NHS
Bedfordshire, Luton and Milton Keynes
Integrated Care Board

Policy title	**Knee replacement surgery (primary knee replacement)** **v2.1**
Policy position	**Criteria Based Access**
Date of Forum recommendation	**September 2018, updated June 2021**

Primary elective knee replacement surgery is most commonly performed for knee joint failure caused by osteoarthritis, other indications include rheumatoid arthritis, juvenile rheumatoid arthritis, osteonecrosis, and other types of inflammatory arthritis.

Recommendations

The aim of knee replacement surgery is to relieve pain and improve function. This operation can be very successful for the appropriate patients. A small number of patients who have elective knee replacement experience complications which can be devastating and for this reason, patients should not be considered for joint replacement until their condition has become chronic and conservative management has failed.

Guidance to Primary Care on the management of knee pain due to osteoarthritis

The Musculoskeletal Services Framework from the Department of Health and guidance from NICE, the GP Training Network and the National Institute of Health Consensus Panel suggest that:

- Management of common musculo-skeletal problems, including knee pain, in primary care is ideal.
- Primary Care practitioners need to have direct access to therapy, walking aids, dietetic and health promotion services.
- Management within primary care should seek to maximise the benefits of surgery and minimise the complications when this becomes necessary.

Imaging
The diagnosis of knee OA can be effectively made in primary care based upon the patient's history and physical examination. In particular, NICE recommends diagnosing osteoarthritis clinically, and without investigations, in patients who:

- Are 45 or over AND
- Have activity-related joint pain AND
- Has either no morning joint-related stiffness or morning stiffness that lasts no longer than 30 minutes.

In primary care, where clinical assessment is suggestive of knee OA, imaging is not usually necessary. Patients with persistent symptoms should be referred to secondary care and should have imaging of the knee to investigate for OA and/or other pathology. The first-line investigation of potential knee OA is weight bearing plain radiography. If the patient has a pattern of disease that allows surgical treatment to be adequately planned with plain radiographs, then MRI is not required.

Management
The initial non-surgical management of knee pain due to osteoarthritis should be provided by a package of care which may include weight reduction, activity modification, patient specific exercise programme, adequate doses of non-steroidal anti-inflammatory drugs (NSAIDs) and analgesics, joint injection, walking aids (contralateral hand), other forms of physical therapies within a package of care.

Referral should be considered when other pre-existing medical conditions have been optimised, and there has been evidence of weight reduction to an appropriate weight. Patients who are overweight (BMI 25 – 29.9) or obese (BMI >30) should be encouraged and supported to reduce their BMI[6]. Equally, patients who smoke should be encouraged to stop smoking at least 8 weeks before surgery to reduce the risk of anaesthetic or operative complications.

There are few absolute contraindications for knee replacement other than active local or systemic infection and other medical conditions that substantially increase the risk of serious peri-operative complications or death. Advanced age and obesity are not a contraindication to knee replacement; however, there may be an increased risk of delayed wound healing and peri-operative infection in obese patients. Severe peripheral vascular disease and some neurological impairments are both relative contraindications to knee replacement.

Referral criteria for immediate or urgent referral to orthopaedics services should be based on NICE referral guidance[1]

NICE recommendations state that the threshold for immediate referral to orthopaedic services is when there is evidence of infection in the knee joint.

Symptoms that are suggestive of a rapid deterioration in the joint or persistent symptoms which are causing severe disability necessitate urgent referral to orthopaedic services.

Referral criteria for routine referral to orthopaedic services

Candidates for elective knee replacement should have:

- Moderate-to-severe persistent pain not adequately relieved by a course of non-surgical management lasting at least 6 months*
- AND clinically significant functional limitation resulting in diminished quality of life*
- AND radiographic evidence of joint damage.

*The severity of pain should be assessed using Oxford Knee Score. For patients with a score of 0-19 consideration should be given for orthopaedic surgical opinion and the patient meets local BMI criteria. For patients with a score of 20-29 conservative measures should be continued for 3-6 months, with referral if no improvement after this time.

Guidance for secondary care on thresholds for knee replacement surgery

Evidence suggests that the following patients would benefit from knee replacement surgery[6,7]

1. Where the patient complains of
   a. At least intense symptomatology *(please refer to Appendix 1 for a detailed definition)*
   b. **AND** has radiological features of severe disease *(please refer to Appendix 1 for a detailed definition)*
   c. **AND** has demonstrated disease within all three compartments of the knee (tricompartmental) or localised to one compartment plus patello-femoral disease (bicompartmental)

2. Where the patient complains of
   a. At least intense symptomatology
   b. **AND** has radiological features of moderate disease
   c. **AND** is troubled by limited mobility or stability of the knee joint

3. Where the patient complains of
   a. Severe symptomatology
   b. **AND** has radiological features of slight disease
   c. **AND** is troubled by limited mobility or stability of the knee joint

Unicompartmental knee replacement

In some patients with arthritis confined to the medial compartment of the knee a unicompartmental knee replacement (UKR) may be suitable[8]. A UKR is less invasive that total knee replacement (TKR), and is associated with a faster recovery and lower risk of postoperative complications and mortality. However, UKR is also associated with a higher rate of revision. Surgeon usage of UKR has an impact on outcomes and the cost-effectiveness of the procedure[9]. To achieve the best results, surgeons need to perform a sufficient proportion of knee replacements as UKR.

Recommendations

- UKR may be considered for end-stage, symptomatic osteoarthritis of the knee that is confined to the medial compartment and confirmed by standing X-Ray.
- Initial non-surgical management must have been provided as outlined earlier in this guidance.
- The procedure must be undertaken by a surgeon who can evidence that they complete a minimum of 12 unicompartmental knee replacements per year[9,10].
- Surgeons must have an audit dataset that they will submit to commissioner for review on an annual basis.

Patella Resurfacing

It is expected that patellar resurfacing is done at the time of TKR if the patient has anterior knee pain.

Due to lack of sufficient evidence of clinical benefit and cost effectiveness to support routine resurfacing of the patella alone, stand-alone patellar resurfacing is **not normally funded.**

Notes

Patients who are assessed by the above criteria to be inappropriate for knee replacement surgery should not be listed for surgery. Patients who partially fulfil the criteria for appropriate knee joint replacement surgery may benefit from the operation and a decision will need to be taken on an individual basis. For all patients who fulfil all the criteria for surgery as indicated above, or only partially fulfil the appropriate criteria for surgery, clinicians are required to document in the medical record that they have fully informed the patient of the risks and benefits of the procedure, and have offered a patient information leaflet prior to listing the patient for surgery.

References:

1. National Institute of Clinical Excellence. Primary Care Referral Guidelines for Common Conditions. NICE 2003; London.
2. GP-training.net. Orthopaedic Referral Guidelines
3. National Institute of Health. Consensus Development Program. Dec 2003. See also the National Guideline Clearing House.
4. British Orthopaedic Association. Total Knee Replacement; A Guide to Best Practice. 2001
5. The Musculoskeletal Services Framework – A joint responsibility: doing it differently. Department of Health, 2006
6. Development of explicit criteria for total knee replacement by Escobar A et al.. International Journal of Technology Assessment in Healthcare, 19:1 (2003), p57-70
7. Health-related Quality of Life and Appropriateness of Hip or Knee Joint Replacement by Quintana J et al. Archives of Internal Medicine. 2006; 166:p220-226
8. Unicompartmental knee replacement – Current perspectives Campi S et al. Journal of Clinical Orthopaedics and Trauma 9 (2018) 17-23
9. Cost-effectiveness of unicompartmental compared with total knee replacement: a population-based study using data from the National Joint Registry for England and Wales. Burn E, Liddle AD, Hamilton TW et al. BMJ Open 2018:8:e020977.doi:
10. Royal College of Surgeons. Commissioning Guide: painful Osteoarthritis of the knee.
11. Academy of Medical Royal Colleges (2020) Evidence-Based Interventions List 2 Guidance

NOTE:

- This policy will be reviewed in the light of new evidence or new national guidance e.g. from NICE
- Where a patient does not meet the policy criteria or the intervention is not normally funded by the NHS, an application for clinical exceptionality can be considered via the ICB's Individual Funding Request (IFR) Policy and Process

Clinical coding:

IDC10 M17.- Gonarthrosis

Total Knee Replacement

Primary OPCS:
W40.1: Primary total prosthetic replacement of knee joint using cement
W40.9: Unspecified total prosthetic replacement of knee joint using cement
W41.1: Primary total prosthetic replacement of knee joint not using cement
W41.9: Unspecified total prosthetic replacement of knee joint not using cement
W42.1: Primary total prosthetic replacement of knee joint NEC
W42.9: Unspecified other total prosthetic replacement of knee joint
O18.1: Primary hybrid prosthetic replacement of knee joint using cement
O18.9: Unspecified hybrid prosthetic replacement of knee joint using cement

Unicompartmental Knee Replacement

W58.1: Primary resurfacing arthroplasty of joint (knee)

Policy update record	
v2.0 22.6.2021 BLMK 3CF meeting	Addition of Evidence Based Interventions phase 2 recommendation on imaging in primary care: section 'Imaging'.

Key words: knee replacement, total knee replacement, TKR, partial knee replacement, unicompartmental knee replacement

Appendix 1: Knee joint replacement - Classification of pain levels and functional limitations

Variable	Definition
Mobility and Stability	
- Preserved mobility and stable joint	Preserved mobility is equivalent to minimum range of movement from 0º to 90º Stable or not lax is equivalent to an absence of slackness of more than 5mm in the extended joint
- Limited Mobility and/or stable joint	Limited mobility is equivalent to a range of movement less than 0º to 90º unstable or lax is equivalent to the prescene of slackness of more than 5mm in the extended joint
Symptomatology	
- Slight	Sporadic Pain Pain when climbing/descending stairs Allows daily activities to be carried out (those requiring great physical activity may be limited) Medication: aspirin, paracetamol or NSAID to control pain with no side effects
- Moderate	Occasional pain Pain when walking on level surfaces (half an hour, or standing) Some limitation of daily activities Medication: aspirin, paracetamol or NSAID to control pain with no/few side effects
- Intense	Pain of almost continuous nature Pain when walking short distances on level surface or standing for less than half an hour Daily activities significantly limited Continuous use of NSAIDs for treatment to take effect Requires the sporadic use of support systems (walking stick, crutches)
- Severe	Continuous Pain Pain when resting Daily activities significantly limited constantly Continuous use of analgesics – narcotics/NSAIDs with adverse effects or no response Requires more constant use of support systems (walking stick, crutches)
Radiology	
- Slight	Ahlback grade I
- Moderate	Ahlback grade II and III
- Severe	Ahlback grade IV and V
Localisation	
- Unicompartmental	Excluded patella-femoral isolated
- Bicompartmental	Unicompartmental plus patella-femoral
- Tricompartmental	Disease affecting all three compartments of the knee