

Appendix 3a London Choosing Wisely

Draft Policy Template: Primary Hip Arthroplasty

Version	Date	Notes
Draft for Task & Finish Group	03/05/2018	Initial draft
Revised version post Task & Finish Group 1	14/05/2018	Criteria for commissioning Rationale for commissioning completed Adherence to NICE guidance completed Governance statement completed Updated ICD-10 and OPCS codes
Revised version post Task & Finish Group 2	17/05/18	Appendix 2 (codes) moved to Appendix 3 Appendix 2 added – Summary of current CCG policies across London and LCW policy
Revised version following soft launch	15/06/18	Commissioning criteria updated Advice for primary care section updated Summary of findings in policy updated
Minor revision following feedback from Task & Finish Chair	16/07/18	Minor wording changes as per chair's request
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.
Final version	20/08/18	Text added to evidence review approach section (Appendix) following discussion at July Steering group meeting.

Commissioning Statement (similar to an Executive Summary)

COMMISSIONING STATEMENT	
Intervention	Primary Hip Arthroplasty
Date Issued	
Dates of Review	
Pan-London Commissioning Recommendation	<p>This policy relates to hip arthroplasty only, as described in detail below.</p> <p>The following exclusions apply:</p> <ul style="list-style-type: none"> • Children. • Patients with confirmed or suspected malignancy, acute trauma, suspected infection and inflammatory arthropathy. • Patients with underlying disease (such as haemophilia or sickle cell) related hip disease. • Young adults with abnormal hip anatomy. <p>In ordinary circumstances*, funding for total hip replacement surgery is available for patients who meet ALL of the following criteria:</p> <p>The patient has 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</p> <p>AND</p> <p>The symptoms are refractory to non-surgical treatment (including analgesia, exercise, physiotherapy and weight loss, where appropriate)</p> <p>AND</p> <p>The patient’s symptoms are consistent with degenerative disease, and prior to arthroplasty there is radiological confirmation of this</p> <p>AND</p> <p>The patient has been engaged in shared decision making</p>

	<p>regarding treatment options.</p> <p>*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</p>	
Prepared By	London Choosing Wisely, Commissioned by NHSE	
Approved By	Date Approved	Notes
Primary Hip Arthroplasty Task & Finish Group, London Choosing Wisely	16/05/18	
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 hip 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

Osteoarthritis is the most common form 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.

Hip replacements aim to reduce pain, improve function and improve quality of life. They have been performed in the UK since the 1960s and approximately 160,000 total hip and knee replacements (approximately 50% of each) are performed in England and Wales annually.

As with all surgical procedures, there is a potential risk of harm from undergoing total hip arthroplasty. In the absence of specific national guidance, clinical decision-making is likely to be guided by personal experience and local practice, as well as patient choice and expectations.

Therefore, it is important to review up to date existing guidance and evidence relating to THR in order to inform later development of policy. Ultimately, this can help to ensure the right care can be provided for the right patient at the right time.

2. Key Definitions

Hip arthroplasty, otherwise known as hip replacement, describes the surgical replacement of the hip joint.

3. Aims & Objectives

- To reduce unwarranted variation in access to primary hip arthroplasty
- To ensure that primary hip arthroplasty is commissioned where there is acceptable evidence of clinical benefit and cost-effectiveness
- To promote the cost-effective use of healthcare resources

4. Criteria for commissioning (including exclusions)

Exclusions

The following exclusions apply:

- Children.
- Patients with confirmed or suspected malignancy, acute trauma, suspected infection and inflammatory arthropathy.

- Patients with underlying disease (such as haemophilia or sickle cell) related hip disease.
- Young adults with abnormal hip anatomy.

Policy

In ordinary circumstances*, funding for total hip replacement surgery is available for patients who meet ALL of the following criteria:

The patient has 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 (including analgesia, 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.

Osteoarthritis (OA) is the most common form of arthritis in the United Kingdom and the hip is a commonly affected site. Important consequences are pain, limitation of daily activities and reduction in quality of life.

It is important to recognise that OA may not be progressive and most patients may be successfully managed with non-surgical measures in primary or intermediate care.

Patients should be encouraged to engage in conservative treatments, which include education and lifestyle modifications, exercise and weight loss (where appropriate). Primary care practitioners should encourage smoking cessation and weight reduction, offering referral to appropriate services, where required. An earlier referral to secondary care for those with suspected end stage hip OA may be appropriate as conservative measures are unlikely to improve the patient's pain or quality of life.

Primary care practitioners should ensure that the patient has meaningfully engaged with conservative management, where appropriate, prior to referral for hip replacement surgery. These lifestyle changes have the potential to improve general health and wellbeing, as well as intervention success rates and enhance recovery times from surgery.

Clinical judgement should be used to assess severity of symptoms and consideration of referral for surgical opinion, as there are currently no scoring systems validated for clinical use. In conjunction with this, patients should be given the opportunity to engage with shared decision making prior to referral for surgery. This may occur in primary care or interface services, such as MCATS, where applicable. In line with best practice, this should involve the use of a decision-making aid, such as "Arthritis: should I have hip

replacement surgery?”

(<https://www.healthwise.net/cochrane/decisionaid/Content/StdDocument.aspx?DOCHWI D=uh1515>) or “What are my options for managing hip and knee osteoarthritis?” (<http://musculoskeletal.cochrane.org/sites/musculoskeletal.cochrane.org/files/public/uploads/What%20are%20my%20options%20for%20managing%20hip%20or%20knee%20osteoarthritis%20%20June%202015.pdf>).

At referral, primary care practitioners must ensure that they supply all the relevant information to secondary care, particularly concerning conservative treatments. Therefore, whilst primary care is not directly responsible for requesting prior approval for primary hip arthroplasty, they must be aware of the detailed clinical criteria relating to this commissioning policy before referring the patient to secondary care for surgical treatment.

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 drafting this commissioning policy, the Task and Finish Group considered the evidence presented, the current position of CCGs within London, and their own clinical experience. Furthermore, they accounted for the variation in service provision for hip osteoarthritis across London.

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 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. Whilst the group highlighted the importance of reducing BMI (where raised) as part of health optimisation prior to hip arthroplasty, it was agreed that there is no evidence to support a specific cutoff of BMI to include in the pan-London policy.

The Task & Finish Group noted that there are circumstances in which hip arthroplasty for hip osteoarthritis is clinically indicated and these circumstances are listed in this policy.

Inclusion/Exclusion: The Task and Finish Group concluded that children, patients with malignancy or suspected malignancy, acute trauma, suspected infection, inflammatory arthropathy and those with underlying disease such as haemophilia or sickle cell related hip disease or abnormal anatomy and young adults with abnormal hip anatomy are excluded from this policy.

Criteria for commissioning: The Task and Finish Group noted the difficulty in prescribing specific, evidence based criteria for when a patient should undergo intervention. There will always be a subjective definition of *moderate* or *severe* pain and so clinicians will

need to apply reason to this judgement, understanding that it is the responsibility of all clinicians to use resources appropriately.

7. Adherence to NICE Guidelines

The Task & Finish group noted that there were NICE guidelines with a robust global evidence base underpinning them. Therefore, the NICE guidelines were compared commissioning guide from the Royal College of Surgeons / British Orthopaedic Association to form the final policy:

- NICE guidance (*Osteoarthritis: care and management, February 2014*)
- Royal College of Surgeons / British Orthopaedic Association (*Commissioning guide: pain arising from the hip in adults, 2013*)

8. Codes for procedures

OPCS Codes (Procedure codes)	
W371	Primary total prosthetic replacement of hip joint using cement
W372	Conversion to total prosthetic replacement of hip joint using cement
W378	Other specified total prosthetic replacement of hip joint using cement
W379	Unspecified total prosthetic replacement of hip joint using cement
W381	Primary total prosthetic replacement of hip joint not using cement
W388	Other specified total prosthetic replacement of hip joint not using cement
W389	Unspecified total prosthetic replacement of hip joint not using cement
W391	Primary total prosthetic replacement of hip joint NEC
W398	Other specified other total prosthetic replacement of hip joint
W399	Unspecified other total prosthetic replacement of hip joint
W431	Primary total prosthetic replacement of joint using cement NEC
W438	Other specified total prosthetic replacement of other joint using cement
W439	Unspecified total prosthetic replacement of other joint using cement
W441	Primary total prosthetic replacement of joint not using cement NEC
W448	Other specified total prosthetic replacement of other joint not using cement
W449	Unspecified total prosthetic replacement of other joint not using cement
W451	Primary total prosthetic replacement of joint NEC
W458	Other specified other total prosthetic replacement of other joint
W459	Unspecified other total prosthetic replacement of other joint
W461	Primary prosthetic replacement of head of femur using cement
W469	Unspecified prosthetic replacement of head of femur using cement
W471	Primary prosthetic replacement of head of femur not using cement
W478	Other specified prosthetic replacement of head of femur not using cement
W479	Unspecified prosthetic replacement of head of femur not using cement
W481	Primary prosthetic replacement of head of femur NEC
W488	Other specified other prosthetic replacement of head of femur
W489	Unspecified other prosthetic replacement of head of femur
W521	Primary prosthetic replacement of articulation of bone using cement NEC
W528	Other specified prosthetic replacement of articulation of other bone using cement
W529	Unspecified prosthetic replacement of articulation of other bone using cement

W531	Primary prosthetic replacement of articulation of bone not using cement NEC
W538	Other specified prosthetic replacement of articulation of other bone not using cement
W539	Unspecified prosthetic replacement of articulation of other bone not using cement
W541	Primary prosthetic replacement of articulation of bone NEC
W548	Other specified other prosthetic replacement of articulation of other bone
W549	Unspecified other prosthetic replacement of articulation of other bone
W551	Primary prosthetic interposition arthroplasty of joint
W558	Other specified prosthetic interposition reconstruction of joint
W559	Unspecified prosthetic interposition reconstruction of joint
W562	Primary interposition arthroplasty of joint NEC
W568	Other specified other interposition reconstruction of joint
W569	Unspecified other interposition reconstruction of joint
W580	Conversion from previous resurfacing arthroplasty of joint
W581	Primary resurfacing arthroplasty of joint
W588	Other specified other reconstruction of joint
W589	Unspecified other reconstruction of joint
W931	Primary hybrid prosthetic replacement of hip joint using cemented acetabular component
W938	Other specified hybrid prosthetic replacement of hip joint using cemented acetabular component
W939	Unspecified hybrid prosthetic replacement of hip joint using cemented acetabular component
W941	Primary hybrid prosthetic replacement of hip joint using cemented femoral component
W948	Other specified hybrid prosthetic replacement of hip joint using cemented femoral component
W949	Unspecified hybrid prosthetic replacement of hip joint using cemented femoral component
W951	Primary hybrid prosthetic replacement of hip joint using cement NEC
W958	Other specified hybrid prosthetic replacement of hip joint using cement
W959	Unspecified hybrid prosthetic replacement of hip joint using cement
Z843	Hip joint
With the following ICD-10 diagnosis code(s):	
M16.0	Osteoarthritis (arthrosis of the hip)
M16.1	Other primary osteoarthritis
M16.2	Osteoarthritis resulting from dysplasia, bilateral
M16.3	Other dysplastic osteoarthritis
M16.4	Post traumatic osteoarthritis, bilateral
M16.5	Other post-traumatic osteoarthritis
M16.6	Other secondary osteoarthritis, bilateral
M16.7	Other secondary osteoarthritis
M16.9	Osteoarthritis, unspecified

Equality & Equity Statement

Standard text: 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.

Glossary

n/a

Appendix 1 – Full Evidence Review

London Choosing Wisely

Evidence Review Summary: Hip Arthroplasty

Version	Date	Notes
Draft for T&F 1	03/05/18	Initial draft
Revised version post T&F 1	14/05/2018	Updated codes
Amended	31/07/2018	To include details of search terms from search strategy document, following LCW steering group meeting of 30/07/18
Amended final version	20/08/18	Text added to methods section following discussion at July Steering group meeting.

1.0 Introduction

<p>What?</p>	<p>This review will focus on hip arthroplasty. The aim of this review is to present the available evidence to the task and finish group in order to support informed decision making regarding the commissioning policy.</p> <p>Specifically covered by this review is total hip arthroplasty in the management of osteoarthritis. Total hip arthroplasty (THA), also known as total hip replacement (THR), is an elective surgery performed in patients with severe end-stage arthritis of the hip. The most common underlying diagnosis, in more than 90%, is osteoarthritis (OA) of the hip.¹</p> <p>Patients with confirmed or suspected malignancy, acute trauma, and suspected infection should be referred urgently or by emergency via alternative pathways. Those with an inflammatory arthropathy and paediatric patients should also be referred under alternative pathways.</p> <p>A list of OPCS codes relevant to this evidence review (and ultimately the commissioning policy) are included in Appendix 3. This list is not exhaustive and may be subject to alteration at CCG level during implementation of the policy. Issues around coding of diagnoses and procedures can affect adherence to commissioning policies but this does not negate the need for the policy to state the ICD-10 and OPCS codes included.</p>
<p>Who for?</p>	<p>The review applies to adults with osteoarthritis receiving an elective primary total hip arthroplasty.</p>
<p>Why?</p>	<p>Osteoarthritis is the most common form 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</p> <p>Hip replacements aim to reduce pain, improve function and improve quality of life. They have been performed in the UK since the 1960s and there were approximately 101,651 hip replacements performed in 2016, as evidenced in the National Joint Registry.³</p> <p>As with all surgical procedures, there is a potential risk of harm from undergoing total hip arthroplasty. In the absence of specific national guidance, clinical decision-making is likely to be guided by personal experience and local practice, as well as patient choice and expectations.</p> <p>Therefore, it is important to review up to date existing guidance and evidence relating to THR in order to inform later development of policy. Ultimately, this can help to ensure the right care can be provided for the right patient at the right time.</p>
<p>Why an issue?</p>	<p>THR is the second most common joint replacement surgery after knee replacement surgery.¹ It has a major impact on both the national economy and patients themselves. According to a study in 2015, by 2035, the demand for total hip replacement is estimated to grow from 75,366 in 2012 to 96,000 by 2035.⁴</p> <p>As there are policy discrepancies, there is potential for patients not to be receiving equal access to treatments across London.</p>

	See Section 2 for a detailed table of current CCG policies relating to THR.
Who else does what?	<p>Some London CCGs have commissioning policies relating to THR:</p> <ul style="list-style-type: none"> - BHR (Barking, Havering and Redbridge) - SWL (Croydon, Kingston, Merton, Richmond, Sutton, Wandsworth) - NWL (Brent, Central, Ealing, Hammersmith & Fulham, Harrow, Hillingdon, Hounslow, West London) <p>The extant policies in these CCGs currently vary in their inclusion criteria.</p> <p>Other CCGs do not have any commissioning policy relating to THR:</p> <ul style="list-style-type: none"> - 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 will be 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/British Orthopaedic Association commissioning guide: pain arising from the hip in adults.
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.

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

All terms related to "hip arthroplasty", "hip replacement", "THR", "total hip replacement", "hip prosthesis", "primary hip replacement", "degenerative disease", "osteoarthritis"

The literature review was then 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
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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 databases were searched in relation to the above search strategy for hip arthroplasty:

- Guidance - NICE, BOA, Royal College of Surgeons
- Cochrane Library
- PubMed/Medline

The evidence review has focused on treatment for patients with osteoarthritis by hip arthroplasty. Where possible, evidence from systematic reviews and meta-analyses has been included.

Relevant current London CCG policies on hip arthroplasty were also gathered for this review.

2.2 Inclusion / Exclusion Criteria for evidence review:

Inclusion:

Unlimited date range
Evidence relating to adults and children included

Exclusion:

Non English Language papers

3.0 Summary of findings

As mentioned previously, the highest levels of evidence have been used to inform the review where possible. Additional detail regarding the evidence referenced can be found in the following section.

	Summary of grade of evidence used					Other	
	Level 1	Level 2	Level 3	Level 4	Level 5	National guidelines	Other CCG Policies
Total hip arthroplasty	✓		✓			✓	✓

There are detailed NICE guidelines for the management of patients with OA in any joint.³ 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.

The NICE guidance³ and RCS/BOA Commissioning guide⁵ are broadly in agreement with regards to referral for total hip replacement for those with hip osteoarthritis. Both refer to a period of conservative treatment, prior to referral to secondary care for surgical treatment. The RCS/BOA Commissioning guide refers to a period of up to 12 weeks of conservative treatment⁵ whereas NICE does not define the duration for conservative treatment.³ There are subtle differences in wording with regards to the criteria, NICE refers to “significantly impacts quality of life” and “when joint symptoms are... refractory to non-surgical treatment” whereas the commissioning guide refers to “when there is restriction of function” and when “quality of life” is significantly compromised”. The RCS/BOA guidance furthermore refers to radiological findings, whereas NICE does not.^{3,5} Both sets of guidance are broad in their definition and open to a degree of individual interpretation.

This variation is reflected in the policies in place across the London CCGs (Section 2). Whilst the policies broadly encompass quality of life (QoL), function and pain severity, there are differences in wording and definitions of severity in pain and function particularly. The SWL policy also includes some reference to hip scoring and BMI thresholds, whereas this is not explicitly included in either sets of guidance. Although, weight optimisation is recommended, no thresholds or targets are set in either sets of guidance. Symptoms of hip 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 pain and functional status have been described in section 4. However, none have been recommended for use in deciding timing for joint surgery by national guidelines.

The evidence relating to the specific time period for conservative treatment for hip osteoarthritis prior to hip replacement is inconclusive. There is a lack of high quality randomised controlled trials assessing the optimal duration of conservative treatment. Although, there is a Cochrane review planned and this may shed some further light on this.¹

4.0 More detailed findings

1. Collate relevant guidance, as far as it is available, from the following named sources:

- **NICE guidelines – Osteoarthritis (OA): care and management**
- **Royal College of Surgeons (RCS)/British Orthopaedic Association (BOA) commissioning guide: pain arising from the hip in adults.**

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

NICE: OA care and management³	RCS/BOA Commissioning guide: pain arising from the hip in adults⁵
<p><u>Introduction</u></p> <ul style="list-style-type: none"> • OA is the most common form of arthritis and one of the leading causes of pain and disability worldwide. The most commonly affected peripheral joint are the knees, hips and small hand joints. • Pain, reduced function and effects on a person’s ability to carry out their day-to-day activities can be important consequences of OA. • Complex biopsychosocial issue, related in part to a person’s expectations and self-efficacy, and is associated with changes in mood, sleep and coping abilities. • Often a poor link between changes visible on an X-ray and symptoms of OA: minimal changes can be associated with a lot of pain, or modest structural changes to joints can occur with minimal accompanying symptoms. • OA is not caused by ageing and does not necessarily deteriorate. 	<p><u>Introduction</u></p> <ul style="list-style-type: none"> • OA of the hip describes a clinical syndrome of joint pain accompanied by varying degrees of function limitation and reduced quality of life. • OA may not be progressive and most patients will not need surgery, with their symptoms adequately controlled by non-surgical measures. <ul style="list-style-type: none"> ◦ Symptoms progress in 15% of patients within 3 years and 28% of patients within 6 years. • The current hip scoring tools are not appropriate for use in prioritization or deciding on referral thresholds. • Total Hip Replacement (THR) is cost effective, with a cost per quality adjusted-life year of £1372. • The outcome of THR is better when well-tried implants are used, particularly when performed by experienced surgeons (e.g., those doing >70/year).
<p><u>Assessment</u></p> <ul style="list-style-type: none"> • Diagnose OA clinically without investigations if: <ul style="list-style-type: none"> ◦ >45 and ◦ Activity related joint pain and ◦ Either no/<30 minutes morning joint-related stiffness 	<p><u>Assessment of hip pain</u></p> <ul style="list-style-type: none"> • History/examination +/- AP radiograph
<p><u>Non-surgical management</u></p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ◦ 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 	<p><u>Management of hip pain</u></p> <ul style="list-style-type: none"> • Management varied according to severity of pain <ul style="list-style-type: none"> ◦ Mild: verbal/written information, weight loss if overweight or obese, smoking cessation at the earliest possible stage, local muscle strengthening and general aerobic exercise, simple analgesia and NSAIDs, assess for aids and devices, supervised and evidence based physical therapies. Furthermore, holistic programmes such as “ESCAPE PAIN” have a growing evidence base and should be utilized. Shared decision making tools should be used for these interventions. ◦ Moderate: add NSAIDs/stronger analgesics, for very elderly/unsuitable for surgery – consider image guided intra-articular steroids. ◦ Refer to intermediate/secondary care <ul style="list-style-type: none"> - Young adults (<40) with persistent hip pain which affects activities of daily living, work or leisure.

	<ul style="list-style-type: none"> - All adults with painful irritable and stiff hip interfering with sleep, activities of daily living, work or leisure not controlled with measures above - Referral should be independent of the radiographic grade of arthritis. - Refer patients before there is prolonged and established functional limitation and severe pain - Age, gender, smoking, obesity and co-morbidity should not be barriers to referral - Ensure that patients with significant co-morbidities [systemic or local] have appropriate investigations and treatment to optimise their condition before referral. - Patients who are considered not suitable for surgery by one of the surgical team should be referred for a complex care package o Referral to secondary care if persistent pain and disability has not responded to up to 12 weeks of evidence based non-surgical treatments, this time to include manual therapy (physiotherapy) received in primary care. • Secondary care o All patients must have engaged in shared decision making about alternatives. o The NHS Hip Arthroplasty Surgery Decision Making Tool can be used when arthroplasty is being considered. o Decision not to undergo surgery does not exclude them from having surgery in the future.
<p><u>Referral for joint surgery</u></p> <ul style="list-style-type: none"> • Base decisions on referral thresholds on discussions between patient representatives, referring clinicians and surgeons, rather than using scoring tools for prioritization. • 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. 	<p><u>THR Criteria</u></p> <ul style="list-style-type: none"> • After appropriate diagnosis, consider THR when: <ul style="list-style-type: none"> o Pain is inadequately controlled by medication o There is restriction of function o The QoL is significantly compromised o There is narrowing of the joint space on radiograph
	<p>OPCS4 Codes for primary total hip replacement with or without cement: W3712, W371 , W379 , W381 , W389, W391, W399, W931, W939, W941, W949, W951, W959</p>

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

North East London (NEL)	South West London (SWL)	North West London (NWL)
BHR		
Barking Havering Redbridge	Croydon Kingston Merton Richmond Sutton Wandsworth	Brent Central Ealing Hammersmith & Fulham Harrow Hillingdon Hounslow West London
Latest policy 2018	Latest policy 2017-18	Latest policy 2017-18
<p>Joint replacement surgery (hip of knee replacement)</p> <p>With prior approval, BHR CCGs will fund joint surgery where all of the following criteria are met:</p> <ul style="list-style-type: none"> 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 <p>AND</p>	<p>SWL CCGs fund this procedure when ALL of the following criteria (1 - 3) are met:</p> <p>1. Patient is</p> <p>a) Suffering from intense or severe persistent pain with moderate or severe functional impairment as measured by the classification system</p> <p>OR</p> <p>b) In immediate danger of losing their independence due to severe persistent pain and the joint replacement would prevent this</p> <p>OR</p> <p>c) At risk of destruction of their joint of such severity that delaying surgical correction would increase the technical difficulties of the procedure</p> <p>OR</p> <p>d) Diagnosed as suffering from end-stage osteoarthritis confirmed by appropriate radiological investigation*.</p> <p>AND</p> <p>2. Patient engaged with conservative therapy for at least 6 months and these failed</p> <p>NB: Patients with end-stage osteoarthritis should proceed to surgery without attempting conservative treatments.</p> <p>AND</p> <p>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</p> <p>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.</p> <p>Please note: SWL CCGs do not routinely fund specialist custom hip prosthesis.</p> <p>Primary care advice: Although primary care is not directly responsible for requesting prior approval, primary care needs to be</p>	<p>Referral criteria for Total Hip Replacements (THR) should be based on the level of pain and functional impairment suffered by the patient.</p> <p>NHS NWL CCGs will fund THR for patients who fulfil the following criteria:</p> <p>1. Patient complains of severe joint pain AND functional limitation, despite the use of non- surgical treatments such as adequate doses of NSAID analgesia, weight control treatments and physical therapies.</p> <p>OR</p> <p>2. Patient complains of mild to moderate joint pain AND has severe functional limitation, despite the use of non-surgical treatments such as adequate doses of NSAID analgesia, weight control treatments and physical therapies.</p>

<ul style="list-style-type: none"> The symptoms are refractory to non-surgical treatment. <p>AND</p> <ul style="list-style-type: none"> There is evidence that conservative means have failed to alleviate pain and disability <p>AND</p> <ul style="list-style-type: none"> The prosthesis used are standard 	<p>aware of the detailed clinical criteria relating to this commissioning policy before referring the patient to the appropriate service. Primary care must also ensure that they supply the all the relevant information to MSK or T&O services, particularly concerning conservative treatments. Conservative treatments should be documented in the patient's primary care record, or via Musculoskeletal Services' letters, or other clinic letters and provided with any referrals to secondary care.</p> <p>Conservative treatments Primary care should ensure that ALL of the following conservative measures are attempted over a period of 6 months prior to referral for hip replacement surgery:</p> <p>Weight reduction where appropriate, particularly when the patient has a BMI greater than 35.</p> <p>Education and self-management such as elimination of damaging influence on hips, activity modification (avoid impact and excessive exercise), good shock-absorbing shoes.</p> <p>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 osteoarthritis).</p> <p>Management with medication including where appropriate oral/topical nonsteroidal anti-inflammatory drugs [NSAIDS] and paracetamol based analgesics (COX-2 Inhibitor of NSAIDS). Opioid analgesics can be used effectively if paracetamol or NSAIDS are ineffective or poorly tolerated.</p> <p>Oxford score The Oxford Hip Score may be used in primary care to guide clinicians whether to make a referral to specialist or not. Patients with a score of 20 or more could be considered for referral. However, it is not a validated tool and should not be used to make the final decision on hip replacement.</p>	<p>Note: Patients who smoke should have attempted to stop smoking 8 to 12 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.</p> <p>Prior to referral for THR, non-surgical treatments, should be offered for all patients and the management of any underlying medical conditions should be optimised. This should include communication of the risks and benefits of all treatment options, taking into account the individual patient's comorbidities. Where appropriate, patients should be encouraged to reduce their BMI to <30 prior to surgery. Referral decisions should not be made on the basis of hip radiography as this is thought to be unreliable.</p>
<p>Comparison with national guidance</p>		
<ul style="list-style-type: none"> This policy is broadly in keeping with national guidance included in this review. 	<ul style="list-style-type: none"> The commissioning guidance suggests referral to secondary care after a period of 12 weeks of evidence based non-surgical treatments. Neither the NICE guidelines, nor the Commissioning guidance specify severity of pain or function specifically. Furthermore, NICE recommends referral for consideration of joint surgery before there is prolonged and established functional limitation and severe pain. Neither the commissioning guide, nor NICE mention a BMI threshold when discussing weight management. Instead, weight management is recommended for those who are "overweight" and "obese", although these should not be barriers to referral. Scoring systems, such as the Oxford Hip Score, are not mentioned in either of the guidance documents reviewed. NICE recommends basing referral decisions on discussions between patient representatives, clinicians and surgeons rather than using scoring tools for prioritization. 	<ul style="list-style-type: none"> This policy is broadly in keeping with national guidance included in this review. The guidance does not specify severity of pain or function specifically.
<p>The highlighted text above shows areas of discrepancy between the guidance the CCG policy.</p>		

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.³ The guidance suggests that patients should be referred when they are “refractory” to non-surgical treatments, however it does not explicitly define the time period after which a patient will be considered refractory. The Commissioning Guide, on the other hand, recommends referral to secondary care after 12 weeks of primary/intermediate care intervention of conservative care, including physiotherapy. However, it does not explicitly recommend surgery after 12 weeks, although this may be the inference with a referral to secondary care.

A 2009 systematic review 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.⁶ The study included 15 RCTs and included 788 patients for hip arthroplasty. The review found strong evidence that pain scores did not deteriorate in patients waiting less than six months for THR. The results over the longer waiting times (>6 months) indicated that pain might increase in people with OA but were inconclusive. The study was limited by the small number of high quality studies for inclusion and inconsistency of results. The study is also possibly confounded by self-reported measures.

A 2017 retrospective cohort study of 105 patients demonstrated greater improvement in those with severely impaired preoperative function than those with less severe pre-operative function following THR.⁷ However, it also showed that patients who underwent joint arthroplasty with severe pre-operative functional impairment continued to have worse outcomes than patients with less severe preoperative function in the mid and longterm. The authors conclude that *“Once a patient's condition has deteriorated to a certain level of functional impairment, further delay of surgical intervention is not in the patient's best interest... Prolonged conservative treatment might end up being detrimental to patients with severely impaired preoperative function”*. It is important to bear in mind that the study had a small sample size and provides level 3 evidence.

A cost effectiveness analysis evaluated the costs and health benefits of timely primary THR for functionally independent adult patients with end-stage osteoarthritis (OA) compared to non-surgical therapy followed by THR after progression to functional dependence (delayed THR), and non-surgical therapy alone (Medical Therapy), from a German Social Health Insurance (SHI) perspective.⁸ It found that delaying surgery had a two-fold advantage of reducing the risk of revision occurrence, and increasing the expected health improvement, since THR produces larger quality of life gains in patients with more severe disease. However, it imposed quality of life losses on patients’ health during the delay, and inferior quality of life outcomes post-operatively relative to timely surgery. It concluded that despite recent evidence on productivity benefits for hip and knee replacement, that THR has benefits beyond those realised in the healthcare system.

Another cost effectiveness analysis, for the Italian National Health Service, also concluded that THR is cost-effective and in general, should be offered without delay to functionally independent patients with severe OA.⁹ Furthermore, it demonstrated that health related QoL benefits foregone with delayed THR were worth more than the costs saved and that delayed THR would not be cost-effective, taking into account typical levels of health related QoL of patients undergoing such surgery. The study methodology was complex and conclusions reflect a number of assumptions specific to the Italian Health service that may not fully apply in other settings.

A population based mail and telephone survey assessing the need for hip and knee arthroplasty through the role of clinical severity and patients' preferences found that among those with severe arthritis, no more than 15% were definitely willing to undergo arthroplasty.¹⁰ This emphasises the importance of considering the patient's preferences as well as the surgical indications when evaluating the need and appropriateness for surgery.

There is an unpublished Cochrane review from 2013: total hip replacement surgery vs conservative care for hip OA and other non traumatic diseases.¹ This may cover the optimal duration of conservative management for hip osteoarthritis.

Overall, the available evidence suggests that the timing of primary hip arthroplasty may be of importance in optimising postoperative outcomes. One systematic review from 2009 suggests that pain does not worsen in patients waiting less than six months for THR. However, there is a lack of high quality randomised controlled studies assessing the optimum timing of joint replacement.

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

SWL Pain Classification System¹¹		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 System¹¹		NWL Function Classification System¹¹	
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

Oxford Hip Score¹²

<p>How would you describe the pain you usually have in your hip?</p> <p>4) None 3) Very mild 2) Mild 1) Moderate 0) Severe</p>	<p>Have you been limping when walking because of your hip?</p> <p>4) Rarely/never 3) Sometimes or just at first 2) Often, not just at first 1) Most of the time 0) All of the time</p>	<p>Have you been able to put on a pair of socks, stockings or tights?</p> <p>4) Yes, easily 3) With little difficulty 2) With moderate difficulty 1) With extreme difficulty 0) No, impossible</p>	<p>Have you had any trouble with washing and drying yourself (all over) because of your hip?</p> <p>4) No trouble at all 3) Very little trouble 2) Moderate trouble 1) Extreme difficulty 0) Impossible to do</p>
<p>Have you been troubled by pain from your hip in bed at night?</p> <p>4) No nights 3) Only 1 or 2 nights 2) Some nights 1) Most nights 0) Every night</p>	<p>5. For how long have you been able to walk before the pain in your hip becomes severe (with or without a walking aid)?</p> <p>4) No pain for 30 minutes or more. 3) 16 to 30 minutes 2) 5 to 15 minutes 1) Around the house only 0) Not at all</p>	<p>After a meal (sat at a table), how painful has it been for you to stand up from a chair because of your hip?</p> <p>4) Not at all painful 3) Slightly painful 2) Moderately painful 1) Very painful 0) Unbearable</p>	<p>Could you do the household shopping on your own?</p> <p>4) Yes, easily 3) With little difficulty 2) With moderate difficulty 1) With extreme difficulty 0) No, impossible</p>
<p>Have you had any sudden, severe pain-' shooting ', 'stabbing', or 'spasms' from your affected hip?</p> <p>4) No days 3) Only 1 or 2 days 2) Some days 1) Most days 0) Every day</p>	<p>Have you been able to climb a flight of stairs?</p> <p>4) Yes, easily 3) With little difficulty 2) With moderate difficulty 1) With extreme difficulty 0) No, impossible</p>	<p>Have you had any trouble getting in and out of a car or using public transportation because of your hip?</p> <p>4) No trouble at all 3) Very little trouble 2) Moderate trouble 1) Extremely difficult 0) Impossible to do</p>	<p>How much has pain from your hip interfered with your usual work, including housework?</p> <p>4) Not at all 3) A little bit 2) Moderately 1) Greatly 0) Totally</p>

This gives a possible score of 48, with 0 being the worst. There is some evidence that those with an Oxford Hip score below 20 should be referred for joint replacement. (<http://www.orthopaedicscore.com/scorepages/How%20bad.pdf>)

Harris Hip score¹²

This score evaluates various hip disabilities and methods of treatment in an adult population. It covers pain, function, absence of deformity, and range of motion. There are 10 items and the score has a maximum of 100 points covering pain (0-44 points), function (0-47 points), absence of deformity (4 points) and range of motion (5 points).

Hip disability and osteoarthritis outcome score (HOOS)¹²

Questionnaire assessing patient's opinion about their hip and associated problems to evaluate symptoms and functional limitations related to the hip during a therapeutic process. The HOOS is meant to be used over short and long-term intervals to assess changes induced by treatment (medication, physical therapy, operation). The score is out of 100, comprising of 5 subscales: pain, symptoms, activities of daily living, function in sport and recreation and hip related quality of life. Scores of 0-4 are given to each domain. Total score is 100, with 0 indicating extreme symptoms and 100 indicating no symptoms. The total HOOS is calculated by:

$$100 - [(patient's score of the subscale \times 100)/(total score of the subscale)]$$

Western Ontario and McMaster Universities Arthritis Index (WOMAC)¹²

Widely used in the evaluation of hip and knee OA. Consists of 24 divided into 3 sub sections: pain, stiffness and physical function. Questions are scored on a scale of 0-4. There is a possible score range of 0-20 for pain, 0-8 for stiffness and 0-68 for physical function. Higher score indicate worse pain, stiffness and functional limitations.

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.

Reference	Evidence level	Source	Citation or Title	Content
1	1	Cochrane Database of Systematic Reviews	Singh JA, Kundukulam JA, Kalore NV. Total hip replacement surgery versus conservative care for hip osteoarthritis and other non-traumatic disease. <i>Cochrane Database of Systematic Reviews</i> 2013;9:CD010731	
2	Other	NICE	Osteoarthritis: care and management 2014	
3	Other	National Joint Registry	14 th 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	
4	Other	Osteoarthritis and Cartilage	Culliford D. <i>et al.</i> Future projections of total hip and knee arthroplasty in the UK: results from the UK clinical practice research datalink. <i>Osteoarthritis and Cartilage</i> 2015;23(4):594-600	<p>OBJECTIVE:</p> <p>To estimate the future rate of primary total hip (THR) or knee (TKR) replacement in the UK to 2035 allowing for changes in population demographics and obesity.</p> <p>DESIGN:</p> <p>Using age/gender/body mass index (BMI)-specific incidence rates from a population-based cohort study of 50,000 THR and 45,609 TKR patients from the UK Clinical Practice Research Datalink (CPRD) between 1991 and 2010, we projected future numbers of THR and TKR using two models: a static, estimated rate from 2010 applied to population growth forecasts to 2035, and a log-linear rate extrapolation over the same period. Both scenarios used population forecast data from the UK Office for National Statistics (ONS).</p> <p>RESULTS:</p>

				<p>Assuming rates of THR and TKR for 2010, and given projected population changes in age, gender and BMI, the number of THRs and TKRs performed in the UK in 2035 is estimated to be, respectively: 95,877 and 118,666. By comparison, an exponential extrapolation of historical rates using a log-linear model produces much higher estimates of THR and TKR counts in 2035 at 439,097 and 1,219,362 respectively. Projected counts were higher for women than men. Assuming a changing (rather than fixed) future BMI distribution increases TKRs by 2035 but not THRs.</p> <p><i>CONCLUSIONS:</i></p> <p>Using historical rates and population forecasts we have projected the number of THR/TKR operations in the UK up to 2035. This study will inform policymakers requiring estimates of future demand for surgery. Incorporating future forecasts for BMI into projections of joint replacement may be more relevant for TKR rather than THR.</p>
5	Other	Royal College of Surgeons/British Orthopaedic Association	Commissioning guide: pain arising from the hip in adults 2017	
6	1	Osteoarthritis and Cartilage	<p>Hoogboom TJ <i>et al.</i> The impact of waiting for total joint replacement on pain and functional status: a systematic review. <i>Osteoarthritis and Cartilage</i> 2009;17:1420-1427 https://www.oarsijournal.com/article/S1063-4584(09)00144-7/pdf</p>	<p>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.</p> <p>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.</p> <p>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 mean 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.</p> <p>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.</p>
7	3	The Journal of Arthroplasty	Lavernia CJ <i>et al.</i> Prolonged	Background

			<p>conservative management in total joint arthroplasty: harming the patient? The Journal of Arthroplasty 2017;32(9):S81-5 https://ac.els-cdn.com/S088354031730270X/1-s2.0-S088354031730270X-main.pdf?_tid=6382ba85-a6c3-47a1-9397-ffc8f8a2d936&acdnat=1524760197_0a8e82093b96e5f73df04e2be52b5e69</p>	<p>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.</p> <p>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).</p> <p>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.</p> <p>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.</p>
8	Other	Orthopaedic Review	<p>Mujica-Mota RE <i>et al.</i> Cost effectiveness of timely versus delayed primary total hip replacement in Germany: A social health insurance perspective. <i>Orthopaedic Reviews</i> 2017;9(3):7161 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5641833/</p>	<p>Without clinical guideline on the optimal timing for primary total hip replacement (THR), patients often receive the operation with delay. Delaying THR may negatively affect long-term health-related quality of life, but its economic effects are unclear. We evaluated the costs and health benefits of timely primary THR for functionally independent adult patients with end-stage osteoarthritis (OA) compared to non-surgical therapy followed by THR after progression to functional dependence (delayed THR), and non-surgical therapy alone (Medical Therapy), from a German Social Health Insurance (SHI) perspective. Data from hip arthroplasty registers and a systematic review of the published literature were used to populate a tunnel-state modified Markov lifetime model of OA treatment in Germany. A 5% annual discount rate was applied to costs (2013 prices) and health outcomes (Quality Adjusted Life Years, QALY). The expected future average cost of timely THR, delayed THR and medical therapy in women at age 55 were €27,474, €27,083 and €28,263, and QALYs were 20.7, 16.7, and 10.3, respectively. QALY differences were entirely due to health-related quality of life differences. The discounted cost per QALY gained by timely over delayed (median delay of 11 years) THR was €1270 and €1338 in women treated at age 55 and age 65, respectively, and slightly higher than this for men. Timely THR is cost-effective, generating large quality of life benefits for patients at low additional cost to the SHI. With declining healthcare budgets, research is needed to identify the characteristics of those able to benefit the most from timely THR.</p>
9	Other	Value in Health Journal	<p>Mota REMM. Cost-effectiveness analysis of early versus late total hip replacement in Italy. <i>Value in Health</i> 2013;16:2:267-279 https://www.valueinhealthjournal.com/</p>	<p>Objective To assess the cost-effectiveness of early primary total hip replacement (THR) for functionally independent older adult patients with osteoarthritis (OA) versus 1) nonsurgical therapy followed by THR once the patient has progressed to a functionally dependent state ("delayed THR") and 2) nonsurgical therapy alone ("medical therapy"), from the Italian National Health Service perspective.</p> <p>Methods</p>

			ournal.com/article/S1098-3015(12)04201-5/fulltext?returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS1098301512042015%3Fshowall%3Dtrue	<p>Individual patient data and evidence from published literature on disease progression, economic costs and THR outcomes in OA, including utilities, perioperative mortality rates, prosthesis survival, and costs of prostheses, THR, rehabilitation, follow-up, revision, and nonsurgical management, combined with population life tables, were synthesized in a Markov model of OA. The model represents the lifetime experience of a patient cohort following their treatment choice, discounting costs and benefits (quality-adjusted life-years) at 3% annually.</p> <p>Results</p> <p>At age 65 years, the incremental cost per quality-adjusted life-year of THR over delayed THR was €987 in men and €466 in women; the figures for delayed THR versus medical therapy were €463 and €82, respectively. Among 80-year-olds, early THR is (extended) dominant. With gradual utility loss after primary THR, delaying surgery may be more appealing in women than in men in their 50s, because longer female life expectancy implies longer latter periods of low health-related quality of life (HRQOL) with early THR.</p> <p>Conclusions</p> <p>THR is cost-effective. Patients' HRQOL benefits forgone with delayed THR are worth more than the costs it saves to the Italian National Health Service. This analysis might help to explain women's consistently lower HRQOL by the time of primary operation.</p>
10	Other	Medical Care	<p>Hawker GA <i>et al.</i> Determining the need for hip and knee arthroplasty: the role of clinical severity and patients' preferences. <i>Medical Care</i> 2001;39(3):206-16</p>	<p>BACKGROUND: Area variation in the use of surgical interventions such as arthroplasty is viewed as concerning and inappropriate.</p> <p>OBJECTIVES: To determine whether area arthroplasty rates reflect patient-related demand factors, we estimated the need for and the willingness to undergo arthroplasty in a high- and a low-use area of Ontario, Canada.</p> <p>RESEARCH DESIGN: Population-based mail and telephone survey.</p> <p>SUBJECTS: All adults aged > or =55 years in a high (n = 21,925) and low (n = 26,293) arthroplasty use area.</p> <p>MEASURES: We determined arthritis severity and comorbidity with questionnaires, established the presence of arthritis with examination and radiographs, and evaluated willingness to have arthroplasty with interviews. Potential arthroplasty need was defined as severe arthritis, no absolute contraindication for surgery, and evidence of arthritis on examination and radiographs. Estimates of need were then adjusted for patients' willingness to undergo arthroplasty.</p> <p>RESULTS: Response rates were 72.0% for questionnaires and interviews. The potential need for arthroplasty was 36.3/1,000 respondents in the high-rate area compared with 28.5/1,000 in the low-rate area (P <0.0001). Among individuals with potential need, only 14.9% in the high-rate area and 8.5% in the low-rate area were definitely willing to undergo arthroplasty (P = 0.03), yielding adjusted estimates of need of 5.4/1,000 and 2.4/1,000 in the high- and low-rate areas, respectively.</p> <p>CONCLUSIONS:</p>

				Demonstrable need and willingness were greater in the high-rate area, suggesting these factors explain in part the observed geographic rate variations for this procedure. Among those with severe arthritis, no more than 15% were definitely willing to undergo arthroplasty, emphasizing the importance of considering both patients' preferences and surgical indications when evaluating need and appropriateness of rates for surgery.
11	Other	Aetna Medicaid	https://www.aetnabetterhealth.com	
12	Other	Orthopaedic Score	http://www.orthopaedicscore.com/	

Appendix 2 – Current CCG Policies and new London Choosing Wisely 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 primary hip arthroplasty at the time of this review.

North East London (NEL)	South West London (SWL)	North West London (NWL)	London Choosing Wisely
BHR			
Barking Havering Redbridge	Croydon Kingston Merton Richmond Sutton Wandsworth	Brent Central Ealing Hammersmith & Fulham Harrow Hillingdon Hounslow West London	
Latest policy 2018	Latest policy 2017-18	Latest policy 2017-18	June 2018
<p>Joint replacement surgery (hip or knee replacement)</p> <p>With prior approval, BHR CCGs will fund joint surgery where all of the following criteria are met:</p> <ul style="list-style-type: none"> 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 <p>AND</p> <ul style="list-style-type: none"> The symptoms are refractory to non-surgical treatment. <p>AND</p> <ul style="list-style-type: none"> There is evidence that conservative means have failed to alleviate pain and disability <p>AND</p> <ul style="list-style-type: none"> The prosthesis used are standard 	<p>SWL CCGs fund this procedure when ALL of the following criteria (1 - 3) are met:</p> <p>1. Patient is</p> <p>a) Suffering from intense or severe persistent pain with moderate or severe functional impairment as measured by the classification system</p> <p>OR</p> <p>b) In immediate danger of losing their independence due to severe persistent pain and the joint replacement would prevent this</p> <p>OR</p> <p>c) At risk of destruction of their joint of such severity that delaying surgical correction would increase the technical difficulties of the procedure</p> <p>OR</p> <p>d) Diagnosed as suffering from end-stage osteoarthritis confirmed by appropriate radiological investigation*.</p> <p>AND</p> <p>2. Patient engaged with conservative therapy for at least 6 months and these</p>	<p>Referral criteria for Total Hip Replacements (THR) should be based on the level of pain and functional impairment suffered by the patient.</p> <p>NHS NWL CCGs will fund THR for patients who fulfil the following criteria:</p> <p>1. Patient complains of severe joint pain AND functional limitation, despite the use of non- surgical treatments such as adequate doses of NSAID analgesia, weight control treatments and physical therapies.</p> <p>OR</p> <p>2. Patient complains of mild to moderate joint pain AND has severe functional limitation, despite the use of non-surgical treatments such as adequate doses of NSAID analgesia, weight control treatments and physical therapies.</p> <p>Note: Patients who smoke should have attempted to stop smoking 8 to 12 weeks before referral to reduce the risk of surgery</p>	<p>In ordinary circumstances, funding for total hip replacement surgery is available for patients who meet ALL of the following criteria:</p> <p>The following exclusions apply:</p> <ul style="list-style-type: none"> Children. Patients with confirmed or suspected malignancy, acute trauma, suspected infection and inflammatory arthropathy. Patients with underlying disease (such as haemophilia or sickle cell) related hip disease. Young adults with abnormal hip anatomy. <p>The patient has 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</p>

	<p>failed NB: Patients with end-stage osteoarthritis should proceed to surgery without attempting conservative treatments. 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</p> <p>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.</p> <p>Please note: SWL CCGs do not routinely fund specialist custom hip prosthesis.</p> <p>Primary care advice: Although primary care is not directly responsible for requesting prior approval, primary care needs to be aware of the detailed clinical criteria relating to this commissioning policy before referring the patient to the appropriate service. Primary care must also ensure that they supply the all the relevant information to MSK or T&O services, particularly concerning conservative treatments. Conservative treatments should be documented in the patient's primary care record, or via Musculoskeletal Services' letters, or other clinic letters and provided with any referrals to secondary care.</p> <p>Conservative treatments Primary care should ensure that ALL of the following conservative measures are attempted over a period of 6 months prior to referral for hip replacement surgery:</p> <p>Weight reduction where appropriate, particularly when the patient has a BMI</p>	<p>and the risk of post-surgery complications. Patients should be routinely offered referral to smoking cessation services to reduce these surgical risks.</p> <p>Prior to referral for THR, non-surgical treatments, should be offered for all patients and the management of any underlying medical conditions should be optimised. This should include communication of the risks and benefits of all treatment options, taking into account the individual patient's comorbidities. Where appropriate, patients should be encouraged to reduce their BMI to <30 prior to surgery. Referral decisions should not be made on the basis of hip radiography as this is thought to be unreliable.</p>	<p>AND The symptoms are refractory to non-surgical treatment (including analgesia, exercise, physiotherapy and weight loss, where appropriate)</p> <p>AND The patient's symptoms are consistent with degenerative disease, and prior to arthroplasty there is radiological confirmation of this</p> <p>AND The patient confirms that they wish to discuss surgical treatment options.</p> <p>*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</p>
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	<p>greater than 35.</p> <p>Education and self-management such as elimination of damaging influence on hips, activity modification (avoid impact and excessive exercise), good shock-absorbing shoes.</p> <p>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 osteoarthritis).</p> <p>Management with medication including where appropriate oral/topical nonsteroidal anti-inflammatory drugs [NSAIDS] and paracetamol based analgesics (COX-2 Inhibitor of NSAIDS). Opioid analgesics can be used effectively if paracetamol or NSAIDS are ineffective or poorly tolerated.</p> <p>Oxford score The Oxford Hip Score may be used in primary care to guide clinicians whether to make a referral to specialist or not. Patients with a score of 20 or more could be considered for referral. However, it is not a validated tool and should not be used to make the final decision on hip replacement.</p>		
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Appendix 3

OPCS Codes covered within this evidence review (and ultimately policy).

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

OPCS Codes (Procedure codes)	
W371	Primary total prosthetic replacement of hip joint using cement
W372	Conversion to total prosthetic replacement of hip joint using cement
W378	Other specified total prosthetic replacement of hip joint using cement
W379	Unspecified total prosthetic replacement of hip joint using cement
W381	Primary total prosthetic replacement of hip joint not using cement
W388	Other specified total prosthetic replacement of hip joint not using cement
W389	Unspecified total prosthetic replacement of hip joint not using cement
W391	Primary total prosthetic replacement of hip joint NEC
W398	Other specified other total prosthetic replacement of hip joint
W399	Unspecified other total prosthetic replacement of hip joint
W431	Primary total prosthetic replacement of joint using cement NEC
W438	Other specified total prosthetic replacement of other joint using cement
W439	Unspecified total prosthetic replacement of other joint using cement
W441	Primary total prosthetic replacement of joint not using cement NEC
W448	Other specified total prosthetic replacement of other joint not using cement
W449	Unspecified total prosthetic replacement of other joint not using cement
W451	Primary total prosthetic replacement of joint NEC
W458	Other specified other total prosthetic replacement of other joint
W459	Unspecified other total prosthetic replacement of other joint
W461	Primary prosthetic replacement of head of femur using cement
W469	Unspecified prosthetic replacement of head of femur using cement
W471	Primary prosthetic replacement of head of femur not using cement
W478	Other specified prosthetic replacement of head of femur not using cement
W479	Unspecified prosthetic replacement of head of femur not using cement
W481	Primary prosthetic replacement of head of femur NEC
W488	Other specified other prosthetic replacement of head of femur
W489	Unspecified other prosthetic replacement of head of femur
W521	Primary prosthetic replacement of articulation of bone using cement NEC
W528	Other specified prosthetic replacement of articulation of other bone using cement
W529	Unspecified prosthetic replacement of articulation of other bone using cement
W531	Primary prosthetic replacement of articulation of bone not using cement NEC
W538	Other specified prosthetic replacement of articulation of other bone not using cement
W539	Unspecified prosthetic replacement of articulation of other bone not using cement
W541	Primary prosthetic replacement of articulation of bone NEC
W548	Other specified other prosthetic replacement of articulation of other bone
W549	Unspecified other prosthetic replacement of articulation of other bone
W551	Primary prosthetic interposition arthroplasty of joint
W558	Other specified prosthetic interposition reconstruction of joint
W559	Unspecified prosthetic interposition reconstruction of joint
W562	Primary interposition arthroplasty of joint NEC
W568	Other specified other interposition reconstruction of joint

W569	Unspecified other interposition reconstruction of joint
W580	Conversion from previous resurfacing arthroplasty of joint
W581	Primary resurfacing arthroplasty of joint
W588	Other specified other reconstruction of joint
W589	Unspecified other reconstruction of joint
W931	Primary hybrid prosthetic replacement of hip joint using cemented acetabular component
W938	Other specified hybrid prosthetic replacement of hip joint using cemented acetabular component
W939	Unspecified hybrid prosthetic replacement of hip joint using cemented acetabular component
W941	Primary hybrid prosthetic replacement of hip joint using cemented femoral component
W948	Other specified hybrid prosthetic replacement of hip joint using cemented femoral component
W949	Unspecified hybrid prosthetic replacement of hip joint using cemented femoral component
W951	Primary hybrid prosthetic replacement of hip joint using cement NEC
W958	Other specified hybrid prosthetic replacement of hip joint using cement
W959	Unspecified hybrid prosthetic replacement of hip joint using cement
Z843	Hip joint
With the following ICD-10 diagnosis code(s):	
M16.0	Osteoarthritis (arthrosis of the hip)
M16.1	Other primary osteoarthritis
M16.2	Osteoarthritis resulting from dysplasia, bilateral
M16.3	Other dysplastic osteoarthritis
M16.4	Post traumatic osteoarthritis, bilateral
M16.5	Other post-traumatic osteoarthritis
M16.6	Other secondary osteoarthritis, bilateral
M16.7	Other secondary osteoarthritis
M16.9	Osteoarthritis, unspecified