be screened and assessed for candidacy
    - Surgical candidacy can be affected by the current medical management of comorbidities, among other criteria

Search "hip and knee"

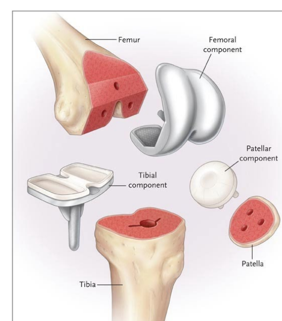
- Successful recovery requires commitment to both supported and self-managed rehabilitation
- Conservative management should continue throughout the wait for surgery and after surgery



Total Hip Repair



Hip Hemiarthroplasty



Total Knee Repair

9. Measuring Quality of Care

- There are two types of data: administrative data and patient reported experience/outcome measures (PROMs and PREMs) and **collecting this data helps to improve business operations and patient care**
- The following is recommended to implement measurement of quality care at your clinic:

1. Collect data electronically using an Electronic Medical Record (EMR) system with effective extraction.
2. Work towards achieving four measurement goals:
    a. Define the cohort of the OA patients at your centre. This may be done by adding a specific label (e.g. 'OA') or creating a 'panel'.
    b. Collect PROMs every 12 months at a minimum to track the individual's OA symptom progression (EQ5D-5L and the AOAPF).
    c. Collect PREMs to ensure the individual's perspective is informing the delivery of care (AOAEM)
    d. Care plan created using the hierarchy of treatments for each patient (or follow care plan if supporting provider)
3. Assign clear roles in your team for responsibilities with tracking, analyzing, interpreting, and actioning measurement results to *continuously* drive the improvement of the quality of your care.

MOCK UP

The BJH SCN and ABJHI are committed to making big improvements in Alberta's conservative OA care. It will take time to build many trusting partnerships with multi-disciplinary providers and with individuals. If your organization would like to share your data with ABJHI, or partner with ABJHI to strengthen your data collection, please do not hesitate to get in touch: info@albertaboneandjoint.com

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