Appendix 4a London Choosing Wisely

Draft Policy Template: Knee Arthroplasty

Version	Date	Notes
Draft for Task & Finish Group 1	03/05/18	Initial draft
Revised version post Task & Finish Group 1	15/05/18	Introduction revised Key definitions revised Commissioning criteria Rationale for policy guidance Updated OPCS and ICD-10 codes
Revised version post Task & Finish Group 2	17/05/18	Amendments made following feedback from T&F Group
Revised version	15/06/18	Amendments made by T&F Group Chair
Revised in response to final comments from T&F chair	27/06/18	Minor change made to one commissioning criteria to be consistent with similar text in the hip arthroplasty draft policy
Revised following LCW Steering group meeting of 30/07/18	02/08/18	Minor amendments made to ensure search terms are clear within the evidence review.
Further revision	20/08/18	Text added to evidence review approach section following discussion at July Steering group meeting

COMMISSIONING STATEMENT		
Intervention	Knee Arthroplasty	
Date Issued		
Dates of Review		
Pan-London Commissioning Recommendation	**This policy relates to knee arthroplasty, as described in detail below.** The following exclusions apply: Patients with joint failure from causes other than degenerative disease / osteoarthritis Patients with confirmed or suspected malignancy Patients with acute trauma or suspected infection Patients with inflammatory arthropathies Paediatric patients **In ordinary circumstances*, funding for total or partial knee replacement surgery is available for patients who meet ALL of the following criteria:** Osteoarthritis with joint symptoms (pain, stiffness, reduced function, joint instability) that have a substantial impact on quality of life as agreed with the patient and/or the patient's representative, referring clinicians and surgeons ***AND*** The symptoms are refractory to non-surgical treatment (including pain relief, exercise, physiotherapy and weight loss where appropriate) ***AND*** The patient's symptoms are consistent with degenerative disease, and prior to arthroplasty there is radiological confirmation of this ***AND*** The patient has been engaged in shared decision making regarding treatment options. *If clinician considers need for referral/treatment on clinical grounds outside of these criteria, please refer to the CCG Individual Funding Request policy for further information.	
Prepared By	London Choosing Wisely, Commissioned by NHSE	
Approved By	**Date Approved**	**Notes**

Hip & Knee Arthroplasty Task & Finish Group, London Choosing Wisely	19/07/2018	
LCW Steering Board	04/09/2018	

Main Policy Document

Policy Statement

London Choosing Wisely (LCW) was commissioned to carry out this work on behalf of all London Clinical Commissioning Groups (CCGs), in order to promote equitable access to certain treatments and the cost-effective use of healthcare resources. All London CCGs will commission knee arthroplasty procedures in accordance with the criteria outlined in this document.

In creating this policy, LCW convened a Task and Finish Group focused on developing this policy and has reviewed this clinical condition and the evidence supporting treatment leading to this commissioning decision.

1. Introduction

Knee replacement surgery is typically an elective procedure performed under anaesthetic and is the commonest type of surgery performed for osteoarthritis (OA). Depending on the extent of osteoarthritis in the joint, a knee replacement can be either partial (one compartment is replaced) or total (the whole joint is replaced).

Patients with confirmed or suspected malignancy, acute trauma, and suspected infection should be referred urgently or as an emergency via alternative pathways. Patients with inflammatory arthropathies and paediatric patients should be referred under alternative pathways.

Osteoarthritis is the commonest type of arthritis and one of the leading causes of pain and disability worldwide. The most commonly affected peripheral joints are the knees, hips and small joints of the hand. Important consequences are pain, limitation of daily activities and reduction in quality of life. There is often a poor linkage between radiological signs and physical symptoms of OA; minimal changes can be associated with much pain or modest structural changes can occur with minimal symptoms.

Osteoarthritis is the commonest indication for knee replacement. The treatment aims of knee replacement are to improve pain, function and quality of life. Patient reported outcome measures (PROMs) data for 2016-2017 showed that 81% of respondents reported an improvement in their general health following knee replacement, with the remainder reporting their general health to be either unchanged or worsened. As with all surgical procedures, there is a potential risk of harm from undergoing knee arthroplasty. Risks include venous thromboembolism, infection and periprosthetic fracture. The mortality rate in the 90 days following TKR is estimated to be 0.5-1%. The National Joint Registry published surgical data for 2016 with a 90 day mortality rate of 0.3% for patients undergoing primary knee joint replacement.

Knee replacement surgery is known to be a clinically and cost effective treatment for knee OA in patients with persistent and troublesome symptoms that are refractory to conservative management. However, the NICE guideline does not specifically state when patients should be referred for consideration of joint surgery. In the context of an ageing population and increasing demands on NHS resources, it seems likely that the need for knee arthroplasty will continue to increase (During 2016, 104,079 knee joint replacements were recorded in the National Joint Registry and there was a 3.8% increase in knee replacement procedures compared with 2015).

2. Key Definitions

Total knee arthroplasty: Surgical procedure performed under anaesthetic, which involves replacing the knee with an artificial joint. Also known as total knee replacement (TKR).

Partial knee arthroplasty: Surgical procedure performed under anaesthetic, which involves replacing only one compartment of the knee with a prosthesis. Also known as a unicompartmental knee replacement.

Non-steroidal anti-inflammatory drugs (NSAIDs): Type of pain relief medication, commonly used orally.

3. Aims & Objectives

Across London there are five Sustainability and Transformation Partnerships (STPs), including 32 CCGs, representing 1,400 GP practices serving our population of almost nine million Londoners. This policy aims:

- To reduce unwarranted variation in access to knee arthroplasty across London, removing the postcode lottery
- To ensure that knee arthroplasty is commissioned where there is acceptable evidence of clinical benefit and cost-effectiveness
- To promote the cost-effective use of healthcare resources for Londoners.

4. Criteria for commissioning

Exclusions from the policy

- Patients with joint failure from causes other than degenerative disease / osteoarthritis
- Patients with confirmed or suspected malignancy
- Patients with acute trauma or suspected infection
- Patients with inflammatory arthropathies
- Paediatric patients

Commissioning criteria

In ordinary circumstances*, funding for total or partial knee replacement surgery is available for patients who meet ALL of the following criteria:
Osteoarthritis with joint symptoms (pain, stiffness, reduced function, joint instability) that have a substantial impact on quality of life as agreed with the patient and/or the patient's representative, referring clinicians and surgeons ***AND***
The symptoms are refractory to non-surgical treatment (including pain relief, exercise, physiotherapy and weight loss where appropriate) ***AND***
The patient's symptoms are consistent with degenerative disease, and prior to arthroplasty there is radiological confirmation of this ***AND***
The patient has been engaged in shared decision making regarding treatment options.

*If clinician considers need for referral/treatment on clinical grounds outside of these criteria, please refer to the CCG Individual Funding Request policy for further information.

Advice to Primary Care Practitioners

The following section is designed to aid decision making in primary care and does not form part of the commissioning criteria. The advice is based on the T&F group's discussion and consideration of the evidence.

- It is important to note that OA may not be progressive and many patients can be successfully managed with non-surgical measures in primary care.
- Patients should be encouraged to be involved in self-management of core (non-surgical) treatments, which includes education and lifestyle modifications, exercise and weight loss (where appropriate).
- Patients who smoke should be advised to attempt to stop smoking at least 12 weeks before surgery and should be offered support with smoking cessation services.
- Patients with raised BMI should be supported to lose weight and, where appropriate, offered access to local weight loss services (where these services are available).
- Clinical judgement should be used with regards to assessing severity of symptoms and considering referral for surgical opinion, as there are currently no classification scores validated for clinical use.
- Prior to referral, primary care practitioners should ensure that patients have meaningfully engaged with non-surgical management.
- Referrals to secondary care should be via the MSK interface services (where such pathways are in place).
- Consider earlier referral to secondary care for patients with suspected end-stage OA.

Decision aids

To support with informed decision making, patients should be given the opportunity in primary care to complete the Decision Aid tools on knee osteoarthritis and knee replacement surgery. Examples of Decision Aid tools include:

- "What are my options for managing hip or knee arthritis?" (Cochrane musculoskeletal)
- "Arthritis: should I have knee replacement surgery?" (Healthwise)

These tools can be accessed online at:

https://www.england.nhs.uk/rightcare/shared-decision-making/

Where patients have difficulties accessing decision aid tools online, primary care practitioners should offer support with access wherever possible.

5. Evidence Summary

The full evidence review can be found in Appendix 1, with a summary of findings included in Section 3.

6. Rationale behind Policy Statements

In considering and drafting this commissioning policy, the Task and Finish Group drew from the evidence presented, commissioning polices currently in use by other CCGs, and their clinical experience.

The Task & Finish Group highlighted that there are currently no symptom classification or scoring systems that are validated for clinical use in determining timing of joint replacement surgery. The group therefore took the decision to not include any such classification system in the commissioning criteria.

The Task & Finish Group decided that partial / unicompartmental knee replacement should also be included in the policy, as the patient groups and pathways are the same as for total knee arthroplasty. Both total and partial knee replacement are described in the BOA Commissioning Guide as appropriate treatment options for patients with OA. In addition it is noted that the majority of commissioning policies for knee arthroplasty in use by other CCGs nationally include both total and partial knee arthroplasty.

The Task & Finish Group noted that although there is a paucity of evidence regarding the appropriate duration of conservative management prior to arthroplasty, there is some evidence to suggest that late arthroplasty is associated with poorer outcomes. Therefore, it was decided not to include a specified duration of conservative management prior to referral for surgical opinion.

The Task & Finish Group noted that some existing CCG policies include a specific cutoff for BMI, above which weight loss is strongly advised prior to joint replacement surgery. The Task & Finish group acknowledged that patients with a high BMI have poorer outcomes from knee replacement surgery, and thus the importance of reducing BMI (where raised) as part of health optimisation prior to knee arthroplasty. However, it was agreed that there is no evidence to support a specific cutoff of BMI to include in the pan-London policy.

7. Adherence to NICE Guidelines

This policy refers to and is in accordance with the NICE clinical guideline for the management of OA published in 2014 (CG177: Osteoarthritis: care and management). The policy is also in accordance with the BOA Commissioning guide published in 2013 (Painful osteoarthritis of the knee).

8. Codes for procedures

OPCS and ICD-10 codes covered within this policy.

Note: This list is not exhaustive and can be added to at CCG level during implementation of policy.

Proposed OPCS Codes for inclusion in the policy		
OPCS4	W401	Primary total prosthetic replacement of knee joint using cement
OPCS4	W408	Other specified total prosthetic replacement of knee joint using cement
OPCS4	W409	Unspecified total prosthetic replacement of knee joint using cement
OPCS4	W411	Primary total prosthetic replacement of knee joint not using cement
OPCS4	W418	Other specified total prosthetic replacement of knee joint not using cement
OPCS4	W419	Unspecified total prosthetic replacement of knee joint not using cement
OPCS4	W421	Primary total prosthetic replacement of knee joint NEC
OPCS4	W428	Other specified other total prosthetic replacement of knee joint
OPCS4	W429	Unspecified other total prosthetic replacement of knee joint
OPCS4	W521	Primary prosthetic replacement of articulation of bone using cement NEC
OPCS4	W528	Other specified prosthetic replacement of articulation of other bone using cement
OPCS4	W529	Unspecified prosthetic replacement of articulation of other bone using cement
OPCS4	W531	Primary prosthetic replacement of articulation of bone not using cement NEC
OPCS4	W538	Other specified prosthetic replacement of articulation of other bone not using cement
OPCS4	W539	Unspecified prosthetic replacement of articulation of other bone not using cement
OPCS4	W541	Primary prosthetic replacement of articulation of bone NEC
OPCS4	W548	Other specified other prosthetic replacement of articulation of other bone
OPCS4	W549	Unspecified other prosthetic replacement of articulation of other bone

Relevant OPCS codes but not included in the policy		
OPCS4	W412	Conversion to total prosthetic replacement of knee joint not using cement
OPCS4	W422	Conversion to total prosthetic replacement of knee joint NEC
OPCS4	W431	Primary total prosthetic replacement of joint using cement NEC
OPCS4	W438	Other specified total prosthetic replacement of other joint using cement
OPCS4	W439	Unspecified total prosthetic replacement of other joint using cement
OPCS4	W441	Primary total prosthetic replacement of joint not using cement NEC
OPCS4	W448	Other specified total prosthetic replacement of other joint not using cement
OPCS4	W449	Unspecified total prosthetic replacement of other joint not using cement
OPCS4	W451	Primary total prosthetic replacement of joint NEC
OPCS4	W458	Other specified other total prosthetic replacement of other joint
OPCS4	W459	Unspecified other total prosthetic replacement of other joint
OPCS4	W551	Primary prosthetic interposition arthroplasty of joint
OPCS4	W553	Conversion to prosthetic interposition arthroplasty of joint
OPCS4	W558	Other specified prosthetic interposition reconstruction of joint
OPCS4	W559	Unspecified prosthetic interposition reconstruction of joint
OPCS4	W562	Primary interposition arthroplasty of joint NEC

OPCS4	W564	Conversion to interposition arthroplasty of joint NEC
OPCS4	W568	Other specified other interposition reconstruction of joint
OPCS4	W569	Unspecified other interposition reconstruction of joint
OPCS4	W588	Other specified other reconstruction of joint
OPCS4	W589	Unspecified other reconstruction of joint
OPCS4	O181	Primary hybrid prosthetic replacement of knee joint using cement
OPCS4	O188	Other specified hybrid prosthetic replacement of knee joint using cement
OPCS4	O189	Unspecified hybrid prosthetic replacement of knee joint using cement
OPCS4	O182	Conversion to hybrid prosthetic replacement of knee joint using cement
OPCS4	W402	Conversion to total prosthetic replacement of knee joint using cement
OPCS4	O180	Conversion from previous hybrid prosthetic replacement of knee joint using cement
OPCS4	O183	Revision of hybrid prosthetic replacement of knee joint using cement
OPCS4	O184	Attention to hybrid prosthetic replacement of knee joint using cement
OPCS4	W400	Conversion from previous cemented total prosthetic replacement of knee joint
OPCS4	W403	Revision of total prosthetic replacement of knee joint using cement
OPCS4	W404	Revision of one component of total prosthetic replacement of knee joint using cement
OPCS4	W410	Conversion from previous uncemented total prosthetic replacement of knee joint
OPCS4	W413	Revision of total prosthetic replacement of knee joint not using cement
OPCS4	W414	Revision of one component of total prosthetic replacement of knee joint not using cement
OPCS4	W420	Conversion from previous total prosthetic replacement of knee joint NEC
OPCS4	W423	Revision of total prosthetic replacement of knee joint NEC
OPCS4	W424	Attention to total prosthetic replacement of knee joint NEC
OPCS4	W425	Revision of one component of total prosthetic replacement of knee joint NEC
OPCS4	W426	Arthrolysis of total prosthetic replacement of knee joint
OPCS4	W433	Revision of total prosthetic replacement of joint using cement NEC
OPCS4	W433	Revision of total prosthetic replacement of joint using cement NEC
OPCS4	W443	Revision of total prosthetic replacement of joint not using cement NEC
OPCS4	W443	Revision of total prosthetic replacement of joint not using cement NEC
OPCS4	W453	Revision of total prosthetic replacement of joint NEC
OPCS4	W453	Revision of total prosthetic replacement of joint NEC
OPCS4	W523	Revision of prosthetic replacement of articulation of bone using cement NEC
OPCS4	Z787	Patella
OPCS4	W533	Revision of prosthetic replacement of articulation of bone not using cement NEC
OPCS4	W543	Revision of prosthetic replacement of articulation of bone NEC
OPCS4	W552	Revision of prosthetic interposition arthroplasty of joint
OPCS4	W563	Revision of interposition arthroplasty of joint NEC

For the following ICD-10 codes:

ICD-10 codes	Description
M17.0	Bilateral primary osteoarthritis of knee
M17.1	Unilateral primary osteoarthritis of knee
M17.2	Bilateral post-traumatic osteoarthritis of knee
M17.3	Unilateral post-traumatic osteoarthritis of knee
M17.4	Other bilateral secondary osteoarthritis of knee
M17.5	Other unilateral secondary osteoarthritis of knee
M17.9	Osteoarthritis of knee, unspecified

Equality & Equity Statement

The Equality and Equity Assessments for this policy will be undertaken at CCG level. Please contact the relevant London CCG for further details of their Equality Impact Assessment.

Governance statement

In mid-2017, London's CCG Chief Officers supported a pan London programme to ensure equitable treatment access for all Londoners that is consistent, clinically appropriate and based on robust evidence that supports improved patient outcomes for certain treatments across London.

NHS England (London) commissioned Healthy London Partnership (HLP) to facilitate the programme management and communications work of the programme, known as 'London Choosing Wisely'. A London Choosing Wisely Steering Group was formed, chaired by the NHSE (London) Medical Director, Dr Vin Diwakar, and included clinical leaders representing each sustainability and transformation partnership (STP), the clinical leads appointed to the review of each area of care, patient representatives, and public health experts.

The London Choosing Wisely programme specifically looked at the following eight procedures: the surgical removal of benign skin lesions; hip arthroplasty; knee arthroplasty; knee arthroscopy; interventional treatments for back pain; varicose vein procedures; shoulder decompression and cataract surgery.

Six Task and Finish Groups were established to review the evidence and draft the policy documentation for each of the eight identified procedures (with hip and knee policies being considered together). Each group was chaired by a primary care clinical lead, who also sat on the Steering Group. All groups included primary and secondary care clinicians and patient representatives from across the London region and were supported by independent public health experts. Upon consideration of the evidence, the Task and Finish Group drafted and agreed the commissioning policy which was subsequently presented to the Steering Group for approval. The Steering Group's role was to ensure that a robust and rigorous review process had been carried out and to agree a final draft for each pan London policy.

London Choosing Wisely

Evidence Review Summary: **Knee arthroscopy**

Version	Date	Notes
Draft for PH and T&F Chair	30/04/18	Initial draft
Draft for T&F Group	02/05/18	T&F draft
Revised version post T&F 1	18/05/2018	Revised
Amended	31/07/2018	To include details of search terms from search strategy document, following LCW steering group meeting of 30/07/18
Amended	20/08/2108	Text added to evidence review approach section following discussion at July Steering group meeting

1.0 Introduction

What?	The aim of this review is to present the guidance and available evidence to the task and finish group in order to support informed decision making regarding the commissioning policy. Knee replacement surgery is typically an elective procedure performed under anaesthetic and is the commonest type of surgery performed for osteoarthritis (OA) [1]. Knee replacement can be either partial (one compartment is replaced) or total (the whole joint is replaced) knee replacement (TKR). Patients with confirmed or suspected malignancy, acute trauma, and suspected infection should be referred urgently or as an emergency via alternative pathways. Patients with inflammatory arthropathies and paediatric patients should be referred under alternative pathways. A list of OPCS codes relevant to this review (and ultimately the policy) are included in Appendix 2. The ICD-10 codes relevant to the procedure are listed in Appendix 3. These lists are not exhaustive and may be subject to alteration at CCG level during implementation of the policy.
Who for?	The evidence review applies to adults with osteoarthritis receiving an elective primary total knee arthroplasty.
Why?	Osteoarthritis is the commonest type of arthritis and one of the leading causes of pain and disability worldwide. The most commonly affected peripheral joints are the knees, hips and small joints of the hand. Important consequences are pain, limitation of daily activities and reduction in quality of life. There is often a poor linkage between radiological signs and physical symptoms of OA; minimal changes can be associated with much pain or modest structural changes can occur with minimal symptoms[2]. Osteoarthritis is the commonest indication for knee replacement[3]. The treatment aims of knee arthroplasty are to improve pain, function and quality of life. Patient reported outcome measures (PROMs) data for 2016-2017 showed that 81% of respondents reported an improvement in their general health following knee replacement, with the remainder reporting their general health to be either unchanged or worsened[4]. As with all surgical procedures, there is a potential risk of harm from undergoing knee arthroplasty. Risks include venous thromboembolism, infection and periprosthetic fracture. The mortality rate in the 90 days following TKR is estimated to be 0.5-1%[5]. The National Joint Registry published surgical data for 2016 with a 90 day mortality rate of 0.3% for patients undergoing primary knee joint replacement[3]. Therefore, it is important to review existing guidance and evidence relating to TKR in order to inform development of a pan-London policy.
Why an issue?	TKR is known to be a clinically and cost effective treatment for knee OA in patients with persistent and troublesome symptoms that are refractory to conservative management. However, the NICE guideline does not specifically state when patients should be referred for consideration of joint surgery. In the context of an ageing population and increasing demands on NHS resources, it seems likely that the need for knee arthroplasty will continue to increase (During 2016, 104,079 knee joint replacements were recorded in the National Joint Registry and there was a 3.8% increase in knee replacement procedures compared with 2015)[3].

	There are existing commissioning policies in use across the Healthy London Partnership, however these policies differ in their specification and criteria for access to treatment. There is therefore a need for one unified pan-London policy to prevent inequality in access to treatment.
Who else does what?	See Appendix 2 for a detailed table of current CCG policies. Some London CCGs have commissioning policies for knee arthroplasty: - BHR (Barking, Havering and Redbridge) - SWL (Croydon, Kingston, Merton, Richmond, Sutton, Wandsworth) - NWL (Brent, Central, Ealing, Hammersmith & Fulham, Harrow, Hillingdon, Hounslow, West London) The policies in these CCGs vary in their inclusion criteria. Other CCGs do not have any commissioning policy for knee arthroplasty: - WELC (City & Hackney, Newham, Tower Hamlets, Waltham Forest) - NCL (Barnet, Camden, Enfield, Haringey, Islington) - South East London (Bexley, Bromley, Greenwich, Lambeth, Lewisham, Southwark).

2.0 Search strategy:

The London Choosing Wisely team drafted the proposed scope, following which views were sought from the wider membership; including patient, GP and Consultant representatives across London.

This review has been conducted in four stages:

1. Collate relevant guidance, as far as it is available, from the following named sources:
   - NICE guidelines – Osteoarthritis: care and management
   - Royal College of Surgeons (RCS) / British Orthopaedic Association (BOA) commissioning guide: painful osteoarthritis of the knee

2. A review of existing CCG policies across London in comparison with national guidance.

3. An evidence review of the duration of potential conservative treatments.

4. Examples of pain and function scales / definitions with evidence review, where possible.

Exclusions:

- Patients with confirmed or suspected malignancy.
- Patients with acute trauma or suspected infection.
- Patients with inflammatory arthropathies.
- Patients undergoing revision surgery.
- Paediatric patients.

2.1 Search method

An initial search was undertaken of national guidelines and other CCG policies (where available). In line with the scope agreed for this work, the literature review was intended to focus on collating information across existing CCG policies and reviewing approximately 10 research papers (level 2 policy group).

Search Terms

The literature search was performed using the following search terms: "arthroscopy", "arthroscopic", "arthroscope", "arthroscopies", "knee", "osteoarthritis", "lavage", "washout", "debridement", "loose bodies", "meniscectomy", "partial", "degenerative", "traumatic"

The evidence review has focused on total knee arthroplasty as a treatment for knee osteoarthritis. The literature search was conducted according to the following table, with Level 1 evidence sought first, continuing through the levels of evidence where necessary in the absence of higher quality evidence.

Level 1	Meta-analyses, systematic reviews of randomised controlled trials
Level 2	Randomised controlled trials
Level 3	Case-control or cohort studies
Level 4	Non-analytic studies e.g. case reports, case series
Level 5	Expert opinion

The following sources were searched in relation to the above search strategy for knee arthroplasty:

- National Institute of Clinical Excellence (NICE)
- Policies in use by CCGs (where publically available)
- Cochrane Library
- PubMed/MEDLINE
- British Orthopaedic Association (BOA)
- British Associate for Surgery of the Knee (BASK)
- Royal College of Surgeons (RCS)

2.2 Inclusion / exclusion criteria for evidence review:

Inclusion:

Unlimited date range

Evidence relating to adults included

Exclusion:

Non English Language papers

3.0 Summary of findings

Additional detail regarding the evidence referenced can be found in Appendix 1.

	Summary of grade of evidence used					Other	
	Level 1	**Level 2**	**Level 3**	**Level 4**	**Level 5**	**National guidelines**	**CCG policies**
Total knee arthroplasty	✓		✓			✓	✓

A detailed NICE guideline for the management of patients with OA in any joint was published in 2014[2]. The guideline emphasises the importance of a holistic, patient-centred approach to management and offering patients the opportunity to be involved in self-management of core treatments, including education and lifestyle modifications, exercise and weight loss (where appropriate). The guideline advises against specific prioritisation criteria for joint replacement surgery, instead suggesting that referral should be considered:

- When symptoms significantly affect quality of life (QoL);
- When symptoms are not controlled with non-surgical management, and
- Before there is prolonged functional limitation or severe pain.

Commissioning guidance published by RCS/BOA/BASK on painful OA of the knee[1] advises that referral should be considered for patients with moderate to severe symptoms who have been refractory to non-surgical management for three months. The publication also advises optimisation of modifiable risk factors prior to joint surgery, but specifically focuses on medical co-morbidities, rather than lifestyle factors.

Symptoms of knee OA can be classified in various ways and there are several pain and function scoring systems (patient-reported outcome measures) that are in clinical and/or research use. Examples of scoring systems which may be helpful in providing standardisation around functional status have been described in section 4. However none have been recommended for use in deciding timing for joint surgery by national or professional body guidelines.

There are commissioning policies in place for knee arthroplasty in SWL, NWL and part of NEL (BHR CCGs). The SWL and NWL policies have additional criteria or suggestions beyond the national guidance for referral for joint surgery, including symptom classifications and health optimisation specifications (see section 4 for further detail). The policy for SWL states that patients should be referred if symptoms are not controlled after at least six months of conservative management. The NICE guideline does not specify a minimum time period prior to referral, whereas the RCS/BOA guideline suggests three months.

There are no high quality trials that have assessed the optimum timing of joint replacement surgery. Based on the evidence available, one systematic review found that pain scores did not deteriorate in patients with end-stage OA waiting six months for knee arthroplasty[6]. However there is some evidence from cohort studies[7,8] that patients with lower pre-operative functional status had poorer clinical outcomes in the long term.

4.0 More detailed findings

1. **Collate relevant guidance from the following named sources:**
   - **NICE guidelines – Osteoarthritis (OA): care and management**
   - **Royal College of Surgeons (RCS) / British Orthopaedic Association (BOA) commissioning guide: painful osteoarthritis of the knee**

The guidance relating to knee arthroplasty specifically from each relevant guideline is summarised in the table below:

NICE guideline: Osteoarthritis care and management (2014)[2]	**RCS/BOA Commissioning guide: painful osteoarthritis of the knee (2013)[1]**
Introduction • OA is a clinical syndrome characterised by joint pain and varying degrees of functional limitation and reduced quality of life (QoL) • There is often a poor link between x-ray changes and symptoms • Contrary to popular belief, osteoarthritis is not caused by ageing and does not necessarily deteriorate.	Introduction • Most patients present to primary care with symptoms of pain and stiffness, which reduces mobility and may affect QoL • The disease may not be progressive and most patients will not need surgery, with symptoms well controlled with non-surgical measures • TKR is highly effective in up to 85% of patients providing consistent lasting benefit with 95% 7 year joint survival. • TKR is highly cost effective (based on analysis of data from a multi-centred randomised trial showing £5623 per quality-adjusted life year (QALY) gained for the average patient). • Alternatives to TKR are partial replacement or osteotomy around the knee.

Diagnosis
• OA can be diagnosed clinically without the need for investigations in patients:
  ○ 45 years or older
  ○ With activity-related joint pain
  ○ No morning stiffness or morning stiffness <30 minutes
	Diagnosis
	• OA can be diagnosed clinically in patients with:
	  ○ Persistent knee pain
	  ○ Limited knee stiffness (<30 minutes)
	  ○ Reduced function
	  ○ Crepitus on examination
	  ○ Restricted movement
	  ○ Bony enlargement
	• X-rays may be taken for initial diagnosis but are not required in patients over 45

Non-surgical management
• Provide a holistic approach and offer advice on core treatments to all patients, which include information, activity/exercise and weight loss where relevant
• Consider simple analgesia in addition to core treatments:
  ○ Paracetamol and topical NSAIDs first line
  ○ Oral NSAIDs, COX-2 inhibitors or opioids if first line therapy insufficient
• Consider corticosteroid joint injections as an adjunct to core treatments for relief of moderate to severe pain
	Management in primary care
	• Primary care management should be in accordance with NICE guidance
	• Patients should be encouraged to refer to the NHS shared decision-making tool for osteoarthritis of the knee
	• Refer patients with moderate or severe symptoms that are refractory for up to 3 months of non-surgical treatment.
	• Referrals should be regardless of radiographic grade of disease
	• Consider optimisation of modifiable risk factors that may delay surgical treatment prior to referral (e.g. investigation and treatment of anaemia or leg ulcers)
	• Additional referral guidance as per NICE guideline

Referral for joint surgery • Base decisions on referral thresholds on discussions between patient representatives, referring clinicians and surgeons, rather than using scoring tools for prioritisation • Referring clinicians should ensure the patient has been offered at least the core treatments and is informed about risks/benefits of surgery, post-operative recovery and effects of the prosthesis • Consider referral when patient has joint symptoms that significantly impact quality of life and are refractory to non-surgical management • Refer for consideration of joint surgery before there is prolonged and established functional limitation and severe pain • Patient-specific factors (including age, sex, smoking, obesity and comorbidities) should not be barriers to referral	Management in secondary care • Assessment: history, examination and x-ray (+/- MRI if further information required beyond x-ray) • The decision for surgery is based on the pattern of symptoms, with the type of surgery determined by the pattern of joint damage and patient preference • All patients must have engaged in a shared decision making process about alternatives to surgery. • Offer continued support with non-surgical measures and period of observation if patient is undecided about surgery

	Total knee arthroplasty
	• This should be considered in patients with:
	  ○ Moderate/severe pain not controlled with 3 months of non-surgical management
	  ○ Evidence of exposed bone present in at least one knee joint compartment i.e. Kellgren Lawrence grade 3 (Kellgren Lawrence is a grading system used to assess the severity of OA based on x-ray features)
	• There may also be consideration of surgery in patients without pain but who have:
	  ○ Functional disability with end stage cartilage disease

	○ Progressive deformity of the knee (varus/valgus) with functional disability ○ In these cases a second opinion or recorded case discussion is advised

2. A review of existing CCG policies across London in comparison with national guidance.

Below outlines the current polices in use across London. Text is highlighted to show areas of divergence from national guidance.

NEL	SWL		NWL	
Barking Havering Redbridge	Croydon Kingston Merton	Richmond Sutton Wandsworth	Brent Central Ealing H&F	Harrow Hillingdon Hounslow West London
Latest policy 2018	Latest policy 2017-2018		Latest policy 2017-2018	
With prior approval, BHR CCGs will fund joint surgery where all of the following criteria are met: ▪ Osteoarthritis with joint symptoms (pain, stiffness and reduced function) that have a substantial impact on quality of life as agreed with the patient and or the patient's representative, referring clinicians and surgeons AND · The symptoms are refractory to non-surgical treatment. AND · There is evidence that conservative means have failed to alleviate pain and disability AND · The prosthesis used are standard	SWL CCGs fund this procedure when ALL of the following criteria (1 - 3) are met. 1. Patient has a) Intense or severe persistent pain with moderate or severe functional impairment when compared to the classification system OR b) Significant instability of the knee joint with severe functional impairment OR c) Radiological features of severe disease with moderate functional impairments OR d) Radiological features of moderate disease with severe functional impairment or instability of the knee joint. AND 2. Patient engaged with conservative therapies for at least 6 months and these failed.		Funding for total or partial knee replacement surgery is available if the following criteria are met 1. Patient complains of moderate joint pain AND moderate to severe functional limitations that has a substantial impact on QoL, despite the use of non-surgical treatments such as adequate doses of NSAID analgesia, weight control treatments and physical therapies. AND 2a. Has radiological features of severe disease; OR 2b. Has radiological features of moderate disease with limited mobility or instability of the knee joint Patients not meeting the above criteria can be referred via the IFR route where there are exceptional circumstances present. Note: Patients who smoke should have attempted to stop smoking 8 to12 weeks before referral to reduce the risk of surgery and the risk of post-surgery complications.	

	AND 3. Patient has been engaged in shared decision making to ensure he/she is well informed about the treatment options available and personal values, preferences and circumstances are taken into consideration NB: It is recommended that the SWL Patient Decision Aid is completed. This needs to be recorded in the patient's medical notes, including the written or other materials provided. Please note: SWL CCGs do not routinely funded Patellar Resurfacing as a stand-alone procedure. <u>Conservative treatments</u> Primary care should ensure that ALL of the following conservative measures are attempted over a period of six months prior to referral for knee replacement surgery: <u>Medication</u> Optimum tolerated doses of analgesic should be used and patients should have gained an understanding of how to use oral or topical analgesics (Paracetamol, NSAIDs or Opioid analgesics). Intra-articular corticosteroid injections should be considered as an adjunct to analgesia. <u>Physiotherapy</u> NICE "core" treatments of either guided exercise and muscle strengthening programmes or of supervised physical therapy must have been given. <u>Patient Education and Orthosis</u> Patient education such as elimination of damaging influence on knees (by reducing weight loading), activity modification (avoid impact and excessive exercise) and lifestyle adjustment. Patients must have been advised about, and/or assessed for, clinically appropriate walking aids and home adaptations. <u>Lifestyle improvement</u>	Patients should be routinely offered referral to smoking cessation services to reduce these surgical risks.

	It is strongly advised to reduce BMI to less than 35 kg/m2 as this may reduce complications and improve outcomes. Patients with a BMI greater than 35 kg/m2 should be routinely offered referral to a weight management service to reduce these risks. Patients who smoke should be advised to attempt to stop smoking and referred to stop-smoking services. Non-pharmacological management such as biomechanical interventions, physiotherapy and exercising to improve local muscle strength and general aerobic fitness (note: physiotherapy is ineffective in bone on bone OA).	
Discrepancies between CCG policies and national guidance		

• Policy is in line with NICE guidance	• Policy specifies six months conservative management, which is not in accordance with current national and professional body guidelines:
	  ○ NICE does not specify a time period of conservative management
	  ○ BOA/BASK advises three months of conservative management
	• NICE guidance states patient-specific factors should not be barriers to referral
	• NICE states decisions on referrals should not be on basis of scoring systems
	• NICE advises consideration of joint surgery before there is prolonged and established functional limitation and severe pain
		• Policy is in line with NICE guidance
		• NICE guidance states patient-specific factors such as smoking should not be barriers to referral

3. An evidence review of the duration of potential conservative treatments

NICE guidance specifically states that patients should be considered for referral for joint surgery before developing persistent and established functional limitation and severe pain. The guidance says that patients should be referred when they are refractory to non-surgical treatments, however it does not define the time period after which a patient will be considered "refractory".

A systematic review by Hoogeboom *et al.* was published in 2009[6] and looked at the effects of waiting list periods on pain and function in patients with end-stage hip and knee OA awaiting joint replacement surgery. The study included 15 randomised controlled trials (RCTs) and included 858 patients for knee arthroplasty. The review found strong evidence that pain scores did not deteriorate in patients waiting less than six months for TKR. There were conflicting results for self-reported functional scores in this time period. The results over the longer waiting times (>6 months) were unclear. The study was limited by the small number of high quality studies for inclusion and inconsistency of results.

A retrospective cohort study[7] looked at the mid- to long-term postoperative outcomes of 105 patients undergoing primary joint replacement, according to their preoperative functional status. Patients were classified as either functionally impaired or severely functionally impaired, according to their WOMAC score (The Western Ontario and McMaster University Osteoarthritis Index is an OA-specific measure of disability and quality of life - see page 14). Whilst the severely functionally impaired group demonstrated a greater benefit in terms of difference in WOMAC scores pre- and post-arthroplasty, in the longer term the satisfaction rates were lower in the unrevised patients from the severely functionally impaired group. Therefore, whilst severely functional patients received the greatest improvement in WOMAC score from arthroplasty, their satisfaction scores were never as high as the functionally impaired group in the longer term.

A prospective study[8] of 222 patients with OA in the USA looked at the clinical outcomes of patients two years after total hip or knee arthroplasty to assess the predictors of outcome. Patients were assessed using a Medical Outcomes Study Short Form 36 (SF-36) and WOMAC score preoperatively and at 3, 6, and 24 months postoperatively. The cohort were divided into two groups preoperatively (high function and low function) according to the median value of their WOMAC score. At 6 months post-operative the high function group had better WOMAC scores than the low function group and at 24 months the outcomes scores for the low function group were still not at the level of the high function group.

The available evidence suggests that the timing of primary arthroplasty may be of importance in optimising postoperative outcomes[7,8]. However there is a lack of high quality RCTs assessing the optimum timing of joint replacement.

4. Pain and function scales for use in knee osteoarthritis

SWL Pain Classification System from https://www.aetnabetterhealth.com		**NWL Pain Classification System (no reference explicitly available)**	
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 NSAIDs to control pain with no/few side effects.	Mild	Pain interferes minimally on an intermittent basis with usual daily activities Not related to rest or sleep Pain controlled by one or more of the following; NSAIDs with no or tolerable side effects, aspirin at regular doses, paracetamol
Moderate	Occasional pain. Pain when walking on level surfaces (half an hour, or standing). Some limitations of daily activities. Medication, aspirin, paracetamol or NSAIDs to control with no/few side effects.	Moderate	Pain occurs daily with movement and interferes with usual daily activities. Vigorous activities cannot be performed Not related to rest or sleep Pain controlled by one or more of the following; NSAIDs with no or tolerable side effects, aspirin at regular doses, paracetamol
Intense	Pain of almost continuous nature. Pain when walking short distances on level surfaces 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)	Severe	Pain is constant and interferes with most activities of daily living Pain at rest or interferes with sleep Pain not controlled, even by narcotic analgesics
SWL Function Classification System from https://www.aetnabetterhealth.com		**NWL Function Classification System (no reference explicitly available)**	
Minor	Functional capacity adequate to conduct normal activities and self-care Walking capacity of more than one hour No aids needed	Minor	Functional capacity adequate to conduct normal activities and self-care Walking capacity of more than one hour No aids needed
Moderate	Functional capacity adequate to perform only a few or none of the normal activities and self-care Walking capacity of between thirty minutes to an hour Aids such as a cane are needed	Moderate	Functional capacity adequate to perform only a few or none of the normal activities and self-care Walking capacity of between thirty minutes to an hour Aids such as a cane are needed
Severe	Largely or wholly incapacitated Walking capacity of less than half hour or unable to walk or bedridden Aids such as a cane, a walker or a wheelchair are required	Severe	Largely or wholly incapacitated Walking capacity of less than half hour or unable to walk or bedridden Aids such as a cane, a walker or a wheelchair are required

Examples of Patient Reported Outcome Measures for assessment of joint surgery

Note that other scoring systems are in use and this list is not exhaustive.

The Oxford Knee Score[9]

A Patient Reported Outcome questionnaire used to assess the patient's perspective of their outcome following TKR. It is now used as part of the Patient Reported Outcome Measure (PROM) programme in the UK. The questionnaire comprises 12 questions with a simple scoring system to assess pain and function of the knee. The questionnaire is completed solely by the patient, with no input from the clinical team.

WOMAC Score[10]

The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) is used to assess pain, stiffness and functional limitation specifically in patients with osteoarthritis.

The Knee Society Score[11]

The Knee Society Clinical Rating System is used internationally as a tool for assessing objective and subjective outcomes from knee arthroplasty. The scoring system includes an assessment of the knee and a rating of the patient's functional abilities (e.g. climbing stairs) before and after surgery. The Knee Society Score has been refined in recent years and is both physician and patient derived, with different versions to be administered in the preoperative and postoperative periods. An objective assessment of the knee is completed by the clinician and the patient then rates their satisfaction, functional activities and expectations.

The Lysholm Knee Scoring Scale[12]

Originally developed to evaluate the outcomes of knee ligament surgery, the Lysholm Scale is now in use for a variety of knee conditions, including osteoarthritis. The Lysholm score consists of a patient questionnaire assessing eight items: pain, instability, locking, swelling, limp, stair climbing, squatting and need for support. There are different points assigned to each section and the total score is the sum of points on a range form 0-100. Higher scores indicate better outcomes with fewer limitations.

Knee Injury and Osteoarthritis Outcome Score (KOOS)[13]

The KOOS was developed as an extension of the WOMAC OA Index to assess short- and long-term symptoms and function in people with knee injury and OA. There are five separately scored subscales: pain, other symptoms, function with activities of daily living, function in sports and recreation and knee-related quality of life. The effect size is generally largest for the subscale QOL followed by the subscale pain.

Appendix 1 – References

This section lists the references used to inform the review. Where it is relevant to provide further context or detail, content of the publication has been included in a condensed form with the intention of making it easier for task and finish group members to assimilate information. Full text can be found in the source documents.

Reference	Evidence level	Source	Citation or Title	Content
1	Other	RCS/BOA/BASK	Commissioning guide: Painful osteoarthritis of the knee, 2013	Reference to inform background information.
2	Other	NICE	Osteoarthritis: care and management 2014	Reference to inform background information.
3	Other	National Joint Registry	14th Annual Report 2017: National Joint Registry for England, Wales, Northern Ireland and the Isle of Man Surgical data to 31 December 2016 http://www.njrreports.org.uk/Portals/0/PDFdownloads/NJR%2014th%20Annual%20Report%202017.pdf (accessed April 2018)	Reference to inform background information.
4	Other	NHS digital website	Provisional Quarterly Patient Reported Outcome Measures (PROMs) in England, April 2016 to March 2017 - February 2018 Release https://digital.nhs.uk/data-and-information/publications/statistical/patient-reported-outcome-measures-proms/provisional-quarterly-patient-reported-outcome-measures-proms-in-england-april-2016-to-march-2017-february-2018-release (Accessed May 2018)	Comparing pre- and post-operative 'EQ-5D Index' scores (a combination of five key criteria concerning patients' self-reported general health), an increase in general health was recorded for 80.9 per cent of knee replacement respondents (80.7 per cent for 2015-16).
5	Level 5	The New England Journal of Medicine	Parachutes and Preferences — A Trial of Knee Replacement, NEJM, Katz JN, 2015	Reference to inform background information.
6	Level 1 (However caution regarding	Osteoarthritis and Cartilage	Hoogeboom, Thomas & Van den Ende, Cornelia & van der Sluis, Geert & Elings, Jordi & Dronkers, Jaap & Aiken, Alice &	**Objective** To systematically describe changes in pain and functioning in patients with osteoarthritis (OA) awaiting total joint replacement (TJR), and to assess determinants of this change.

	quality of underlying studies)		Meeteren, Nico. (2009). The impact of waiting for total joint replacement on pain and functional status: a systematic review. Osteoarthritis and cartilage / OARS, Osteoarthritis Research Society. 17. 1420-7	**Methods** MEDLINE®, EMBASE, CINAHL® and Cochrane Database were searched through June 2008. The reference lists of eligible publications were reviewed. Studies that monitored pain and functioning in patients with hip or knee OA during the waiting list for TJR were analyzed. Data were collected with a pre-specified collection tool. Methodological quality was assessed and a best-evidence analysis was performed to summarize results. **Results** Fifteen studies, of which two were of high quality, were included and involved 788 hip and 858 knee patients (mean age 59–72 and main wait 42–399 days). There was strong evidence that pain (in hip and knee OA) and self-reported functioning (in hip OA) do not deteriorate during a <180 days wait. Conflicting evidence was established for the change on self-reported functioning in patients with knee OA waiting <180 days. Moreover, strong evidence was found for an association between the female gender and intensified pain. **Conclusion** Patients with OA do not experience deterioration in pain or self-reported functional status whilst waiting <180 days for TJR. Changes over a longer waiting period are unclear. To strengthen and complement the present evidence, further high-quality studies are needed, in which preferably also performance-based measures are used.
7	Level 3	The Journal of Arthroplasty	Carlos J. Lavernia, Anneliese D. Heiner, Michael H. Cronin, Jesus M. Villa, Mark D. Rossi, Prolonged Conservative Management in Total Joint Arthroplasty: Harming the Patient?, The Journal of Arthroplasty, Volume 32, Issue 9, Supplement, 2017	**Background** It is important to understand the long-term consequences of postponing total joint arthroplasty until the onset of severe functional impairment. Therefore, the purpose of this investigation was to determine and compare the midterm to long-term postoperative outcomes of patients who underwent total joint arthroplasty with severe vs less severe preoperative functional impairment. **Methods** A total of 105 primary unilateral total hip/knee arthroplasty patients were studied. Patients were divided into 2 groups—severely functionally impaired (preoperative Western Ontario and McMaster Osteoarthritis Index function ≥51 points) and functionally impaired (preoperative Western Ontario and McMaster Osteoarthritis Index function <51 points). **Results** At an average of 11.2 years postoperatively, the patients who were severely functionally impaired preoperatively had worse outcomes than did the patients with less severe preoperative functional impairment. **Conclusion** Our data suggest that, after surgery, it is unlikely that patients who are severely functionally impaired preoperatively will ever catch up to patients who have the surgery with less severe functional impairment.
8	Level 3	Arthritis & Rheumatology	P.R. Fortin, J.R. Penrod, A.E. Clarke, Y. St-Pierre, L. Joseph, P. Belisle, *et al.*Timing of total	**Objective** To determine the predictors of outcome in patients with osteoarthritis 2 years after receiving total hip or knee replacement.

			joint replacement affects clinical outcomes among patients with osteoarthritis of the hip or knee Arthritis Rheum, 46 (2002), pp. 3327-3330	**Methods** A prospective cohort study of 222 osteoarthritis patients undergoing total hip or knee replacement in Boston and Montreal was done. Their postoperative outcomes at 6 months were previously reported. This followup reports on the outcomes after 2 years among the 165 patients (74%) who remained. The subjects were divided into 2 groups according to the median value of their preoperative Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) function score. The Short Form 36-item physical function subscale and the WOMAC pain and function subscale scores were collected at baseline and at 3, 6, and 24 months postoperatively. Clinical outcomes were analyzed at 2 years, using descriptive and multiple regression analyses. **Results** Improvements in pain and function at 2 years were similar to those observed at 6 months. Those subjects with the worst function and pain at the time of surgery (baseline) had comparatively worse function 2 years after surgery. **Conclusion** In this comparison, the poor outcomes observed at 6 months following total joint replacement in patients with worse baseline functional status persisted after 2 years. Although there are no validated indications for when a patient should optimally have total joint replacement, these data suggest that timing of surgery may be more important than previously realized and, specifically, that performing surgery earlier in the course of functional decline may be associated with better outcome.
9	Other	Website	http://innovation.ox.ac.uk/outcome-measures/oxford-knee-score-oks/ - Accessed April 2018	Reference to inform background information.
10	Other	Centre for Reviews and Dissemination, University of York Website	https://www.york.ac.uk/media/crd/The_use_and_reporting_of_WOMAC.pdf - Accessed April 2018	Reference to inform background information.
11	Other	Clinical orthopaedics and related research	Scuderi, Giles & B Bourne, Robert & Noble, Philip & B Benjamin, James & Lonner, Jess & Scott, William. (2011). The new Knee Society Knee Scoring System. Clinical orthopaedics and related research. 470	Reference to inform background information.
12	Other	Website	http://boneandspine.com/lysholm-knee-scoring-scale/ - Accessed April 2018	Reference to inform background information.
13	Other	Health and Quality of Life Outcomes	EM Roos, LS Lohmander. The knee injury and osteoarthritis outcome score (KOOS): from joint injury to osteoarthritis. Health and Quality of Life Outcomes 2003	Reference to inform background information.

Appendix 2 – OPCS codes

OPCS Codes covered within this evidence review (and ultimately the policy). This list is in accordance with the codes for knee arthroplasty referenced in the BOA/BASK commissioning guidance.

Note: This can be added to at CCG level during implementation of policy.

Proposed OPCS Codes for inclusion in the policy		
OPCS4	W401	Primary total prosthetic replacement of knee joint using cement
OPCS4	W408	Other specified total prosthetic replacement of knee joint using cement
OPCS4	W409	Unspecified total prosthetic replacement of knee joint using cement
OPCS4	W411	Primary total prosthetic replacement of knee joint not using cement
OPCS4	W418	Other specified total prosthetic replacement of knee joint not using cement
OPCS4	W419	Unspecified total prosthetic replacement of knee joint not using cement
OPCS4	W421	Primary total prosthetic replacement of knee joint NEC
OPCS4	W428	Other specified other total prosthetic replacement of knee joint
OPCS4	W429	Unspecified other total prosthetic replacement of knee joint
OPCS4	W521	Primary prosthetic replacement of articulation of bone using cement NEC
OPCS4	W528	Other specified prosthetic replacement of articulation of other bone using cement
OPCS4	W529	Unspecified prosthetic replacement of articulation of other bone using cement
OPCS4	W531	Primary prosthetic replacement of articulation of bone not using cement NEC
OPCS4	W538	Other specified prosthetic replacement of articulation of other bone not using cement
OPCS4	W539	Unspecified prosthetic replacement of articulation of other bone not using cement
OPCS4	W541	Primary prosthetic replacement of articulation of bone NEC
OPCS4	W548	Other specified other prosthetic replacement of articulation of other bone
OPCS4	W549	Unspecified other prosthetic replacement of articulation of other bone

Relevant OPCS codes but not included in the policy		
OPCS4	W412	Conversion to total prosthetic replacement of knee joint not using cement
OPCS4	W422	Conversion to total prosthetic replacement of knee joint NEC
OPCS4	W431	Primary total prosthetic replacement of joint using cement NEC
OPCS4	W438	Other specified total prosthetic replacement of other joint using cement
OPCS4	W439	Unspecified total prosthetic replacement of other joint using cement
OPCS4	W441	Primary total prosthetic replacement of joint not using cement NEC
OPCS4	W448	Other specified total prosthetic replacement of other joint not using cement
OPCS4	W449	Unspecified total prosthetic replacement of other joint not using cement
OPCS4	W451	Primary total prosthetic replacement of joint NEC
OPCS4	W458	Other specified other total prosthetic replacement of other joint
OPCS4	W459	Unspecified other total prosthetic replacement of other joint
OPCS4	W551	Primary prosthetic interposition arthroplasty of joint

OPCS4	W553	Conversion to prosthetic interposition arthroplasty of joint
OPCS4	W558	Other specified prosthetic interposition reconstruction of joint
OPCS4	W559	Unspecified prosthetic interposition reconstruction of joint
OPCS4	W562	Primary interposition arthroplasty of joint NEC
OPCS4	W564	Conversion to interposition arthroplasty of joint NEC
OPCS4	W568	Other specified other interposition reconstruction of joint
OPCS4	W569	Unspecified other interposition reconstruction of joint
OPCS4	W588	Other specified other reconstruction of joint
OPCS4	W589	Unspecified other reconstruction of joint
OPCS4	O181	Primary hybrid prosthetic replacement of knee joint using cement
OPCS4	O188	Other specified hybrid prosthetic replacement of knee joint using cement
OPCS4	O189	Unspecified hybrid prosthetic replacement of knee joint using cement
OPCS4	O182	Conversion to hybrid prosthetic replacement of knee joint using cement
OPCS4	W402	Conversion to total prosthetic replacement of knee joint using cement
OPCS4	O180	Conversion from previous hybrid prosthetic replacement of knee joint using cement
OPCS4	O183	Revision of hybrid prosthetic replacement of knee joint using cement
OPCS4	O184	Attention to hybrid prosthetic replacement of knee joint using cement
OPCS4	W400	Conversion from previous cemented total prosthetic replacement of knee joint
OPCS4	W403	Revision of total prosthetic replacement of knee joint using cement
OPCS4	W404	Revision of one component of total prosthetic replacement of knee joint using cement
OPCS4	W410	Conversion from previous uncemented total prosthetic replacement of knee joint
OPCS4	W413	Revision of total prosthetic replacement of knee joint not using cement
OPCS4	W414	Revision of one component of total prosthetic replacement of knee joint not using cement
OPCS4	W420	Conversion from previous total prosthetic replacement of knee joint NEC
OPCS4	W423	Revision of total prosthetic replacement of knee joint NEC
OPCS4	W424	Attention to total prosthetic replacement of knee joint NEC
OPCS4	W425	Revision of one component of total prosthetic replacement of knee joint NEC
OPCS4	W426	Arthrolysis of total prosthetic replacement of knee joint
OPCS4	W433	Revision of total prosthetic replacement of joint using cement NEC
OPCS4	W433	Revision of total prosthetic replacement of joint using cement NEC
OPCS4	W443	Revision of total prosthetic replacement of joint not using cement NEC
OPCS4	W443	Revision of total prosthetic replacement of joint not using cement NEC
OPCS4	W453	Revision of total prosthetic replacement of joint NEC
OPCS4	W453	Revision of total prosthetic replacement of joint NEC
OPCS4	W523	Revision of prosthetic replacement of articulation of bone using cement NEC
OPCS4	Z787	Patella
OPCS4	W533	Revision of prosthetic replacement of articulation of bone not using cement NEC
OPCS4	W543	Revision of prosthetic replacement of articulation of bone NEC

OPCS4	W552	Revision of prosthetic interposition arthroplasty of joint
OPCS4	W563	Revision of interposition arthroplasty of joint NEC

Appendix 3 –ICD-10 codes

Below outlines the proposed ICD-10 codes for inclusion in the policy. This list is in accordance with the codes referenced for TKR in the BOA/BASK commissioning guidance on painful OA of the knee.

Note: This list can be added to at CCG level during implementation of policy.

ICD-10 codes	Description
M17.0	Bilateral primary osteoarthritis of knee
M17.1	Unilateral primary osteoarthritis of knee
M17.2	Bilateral post-traumatic osteoarthritis of knee
M17.3	Unilateral post-traumatic osteoarthritis of knee
M17.4	Other bilateral secondary osteoarthritis of knee
M17.5	Other unilateral secondary osteoarthritis of knee
M17.9	Osteoarthritis of knee, unspecified

Appendix 4 – Current CCG policies and new LCW policy

WELC (City & Hackney, Newham, Tower Hamlets and Waltham Forest), NCL (Barnet, Camden, Enfield, Haringey, Islington) and SEL (Bexley, Bromley, Greenwich, Lambeth, Lewisham, Southwark) did not have a policy for knee arthroplasty at the time of review.

NEL	**SWL**	**NWL**	**LCW**
Barking Havering Redbridge	Croydon Kingston Merton Richmond Sutton Wandsworth	Brent Central Ealing H&F Harrow Hillingdon Hounslow West London	
Latest policy 2018	Latest policy 2017-2018	Latest policy 2017-2018	June 2018
With prior approval, BHR CCGs will fund joint surgery where all of the following criteria are met: ▪ Osteoarthritis with joint symptoms (pain, stiffness and reduced function) that have a substantial impact on quality of life as agreed with the patient and or the patient's representative, referring clinicians and surgeons AND · The symptoms are refractory to non-surgical treatment. AND · There is evidence that conservative means have failed to alleviate pain and disability AND · The prosthesis used are standard	SWL CCGs fund this procedure when ALL of the following criteria (1 - 3) are met. 1. Patient has a) Intense or severe persistent pain with moderate or severe functional impairment when compared to the classification system OR b) Significant instability of the knee joint with severe functional impairment OR c) Radiological features of severe disease with moderate functional impairments OR d) Radiological features of moderate disease with severe functional impairment or instability of the knee joint. AND 2. Patient engaged with conservative therapies for at least 6 months and these	Funding for total or partial knee replacement surgery is available if the following criteria are met 1. Patient complains of moderate joint pain AND moderate to severe functional limitations that has a substantial impact on QoL, despite the use of non-surgical treatments such as adequate doses of NSAID analgesia, weight control treatments and physical therapies. AND 2a. Has radiological features of severe disease; OR 2b. Has radiological features of moderate disease with limited mobility or instability of the knee joint Patients not meeting the above criteria can be referred via the IFR route where there are	The following exclusions apply: Patients with joint failure from causes other than degenerative disease / osteoarthritis Patients with confirmed or suspected malignancy Patients with acute trauma or suspected infection Patients with inflammatory arthropathies Paediatric patients In ordinary circumstances*, funding for total or partial knee replacement surgery is available for patients who meet ALL of the following criteria: Osteoarthritis with joint symptoms (pain, stiffness, reduced function, joint instability) that have a substantial impact on quality of life as agreed

	failed. AND 3. Patient has been engaged in shared decision making to ensure he/she is well informed about the treatment options available and personal values, preferences and circumstances are taken into consideration NB: It is recommended that the SWL Patient Decision Aid is completed. This needs to be recorded in the patient's medical notes, including the written or other materials provided. Please note: SWL CCGs do not routinely funded Patellar Resurfacing as a stand-alone procedure. <u>Conservative treatments</u> Primary care should ensure that ALL of the following conservative measures are attempted over a period of six months prior to referral for knee replacement surgery: <u>Medication</u> Optimum tolerated doses of analgesic should be used and patients should have gained an understanding of how to use oral or topical analgesics (Paracetamol, NSAIDs or Opioid analgesics). Intra-articular corticosteroid injections should be considered as an adjunct to analgesia. <u>Physiotherapy</u> NICE "core" treatments of either guided exercise and muscle strengthening programmes or of supervised physical therapy must have been given. <u>Patient Education and Orthosis</u>	exceptional circumstances present. Note: Patients who smoke should have attempted to stop smoking 8 to12 weeks before referral to reduce the risk of surgery and the risk of post-surgery complications. Patients should be routinely offered referral to smoking cessation services to reduce these surgical risks.	with the patient and/or the patient's representative, referring clinicians and surgeons AND The symptoms are refractory to non-surgical treatment (including pain relief, exercise, physiotherapy and weight loss where appropriate) AND There is a radiographic diagnosis of degenerative disease AND The patient confirms that they wish to discuss surgical treatment options. *If clinician considers need for referral/treatment on clinical grounds outside of these criteria, please refer to the CCG Individual Funding Request policy for further information.

	Patient education such as elimination of damaging influence on knees (by reducing weight loading), activity modification (avoid impact and excessive exercise) and lifestyle adjustment. Patients must have been advised about, and/or assessed for, clinically appropriate walking aids and home adaptations. <u>Lifestyle improvement</u> It is strongly advised to reduce BMI to less than 35 kg/m2 as this may reduce complications and improve outcomes. Patients with a BMI greater than 35 kg/m2 should be routinely offered referral to a weight management service to reduce these risks. Patients who smoke should be advised to attempt to stop smoking and referred to stop-smoking services. Non-pharmacological management such as biomechanical interventions, physiotherapy and exercising to improve local muscle strength and general aerobic fitness (note: physiotherapy is ineffective in bone on bone OA).		