

2013

# Commissioning guide:

## Painful osteoarthritis of the knee

Sponsoring Organisation: British Association of Knee Surgery (BASK), British Orthopaedic Association (BOA), Royal College of Surgeons of England (RCSEng)

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# Commissioning guide 2013

## Painful osteoarthritis of the knee



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# Introduction

This pathway refers to patients with symptomatic osteoarthritis of the knee(s).

Osteoarthritis (OA) of the knee describes a clinical syndrome of joint damage resulting in pain accompanied by varying degrees of functional limitation and reduced quality of life.

20% of adults over 50 and 40% over 80 years report disability from knee pain secondary to osteoarthritis.<sup>1</sup>

The majority of patients present to primary care with symptoms of pain and stiffness, which reduces mobility and with associated reduction in quality of life.

Osteoarthritis may not be progressive and most patients will not need surgery, with their symptoms adequately controlled by non-surgical measures as outlined by NICE.<sup>2</sup>

When patient's symptoms are not controlled by up to 3 months of non-operative treatment they become candidates for assessment for joint surgery. The decision to have joint surgery is based on the patient's pre-operative levels of symptoms, their capacity to benefit, their expectation of the outcome and attitude to the risks involved. Patients should make shared decisions with clinicians, using decision support such as the NHS Decision Aid for knee osteoarthritis.

Knee replacement is the commonest type of surgery used to treat osteoarthritis. The lifetime risk of requiring joint replacement is 10% and in 2011 approximately 70,000 were implanted in the UK.<sup>3</sup>

Total knee replacement is highly effective in up to 85% of patients providing consistent lasting benefit with 95% 7-year joint survival.<sup>4,5</sup> It is highly cost effective.<sup>6</sup>

Alternatives to total knee replacement are partial replacement or osteotomy around the knee, both of which can be offered in units with a specialist knee surgery practice.<sup>7,8</sup>

This pathway is a guide which can be modified according to the needs of the local health economy.

## 1 High Value Care Pathway for painful osteoarthritis of the knee

### 1.1 Primary Care

Patients with osteoarthritis usually present in primary care with a history of knee pain and loss of function. Initial assessment should focus on identifying features that are typical of osteoarthritis and allow a diagnosis to be made. Care must be taken to exclude causes of knee pain that require alternative and more urgent referral

pathways.

### ***Assessment and diagnosis***

A clinical diagnosis of Osteoarthritis can be made by focusing on the following six clinical symptoms and signs: persistent knee pain, limited knee stiffness (<30 minutes), reduced function, crepitus, restricted movement and bony enlargement.<sup>9</sup>

Plain radiographs may be taken for initial diagnosis but are not essential in patients over 45.

Emergency referral to secondary care (same day)

- Knee pain in association with a red warm joint with acute restriction in range of movement and fever leading to suspicion of septic arthritis.

Consider urgent referral to secondary care if a patient presents with knee pain in association with any red flag symptoms or signs (<2/52)

- History of previous malignancy
- Localised hard mass adjacent to the knee
- Unexplained weight loss
- Severe night pain not controlled by analgesia
- New symptoms of inflammation in several joints suggesting systemic inflammatory joint disease (rheumatology referral)

If the patient's history includes trauma or an injury, then the patient should progress down your local knee injury pathway.

### ***Management once a diagnosis of osteoarthritis is made - offered to all patients<sup>2,9</sup>***

The majority of patients can be initially managed adequately in primary care by following the NICE guidance for managing osteoarthritis.<sup>10</sup> This includes:

- Agree a plan with the person for managing their OA
- Core treatments for all patients: access to appropriate information regarding the condition, advice to encourage activity and exercise and interventions to achieve weight loss if the patient is overweight.
- If further treatment is required then consideration should be given to the following additional non-pharmacological and pharmacological treatments, in light of the individual's person's needs and preferences: manual therapy (e.g. physiotherapy), supports and braces, shock absorbing shoes or insoles, local heat and cold therapy, non-steroidal anti-inflammatory medication (topical or oral) or COX-2 inhibitors (with a proton pump inhibitor), opioid medication.

Patients should be encouraged to refer to the NHS shared decision-making tool for osteoarthritis of the knee

Patients with symptomatic knee osteoarthritis require regular long-term review of symptoms. Consideration should be given to monitoring the person's symptoms and their impact on everyday activities and quality of life. Review should include on-going review of the person's knowledge of the condition, their personal preferences, their ability to access services, the effectiveness and tolerance of all treatments and their support for self-management.

### ***Referral for consideration of knee surgery (joint replacement or joint preserving surgery).***

Refer patients with moderate or severe symptoms that are refractory for up to 3 months of non-surgical treatment.

When considering referral for surgery use the following NICE guidelines:<sup>2 10</sup>

Patients should have received Core and at least one additional non-operative therapy.

- Consider referral for joint replacement surgery for people with osteoarthritis who experience joint symptoms (pain, stiffness and reduced function) that have a substantial impact on their quality of life and are refractory to non-surgical treatment.
- Base decisions on referral thresholds on discussions between patient representatives, referring clinicians and surgeons, rather than using current scoring tools for prioritisation.
- Refer patients before there is prolonged and established functional limitation and severe pain
- Patient specific factors such as age, gender, smoking, obesity and co-morbidity should not be barriers to referral

Ensure that patients who are referred are given appropriate information, including details of how care pathways are organised in their local area.

Consider optimisation of modifiable systemic or local risk factors that may delay surgical treatment prior to referral (e.g. investigation and treatment of anaemia or leg ulcers)

Refer patients with osteoarthritis of the knee who are refractory to non-operative treatment regardless of the radiographic grade of disease.

Referral can be made to an intermediate care service or direct to secondary care.

## **1.2 Intermediate Care<sup>1</sup>**

This may be provided by certified healthcare professionals in a number of different settings including Integrated Clinical Assessment and Treatment Services (ICATS) and can provide: assessment, non-surgical treatment programmes, referral to secondary care and postoperative care.

<sup>1</sup> Those services that do not require the resources of a general hospital, but are beyond the scope of the traditional primary care team (11. René JFM, Marcel GMOR, Stuart GP, et al. What is intermediate care? *Bmj* 2004;**329**(7462):360-61).

They should form part of an integrated care programme with close links to primary and secondary care. Their introduction is aimed at ensuring patients are on the correct high value pathway.

### **Assessment**

This should be identical to that in primary care attempting to exclude Red Flags and confirming the diagnosis of osteoarthritis.

### ***Introducing further non-operative interventions above Core therapy in line with NICE guidance:***

This may include the introduction specific supervised and evidence based manual therapy (e.g. physiotherapy) programs with goal setting.

In addition intra-articular injection of corticosteroid may be provided.

Interventions should only be introduced if the likelihood of helping patients is high. If not consider referral to avoid introducing delay in diagnosis or treatment.

Encourage the uptake of decision aids to foster shared decision-making.

### ***Referral to specialist secondary care:***

Refer where there is persistent pain and disability not responding to 3 months of evidence based non-surgical treatment.

Referral to secondary care should follow NICE guidance as laid out above for primary care.

## 1.3 Secondary Care

### **Assessment**

The patient's history should be established with focus on pain, disability, expectation and co-morbidities. Examination of the knee and other joints should include assessment for deformity, swelling and reduction in range of movement.

Specialist plain radiographs, with AP (or long-leg) and a lateral view. Skyline and Rosenberg views may also be requested.

MRI imaging is indicated if plain radiographs seem to underestimate joint damage or a more detailed view of the joint surface is required.<sup>12</sup>

### ***The Decision to Undergo Surgery or not***

The decision to undergo surgery is based on their symptom pattern, with the type of surgery determined by the pattern of joint damage and the patient's preference.

All patients must have engaged in a shared decision making process about alternatives. This includes presenting the patient with information on all treatment options, including surgery, and a clear description of the risks and benefits of each treatment.<sup>13</sup> The NHS Knee Osteoarthritis Decision Making Tool can be used for this purpose.<sup>14</sup>

### ***Treatment in secondary care***

#### ■ Non-operative measures:

Patients should be offered continued support with all non-operative measures (advice, exercise, weight loss, manual therapy, oral medication, injection therapy, splints and braces).

A period of observation of symptoms (working with Primary Care) can be offered, if patients are undecided about joint replacement.

Patients where the shared decision is not to undergo joint surgery require on-going support with non-operative measures, as above.

Patients should be informed that the decision to have surgery can be a dynamic process and a decision to not undergo surgery does not exclude them from having surgery at a future time point.

#### ■ Surgical option: *Total knee replacement*

Total knee replacement is highly clinically effective and cost effective.<sup>4 6 15</sup> Joint survival is 95% at 7-years.<sup>5</sup> It should be considered for patients with:

- Moderate or severe knee pain not adequately controlled by 3 months of non-surgical management, following NICE guidance.
- Evidence of exposed bone present in at least one of the knee joint compartments (Kellgren-Lawrence [KL] Grade III and above).

Patients outside these criteria may still be considered for surgery but a second opinion/ recorded case discussion is advised. Cases focus on patients without pain (the primary indication) but who present with:

- Functional disability in the presence of end stage cartilage disease.
- Progressive deformity of the knee (varus/valgus) with functional disability.

#### ■ Surgical option: *Partial knee replacement*

In this procedure only one compartment of the arthritic knee is replaced. It can be considered for patients with:

- Moderate or severe knee pain not adequately controlled by 3 months of non-surgical management, following NICE guidance.
- Grade III and above arthritis confined to a single joint compartment

Partial joint replacement can also provide good outcome but the survival is lower than total knee replacement.<sup>5 7 16</sup> Advantages are faster recovery, reduced morbidity, and reduced 90-day mortality.<sup>17 18</sup> As partial knee



replacement is less common it is more appropriately commissioned and delivered by more specialised units, with experienced surgeons, performing around 20 such procedures within a unit per year.<sup>8</sup>

### ■ Surgical option: *High tibial osteotomy*

High tibial osteotomy involves removing or adding bone to realign the limb and offload the knee.<sup>19</sup> It is effective and can provide functional outcomes similar to those seen after joint replacement<sup>20</sup>. The post-operative failure-rate at 10 years is around 30%.<sup>21</sup> There is no published cost-effectiveness data. It can be technically demanding and not all providers will be able to offer this service.<sup>22</sup> It should be considered for patients with:

- Moderate to severe knee pain not adequately controlled by 3 months of non-surgical management, following NICE guidance.
- Varus mis-alignment in medial unicompartmental osteoarthritis of the knee and this is the main indication for high tibial osteotomy (HTO)
- Diagnosis of osteoarthritis of the knee (Kellgren-Lawrence grade 1-3) isolated to one compartment, usually the medial side
- In younger patients as the outcome for partial or total knee replacement is not as successful as in older patients

The decision as to whether patients should have high tibial osteotomy rather than UKR or TKR remains a clinical one as good comparative evidence is not available.

### ■ Surgical option: *Arthroscopy*

Knee arthroscopy, lavage and debridement should be considered in patients:<sup>2 23-25</sup>

- With clear history of mechanical symptoms e.g. locking that have not responded to at least 3 months of non-surgical treatment
- Where a detailed understanding of the degree of compartment damage within the knee is required, above that demonstrated by imaging, when considering patients for certain surgical interventions (e.g. high tibial osteotomy)

Knee arthroscopy, lavage and debridement should NOT be offered for patient with non-mechanical symptoms of pain and stiffness.<sup>2 23</sup>

### **Postoperative care**

All patients should be seen within 6 weeks of their surgical procedure, receiving feedback about their treatment.

All patients should receive targeted physiotherapy after knee replacement or osteotomy. Routine patients may require up to 6 sessions of physiotherapy. Patients with significant co-morbidities will have greater needs and will require longer rehabilitation support.

Patients should be followed up in the first year, once at seven years and three yearly thereafter in asymptomatic patients. Telephone or web-based PROMS may be useful to monitor outcome. Radiographs, reported by radiologists with musculoskeletal interest, are essential as imaging identifies failure better than symptoms. Routine follow up in General Practice is not advised.



Novel or modified implants should be introduced conforming with the Beyond Compliance principles (<http://www.mhra.gov.uk/home/groups/commsic/documents/websiteresources/con216887.pdf>) with increased follow-up - usually annually for the first five years, two yearly to ten and three yearly thereafter.

Provider surgeons should consent and enter knee replacement patients onto the National Joint Register (NJR) and Provider organisations should collect Patient Reported Outcome Measures (PROMS).

## 1.4 Secondary Care: specialised surgery

Certain types of primary joint surgery to treat patients with osteoarthritis of the knee require Specialised facilities. These types of cases include patients presenting with:

- Severe bone loss
- Extreme deformity
- Post trauma/fracture OA with anatomy disorganised
- Joint surgery for OA in very young patients (<40)
- Prior joint fusion

This complex work is similar in nature to complex revision surgery (second revision and revision for infection). These surgeries are commissioned by NHS England directly.

# 2 Procedures explorer for painful osteoarthritis of the knee

Users can access further procedure information based on the data available in the quality dashboard to see how individual providers are performing against the indicators. This will enable CCGs to start a conversation with providers who appear to be 'outliers' from the indicators of quality that have been selected.

The Procedures Explorer Tool is available via the [Royal College of Surgeons](http://www.rcs.org) website.

(ICD10 codes: M17.0, M17.1, M17.2, M17.3, M17.4, M17.5, M17.6, M17.7, M17.8, M17.9)

Procedure	OPCS4 codes*
<b>Total Knee Replacement</b>	W40.1, W40.8, W40.9, W41.1, W41.8, W41.9, W42.1, W42.8, W42.9
<b>Partial Knee replacement</b>	W52.1, W52.8, W52.9, W53.1, W53.8, W53.9, W54.1, W54.8, W54.9

Knee Osteotomy	W1660, W16X, W12X
Knee arthroscopy	W82, W83, W85, W87, W89, W91,

## 3 Quality dashboard for painful osteoarthritis of the knee

The quality dashboard provides an overview of activity commissioned by CCGs from the relevant pathways, and indicators of the quality of care provided by surgical units.

The quality dashboard is available via the [Royal College of Surgeons](http://www.rcs.org.uk) website.

*For current dashboard indicators (see appendix 1)*

Measure	Definition	Data Source*
1. Standardised activity rate	Activity rate standardised for age and sex	HES/ Quality Dashboard appendix 1
2. Average length of stay	Total spell duration/total number of patients discharged	HES/ Quality Dashboard appendix 1
3. Day case rate	Number of patients admitted and discharged on the same day/total number of patients discharged	HES/ Quality Dashboard appendix 1
4. Short stay rate	Number of patients admitted and discharged within 48 hours /total number of patients discharged	HES/ Quality Dashboard appendix 1
5. 7/30 day readmission rate	Number of patients readmitted as an emergency within 7/30 days of discharge /total number of patients discharged (Excludes Cancer, dementia, mental health)	HES/ Quality Dashboard appendix 1
6. Reoperations within 30 days/1 year	Number of patients re-operated during an emergency readmission within 30 days/ 1 year /total number of patients discharged	HES/ Quality Dashboard appendix 1
7. In hospital mortality rate	Number of patients who die while in hospital /total number of patients discharged	HES/ Quality Dashboard appendix 1

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*Areas for development of dashboard in future*

Measure	Evidence Base	Data Source*
<b>PROM (OKS) change at 6 months post surgery for TKA</b>	National data set	The Health and Social Care Information Centre
<b>Enhanced recovery programme for TKA</b>	HES data set	HES
<b>Rate of blood transfusion in TKA</b>	BOA Guidance on Blood-transfusion in orthopaedic surgery	Providers
<b>Uptake of pre-operation antibiotics at surgery for TKA</b>	BASK optimal patient management guide (Blue Book)	Providers
<b>Infection rate (TKA)</b>	HES data set	Providers
<b>Uptake of thromboprophylaxis with TKA</b>	NICE	VERITY, Providers

\* includes data from HES, National Clinical Audits, Registries

## 4 Levers for implementation

### 4.1 Audit and peer review measures

Levers for Implementation are tools for commissioners and providers to aid implementation of high value care pathways.

Measure	Standard	Data obtained from:
<b>Adherence to NICE Guidance for referral</b>	Percentage of people referred to secondary care for whom core treatments options attempted	Local use of referral checklist/tool Audit
<b>Patient Decision Aids</b>	Number of patients confirming awareness / use of NHS Direct Patient Decision Aid	Peer review through GP Quality Outcomes Framework QP indicators
<b>Change in PROMs score for TKA</b>	A centre should demonstrate acceptable PROMs outcome	National PROMs data
<b>Enhanced Recovery</b>	Number of patients cared for along an Enhanced Recovery Care Pathway	Performance on national ER indicators

### 4.2 Quality Specification/CQUIN (Commissioning for Quality and Innovation)

Measure	Description	Data specification (if required)
Infection rate in TKA	<1%	HES data, SSI data
Enhanced recovery programme	Clearly defined ERP in place within hospital	Hospital data
Uptake of appropriate thromboprophylaxis	100% compliance	VERITY, Hospital data
WHO checklist	100% compliance	Hospital data

## 5 Directory

### 5.1 Patient Information for painful osteoarthritis of the knee

Name	Publisher	Link
<b>Knee OA Decision Aid</b>	NHS Direct	<a href="http://sdm.rightcare.nhs.uk/pda/osteoarthritis-of-the-knee/">http://sdm.rightcare.nhs.uk/pda/osteoarthritis-of-the-knee/</a>
<b>NHS Choices</b>	NHS	<a href="http://www.nhs.uk/Pages/HomePage.aspx">www.nhs.uk/Pages/HomePage.aspx</a>
<b>NHS Evidence</b>	NHS	<a href="http://www.evidence.nhs.uk">www.evidence.nhs.uk</a>

### 5.2 Clinician information for painful osteoarthritis of the knee

Name	Publisher	Link
<b>BOA/BASK Good practice in TKA</b>	BOA/BASK	<a href="http://www.boa.ac.uk/Publications/Pages/Bluebooks.aspx">www.boa.ac.uk/Publications/Pages/Bluebooks.aspx</a>
<b>NHS Evidence</b>	NHS	<a href="http://www.evidence.nhs.uk">www.evidence.nhs.uk</a>
<b>NICE Guidance</b>	DoH	<a href="http://www.nice.org.uk/CG177">www.nice.org.uk/CG177</a>

### 5.3 NHS Evidence case studies

Name	Publisher	Link
BOA/BASK Good practice in TKA	BOA/BASK	<a href="http://www.boa.ac.uk/Publications/Pages/Bluebooks.aspx">http://www.boa.ac.uk/Publications/Pages/Bluebooks.aspx</a>

## 6 Benefits and risks

Benefits and risks of commissioning the pathway are described below

Consideration	Benefit	Risk
<b>Patient outcome</b>	Ensure access to effective conservative, medical and surgical therapy	Prolonged treatment with patients disabled and dependent, unable to work if of working age
<b>Patient safety</b>	Reduce chance of missing serious knee pathology	
<b>Patient experience</b>	Improve access to patient information.	Patients not taking charge of their care, dependence on Primary and Secondary care
<b>Equity of access</b>	Improve access to effective procedures	With-holding of access for financial reasons alone
<b>Resource impact</b>	Reduce unnecessary investigation, referral and intervention	Resource required to establish community specialist provider

## 7 Further information

### 7.1 Research recommendations

1. Evaluation of symptoms scoring systems to guide referral and management of patients with osteoarthritis who are being considered for surgery. (NIHR HTA to investigate this is on-going).
2. Effectiveness of non-surgical treatments.
3. Effectiveness of non-replacement surgery for the arthritic knee (e.g. HTO)
4. Comparison of partial replacement versus total knee replacement (NIHR HTA TOPKAT Trial is on-going).
5. Comparison of partial replacement versus HTO.
6. Development of cost-effective surveillance of patients after their joint replacement.

### 7.2 Other recommendations

1. Improved patient Information
2. Improve clinician education
3. Mandatory data collection in hospitals
4. Separation of co-morbidity from complication from IC CC list

### 7.3 Evidence base

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## 7.4 Guide development group for painful osteoarthritis of the knee

A commissioning guide development group was established to review and advise on the content of the commissioning guide. This group met four times, with additional interaction taking place via email.



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Name	Job Title/Role	Affiliation
Andrew Price (Chairman)	Professor of Orthopaedic Surgery	BASK , BOA
Tim Briggs	Professor of Orthopaedic Surgery	BOA
Joe Dias	Chair, Orthopaedic Commissioning Guidance Development Project; Consultant Orthopaedic Surgeon	BOA
Bob Smith	Patient representative	BOA PLG
Kate Brown	Director of Planning and Primary Care Development (Commissioner)	NHS Southern Derbyshire Clinical Commissioning Group
Mr. Vinay Takwale	Orthopaedic Surgeon	BODS
Professor David Beard	Professor of Musculo-skeletal Science & Extended Scope Physiotherapy Practitioner	University of Oxford
Karen Barker	Clinical Director for Orthopaedics	Nuffield Orthopaedic Centre, Oxford
Dr Junaid Bajwa	General Practitioner & Commissioner	NHS Greenwich
Ms Kate Viner	Patient representative	NRAS

Over the course of the development of the Commissioning guidance document, the guideline development group was advised by a rheumatologist and policy director for a charity.

Information specialist support provided by Bazian, 10 Fitzroy Square, London, W1T 5HP.

## 7.5 Funding statement

The development of this commissioning guidance has been funded by the following sources:

- DH Right Care funded the costs of the guide development group, literature searches and contributed towards administrative costs.
- The Royal College of Surgeons of England and the British Orthopaedic Association (BOA) provided staff to support the guideline development.

## 7.6 Methods Statement

The development of this guidance has followed a defined, NICE Accredited process. This included a systematic

literature review, public consultation and the development of a Guidance Development Group which included those involved in commissioning, delivering, supporting and receiving surgical care as well as those who had undergone treatment. An essential component of the process was to ensure that the guidance was subject to peer review by senior clinicians, commissioners and patient representatives.

Details are available at this site:

[www.rcseng.ac.uk/providers-commissioners/docs/rcseng-ssa-commissioning-guidance-process-manual/at\\_download/file](http://www.rcseng.ac.uk/providers-commissioners/docs/rcseng-ssa-commissioning-guidance-process-manual/at_download/file)

## 7.7 Conflicts of Interest Statement

Individuals involved in the development and formal peer review of commissioning guides are asked to complete a conflict of interest declaration. It is noted that declaring a conflict of interest does not imply that the individual has been influenced by his or her secondary interest, but this is intended to make interests (financial or otherwise) more transparent and to allow others to have knowledge of the interest. Professor Joe Dias (Chair, Musculoskeletal Commissioning Guidance Development Project; Consultant Orthopaedic Surgeon) has seen and approved these. All records are kept on file, and are available on request.

## Appendix 1: Dashboard

To support the commissioning guides the Quality Dashboards show information derived from Hospital Episode Statistics (HES) data. These dashboards show indicators for activity commissioned by CCGs across the relevant surgical pathways and provide an indication of the quality of care provided to patients. The dashboards (<http://rcs.methods.co.uk/dashboards.html>) are supported by a meta data (<http://rcs.methods.co.uk/metadata.html>) document to show how each indicator was derived.



METHODS



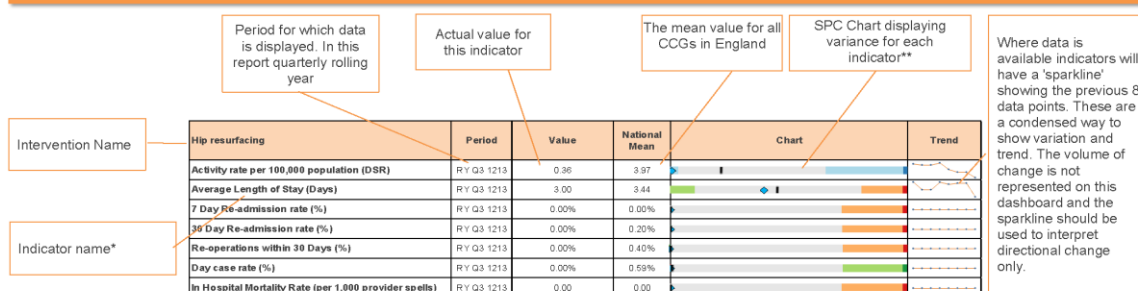
### Created and maintained by Methods Insight Analytics in association with BOA Rightcare Surgical Commissioning Dashboard: Orthopaedics

The Right Care Dashboard provides rates of Activity for CCGs for interventions identified as a priority by the surgical specialist association.

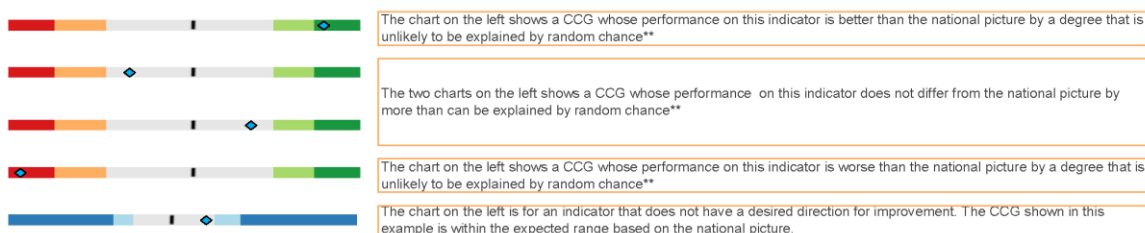
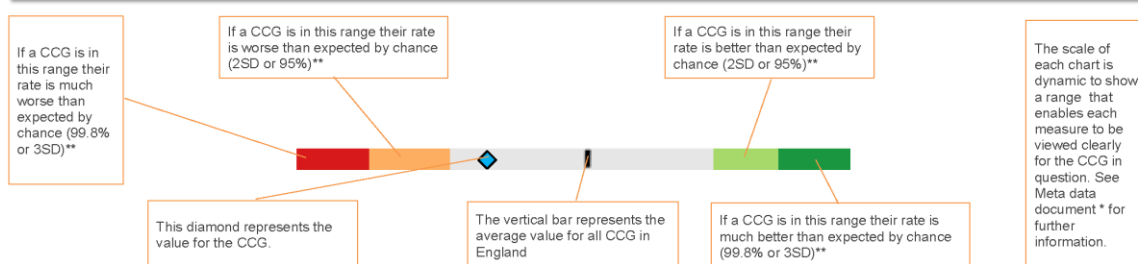
These rates are directly standardised against the national population for Age and Sex.

This dashboard supports the Painful Osteoarthritis of the Hip commissioning guidance document developed by the BOA working group with the RCSE.

#### Report Overview



#### How to interpret charts



\* For a full description of each metric and metadata, please see technical guidance.

\*\* These charts are constructed using statistical process control (SPC) principles and use control limits to indicate variation from the national mean. The display shows both two standard deviation (95%) control limits and three standard deviation (99.8%) control limits. Values within these limits (the light grey section) are said to display 'normal cause variation' in that variation from the mean can be considered to be random. Values outside these limits (in the light green or orange sections) are said to display 'special cause variation' at a two standard deviation level, and a cause other than random chance should be considered. Values outside these sections (in the dark green or red sections) also display 'special cause variation' but against a more stringent test.

Variation at the two standard deviation level can be considered to raise an alert, and variation at the three standard deviation level to raise an alarm.

# Commissioning guide 2013

## Painful osteoarthritis of the knee



### Example CCG

#### Orthopaedics-Painful Osteoarthritis of the Knee

##### Arthroscopy

Metric	Period	Value	Mean	Chart	Trend
Age/Sex Standardised Activity (per 100,000 population)	RY Q4 1213	82.86	81.11		
Average Length of Stay (Days)	RY Q4 1213	0.16	0.12		
7 Day Readmission Rate (%)	RY Q4 1213	0.00	0.41		
30 Day Readmission Rate (%)	RY Q4 1213	1.20	1.24		
30 Day Reoperation Rate (%)	RY Q4 1213	1.20	0.71		
Daycase Rate (%)	RY Q4 1213	86.85	90.67		
In Hospital Mortality Rate (per 1,000 discharges)	RY Q4 1213	0.00	0.00		

##### Chart



##### Trend



##### Partial knee replacement

Metric	Period	Value	Mean	Chart	Trend
Age/Sex Standardised Activity (per 100,000 population)	RY Q4 1213	6.14	16.89		
Average Length of Stay (Days)	RY Q4 1213	4.60	3.36		
7 Day Readmission Rate (%)	RY Q4 1213	0.00	0.50		
30 Day Readmission Rate (%)	RY Q4 1213	0.00	1.52		
30 Day Reoperation Rate (%)	RY Q4 1213	0.00	1.03		
Daycase Rate (%)	RY Q4 1213	0.00	0.62		
In Hospital Mortality Rate (per 1,000 discharges)	RY Q4 1213	0.00	0.00		

##### Total knee replacement

Metric	Period	Value	Mean	Chart	Trend
Age/Sex Standardised Activity (per 100,000 population)	RY Q4 1213	117.60	107.50		
Average Length of Stay (Days)	RY Q4 1213	5.59	5.06		
7 Day Readmission Rate (%)	RY Q4 1213	2.88	1.73		
30 Day Readmission Rate (%)	RY Q4 1213	6.02	4.78		
30 Day Reoperation Rate (%)	RY Q4 1213	2.62	2.68		
Daycase Rate (%)	RY Q4 1213	0.00	0.20		
In Hospital Mortality Rate (per 1,000 discharges)	RY Q4 1213	2.62	0.78		