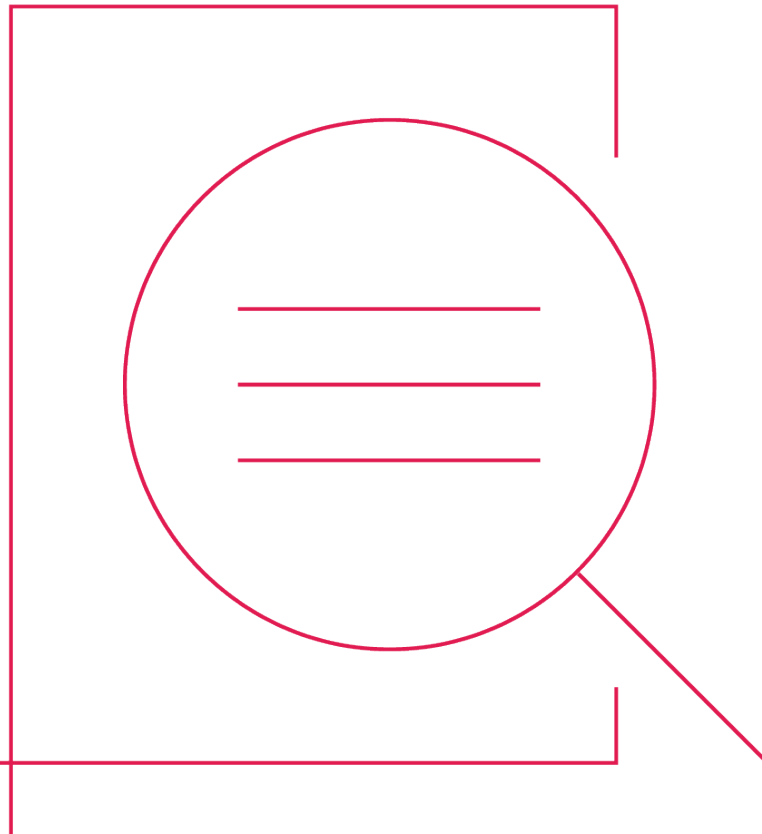


July / 2020

Evidence-Based Interventions Engagement document





Evidence-Based Interventions

Engagement Document

First published: 13 July 2020

Prepared by:
Expert Advisory Committee to the Evidence-Based Interventions programme

This information can be made available in alternative formats, such as large print, and may be available in alternative languages, upon request. Please email: EBI@aomrc.org.uk

[Read the Plain English Version](#)



Contents

4	Overview
5	Foreword
8	The independent Expert Advisory Committee
10	An addition of 31 new interventions
21	Measurement for additional interventions
28	Putting guidance into practice
29	How to get involved
30	Summary of engagement questions
48	Appendix 1: Glossary
54	Appendix 2: Proposed clinical criteria for the 31 interventions
54	1.1.1 A - Diagnostic coronary angiography for low risk, stable chest pain
55	1.1.2 B - Repair of minimally symptomatic inguinal hernia
57	1.1.3 C - Surgical intervention for chronic sinusitis
59	1.1.4 D - Removal of adenoids
61	1.1.5 E - Arthroscopic surgery for meniscal tears
63	1.1.6 F - Troponin test
65	1.1.7 G - Surgical removal of kidney stones
66	1.1.8 H - Cystoscopy for men with uncomplicated lower urinary tract symptoms
68	1.1.9 I - Surgical intervention for benign prostatic hyperplasia
70	1.1.10 J - Discectomy
72	1.1.11 K - Radiofrequency facet joint denervation
73	1.1.12 L - Exercise ECG for screening for coronary heart disease
75	1.1.13 M - Upper GI endoscopy
77	1.1.14 N - Appropriate colonoscopy
80	1.1.15 O - Repeat Colonoscopy
82	1.1.16 P - ERCP in acute gallstone pancreatitis without cholangitis
83	1.1.17 Q - Cholecystectomy
85	1.1.18 R - Appendicectomy without confirmation of appendicitis
87	1.1.19 S - Low back pain imaging
89	1.1.20 T - Knee MRI when symptoms are suggestive of osteoarthritis
92	1.1.21 U - Knee MRI for suspected meniscal tears
93	1.1.22 V - Vertebroplasty for painful osteoporotic vertebral fractures
96	1.1.23 W - Imaging for shoulder pain
98	1.1.24 X - MRI scan of the hip for arthritis



99	1.1.25	Y - Fusion surgery for mechanical axial low back pain
101	1.1.26	Z - Helmet therapy for treatment of positional plagiocephaly/ brachycephaly in children
103	1.1.27	AA - Pre-operative chest x-ray
104	1.1.28	BB - Pre-operative ECG
106	1.1.29	CC - Prostate-specific antigen (PSA) test
109	1.1.30	DD - Liver function, creatinine kinase and lipid level tests - [Lipid lowering therapy]
111	1.1.31	EE - Blood transfusion
115		Appendix 3: Independent Expert Advisory Committee
125		Appendix 4: Equality Impact Assessment
126		Appendix 5: Coding methodology summary tables
184		Appendix 6: Technical appendix
192		Appendix 7: Variation in activity
218		Appendix 8: Monthly spell data from January to April 2020



Overview

Subject:	Evidence-Based Interventions programme draft proposals
Scope of this document:	Tests, treatments and procedures (otherwise known as interventions) that should only be offered in situations described in this document.
Purpose of this document:	To invite comments on 31 interventions described in this document with a view to making a final recommendation later this year.
Who should read this document:	Individuals or organisations that may be directly affected by or have an interest in the policies described. Specifically, this includes GPs, secondary care clinicians, allied health professionals, NHS commissioners and providers of NHS-funded services.
Duration:	6 weeks, starting 13 July 2020 ending 24 August 2020.
How to respond/get more information	Enquiries and responses can be shared via an online form at: www.aomrc.org.uk/ebi or emailed to: EBI@aomrc.org.uk
After the engagement exercise:	All responses will be taken into account and considered fully before deciding the final approach.
Getting to this stage and previous engagement:	The independent Expert Advisory Committee provided independent advice to expand the EBI programme. The EBI programme is overseen by NHS Clinical Commissioners, the Academy of Medical Royal Colleges, The National Institute for Health and Care Excellence, and NHS England and NHS Improvement. In drafting an expanded list of interventions, the Medical Royal Colleges and specialist societies, clinical commissioners and patient groups including the Strategic Co-Production Group at NHS England and NHS Improvement, the Academy of Medical Royal Colleges patient and lay committee and The Patients Association ¹ were consulted extensively. The engagement exercise will be independently led by the Expert Advisory Committee and supported by the Academy of Medical Royal Colleges.

¹ In the context of this document, this refers to the Royal College of Anaesthetists (RCOA) including the Faculty of Pain Medicine; the Royal College of General Practitioners (RCGP); the Royal College of Pathologists (RCPath); the Royal College of Physicians (RCP) including British Gastroenterology Society (BSG), British Cardiovascular Society (BCS), British Society of Haematology (BSH); the Royal College of Paediatrics and Child Health (RCPCH) including British Association for Paediatric Otolaryngology (BAP0), British Association of Perinatal Medicine (BAPM); the Royal College of Radiologists (RCR) including British Medical Ultrasound Society (BMUS), British Society of Cardiovascular Imaging (BSCI), British Society of Cardiovascular Computed Tomography (BSCCT), British Society for Gastrointestinal and Abdominal Radiology (BSGAR), British Society of Thoracic Imaging (BSTI), British Society of Interventional Radiology (BSIR); the Royal College of Surgeons of England (RCS) and Federation of Surgical Specialty Associations (FSSA) including Association of Anaesthetists, Association of Coloproctology of Great Britain and Ireland (ACPGBI), Association of Surgeons of Great Britain and Ireland (ASGBI), Association of Upper Gastrointestinal Surgery (AUGIS), Great Britain and Ireland Hepato Pancreato Biliary Association (GBIHPBA), Pancreatic Society of Great Britain and Ireland (PSGBI); British Orthopaedic Association (BOA) including British Association for Surgery of the Knee (BASK), British Elbow and Shoulder Society (BESS), British Association of Spine Surgeons (BASS), British Hip Society (BHS), British Association of Urological Surgeons (BAUS); British Association of Otolaryngology (ENTUK); British Blood Transfusion Society (BBTS); NHS Blood and Transplant (NHSBT); Craniofacial Society of Great Britain and Ireland (CFSGBI); Bladder Health UK, Versus Arthritis, Prostate Cancer UK; GUTS UK; Chartered Society of Physiotherapists (CSP); British Heart Foundation (BHF).



Foreword

1. The NHS workforce has a remarkable record in providing safe, effective and equitable care for everyone. But, in common with many healthcare systems around the world, the NHS is facing significant challenges, and these day-to-day challenges have been compounded by the outbreak of COVID-19 and the resulting effects on health and social care.
2. While it is for society to decide how much resource should be committed to meet demand for health care, we all have a duty to ensure the resources that are available are used wisely. The NHS should only offer tests, treatments and procedures (often referred to as interventions) that the best available evidence shows to be most appropriate and clinically effective.
3. In 2018, the Evidence-Based Interventions (EBI) programme was established as a joint enterprise between four national partners: the Academy of Medical Royal Colleges (AoMRC), NHS Clinical Commissioners (NHS CC), the National Institute for Health and Care Excellence (NICE) and NHS England and Improvement (NHS E/I).
4. Clinical evidence is the foundation of the programme and so a new, independent Expert Advisory Committee (the Committee) was established in May 2019 tasked to expand the programme and make recommendations. During 2019, the Committee developed and agreed an approach to examine tests, treatments and procedures that are only proven to be clinically appropriate in certain circumstances when specific criteria are met.
5. The aims of the programme are to improve the quality of patient care by:
 - Taking account of the best available evidence as to the appropriateness or otherwise of clinical interventions.
 - Ensuring clinical interventions are offered to the right person for the right reasons and when the correct clinical criteria are met.
 - Encouraging patients and clinicians to consider alternatives which are proven to be safer or more effective, or in some cases, doing nothing.
 - Tackling unwarranted variation to ensure tests, treatments and procedures are carried out more uniformly across the country.
6. In line with the aims of the EBI programme, the ultimate ambitions are to work with systems, commissioners, providers and patients to:
 - Reduce avoidable harm to patients. With clinical interventions, the risk of complications can never be entirely eliminated. Weighing the risks and benefits



of appropriate treatments should be co-produced with patients. Patients should have the opportunity discuss the risks, benefits, alternatives

- and what will happen if they do nothing with their doctor when deciding what is right for them.
 - Save precious professional time. When the NHS is severely short of staff, professionals should only offer appropriate and effective treatment to patients. If resources are used on treatments that are not appropriate, fewer resources can be allocated to tests, treatments and procedures that are often more effective or deliver better outcomes for patients.
 - Maximise value and avoid waste. Inappropriate care is poor value for the taxpayer. Resources should be focused on effective and appropriate NHS services.
 - Help clinicians maintain their professional practice and keep up to date with the changing evidence base and best practice.
 - Create headroom for innovation. To accelerate the adoption of new and proven innovations, the NHS should reduce the number of inappropriate interventions. This allows innovation in prescribing and technology to improve patients' ability to self-care and live with long term conditions.
7. The Committee identified a list of 31 interventions to engage the public on. This document represents the culmination of the Committee's work and the Committee is inviting comments on the proposals contained in this document.
8. On completion of the engagement period the Committee will consider the responses that have been submitted and make a final recommendation. We believe that the impact of COVID-19 on the NHS has reinforced the importance of this work. The necessary pause in elective care work to deal with COVID-19 pressures has resulted in an increased waiting list. As treatments are rescheduled, it is critical that clinicians' time is freed from providing inappropriate care to focus on providing effective care to people who need it.

Signatures Expert Advisory Committee

Professor Martin Marshall
Chair of the Royal College of General Practitioners

Professor Sir Terence Stephenson
Chair of Health Research Authority



Professor Derek Alderson

Dr Paul Chrisp

Professor Adam Elshaug

Pam Essler

Professor Danny Keenan

Dr Ash Paul

Dr Josephine Sauvage

Dr Catherine Thompson

April Wareham

Dr Tim Wilson

Dr Sarah Clarke



The Independent Expert Advisory Committee

9. As healthcare evolves it is right that the effectiveness and appropriateness of all tests, treatments and procedures offered by the NHS are reviewed. At the same time, with an ever-growing demand on the healthcare system, it is important that doctors take ownership of making the best use of resources available – a view which is enshrined in the General Medical Council's guidance for doctors, '*Good Medical Practice*'.²
10. The independent Expert Advisory Committee (the Committee) was established by the four partners of the EBI programme in May 2019. The Committee is co-chaired by Professor Sir Terence Stephenson, former Chair of the General Medical Council and current Chair of the Health Research Authority and Professor Martin Marshall, Chair of the Royal College of General Practitioners. It comprises senior clinicians, patient representatives, leading experts on value in healthcare, and clinical commissioners.
11. The Committee is tasked with independently:
 - Recommending a list of interventions in the NHS that are proven to be inappropriate that should not be routinely commissioned or should only be commissioned when specific clinical criteria are met;
 - Drafting the clinical guidance based on rigorous evidence and balanced consensus amongst patients, clinicians and commissioners;
 - Facilitating a public engagement exercise on the guidance and incorporating feedback from the engagement to produce finalised guidance on specific interventions that should not be routinely commissioned and/or the criteria for when interventions should be commissioned;
 - Maximising the implementation of evidence-based guidance to reduce unnecessary and inappropriate interventions and seeking to provide a number of recommended procedures for implementation;
 - Supporting the EBI programme, including public engagement, as appropriate.
12. During 2019 the Committee agreed its approach and methodology to meet its mandate [see Appendix 3 for further detail]. Using its agreed approach, the Committee identified an initial long-list of interventions from clinical evidence including NICE guidance, Choosing Wisely recommendations,³ academic studies

² General Medical Council [Good Medical Practice](#)

³ Evidence includes NICE [Cost Saving Guidance](#); NICE [Technology Appraisal Guidance](#); Choosing Wisely UK <http://www.choosingwisely.co.uk/i-am-a-clinician/recommendations/>; <http://www.choosingwisely.org/clinician-lists/>; Choosing Wisely Canada <https://choosingwiselycanada.org/recommendations/>; Choosing Wisely Australia <http://www.choosingwisely.org.au/recommendations>



and CCGs' policies on Procedures of Limited Clinical Effectiveness (PoLCE) collated through NHS CC, suggestions from specialist clinicians, academics, commissioners, reflections from the EBI demonstrator community of 13 Sustainability and Transformation Partnerships (STPs) and Integrated Care Systems (ICSs), feedback from the consultation we ran over the summer of 2018 on the first phase of EBI and in line with the Long Term Plan priorities for care quality and outcomes improvement.

13. The Committee deliberated the guidance for each test, treatment or procedure taking account of the following:
 - Advice from Medical Royal Colleges, specialist societies, clinicians, clinical commissioners, professional leaders and specialist medical charities;
 - Opinions from patients by liaising with patients and patient representative groups, including the Strategic Co-Production Group at NHS England and NHS Improvement, the Academy of Medical Royal Colleges' Patient and Lay Committee and The Patients Association to test the proposals and understand patients' priorities;
 - The volume of interventions, geographical variation, strength of evidence and pace of change that could be applied to implement guidance relatively quickly and on a large scale;
 - Reflections from commissioners and providers as well as partner teams in NHS England and Improvement such as Getting It Right First Time (GIRFT) and RightCare on the proportionality and levers that could be deployed to put guidance into practice;
 - The importance of a strong focus on shared decision making and self-care in which clinicians and patients work together to select treatments based on clinical evidence and patients' informed preferences.
14. The list of 31 interventions outlined in the following section represents the Committee's work to date and the Committee asks for your views on these proposals. The Committee will reengage with the individuals and groups described in paragraph 13 above and host a series of webinars. Based on the feedback received, the proposals will be updated later in the year before being submitted as a final recommendation.
15. It is important to note that the detail of medical interventions is often complicated and an explanation is provided in the clinical guidance in Appendix 2. The guidance seeks to summarise in what circumstances interventions may be recommended, where they should not be done at all, and where more appropriate alternatives should replace them in line with best available evidence.
16. The independent Committee terms of reference and methodology can be found in Appendix 3.



An addition of 31 new interventions

17. In developing the list of 31 interventions and associated guidance presented in this document, the Committee received comments from the Medical Royal Colleges, clinical commissioners and patient groups. As with the initial list of 17 interventions published in 2018,⁴ the interventions fall into two categories:
 - Category 1 interventions – those interventions that should not be routinely commissioned by CCGs or performed, unless a successful Individual Funding Request (IFR) is made.
 - Category 2 interventions – those interventions which are only effective in certain situations when specific clinical criteria are met.
18. The proposed list of 31 interventions are broader in scope than the initial list of 17 in that it also includes tests and treatments as well as medical procedures. In some cases, the Committee found there are limitations as to the quality and availability of data. As a result, the Committee has grouped the 31 interventions in three groups as follows:

[A] Those interventions for which data are available and sufficient to determine volume and variation, and establish goals using the same methodology as used in the initial list of 17 interventions. There are 13 interventions in this category;

[B] Those interventions for which data are available to determine volume and variation, but for which further work is required to establish goals, such as linking with additional datasets such as Diagnostic Imaging Dataset. There are 12 interventions in this category; and

[C] Those interventions for which data are not currently available, but for which further datasets are being explored to assess their accessibility and quality. There are six interventions in this category.
19. A strength of the programme is the ability to use data and measurement to inspire improvement and guide implementation. However, the Committee felt that despite the data limitations, the clinical evidence is clear and, subject to feedback, national guidance should be issued for all 31 proposed interventions. Where data quality is currently insufficient to accurately measure implementation, the

⁴ For the initial list of 17 interventions, a review on the clinical codes underlying the interventions was performed in February 2020 in collaboration with the Data, Analysis and Intelligence Service at NHS England and NHS Improvement, GIRFT, EWG/ NHS Digital, Royal Colleges and Specialist Societies and CCGs/ Trusts. Data was examined to establish the codes used in practice across the NHS in England for diagnoses and associated procedures. Best practice clinical coding methods were used to ensure clinical and data accuracy. Following those inputs, the EBI programme team carried out an internal review based on clinical criteria and dataset testing. A summary of the proposed coding changes by interventions, the rationale for the recommended change and the impact of the change on the data can be found at <https://www.nhsbsa.nhs.uk/epact2/dashboards-and-specifications/evidence-based-interventions>.



Committee proposes that the data be improved by working with experts in systems and the public in line with the programme's aim for continuous improvement. For further detail on data and measurement, including a detailed explanation of the programme's methodology, see "Measurement for additional interventions" and Appendix 5.

20. Guidance on the further 31 interventions has been developed by the Committee and summaries of those interventions are set out in Tables 1A-1C below in which interventions are grouped by data quality rather than by Category 1 or Category 2. For full clinical guidance see Appendix 2.

Table 1A: Interventions where data are sufficiently robust to measure implementation

Test, treatment or procedure	Recommendation	Summary
Cardiology – caring for the heart		
A	Invasive angiogram to investigate stable chest pain	<i>Diagnostic angiogram should not be used as first-line investigation for low risk, stable chest pain</i>
		Invasive diagnostic angiogram should not be used as the first-line investigation in patients with low-risk, stable chest pain where clinical assessment alone cannot exclude a diagnosis of stable angina. Invasive angiogram can sometimes cause haematoma and exposes the patient to radiation. Instead, CT coronary angiography should be offered as first-line investigation. This test is safe, reliable and exposes the patient to a lower dose of radiation. Invasive coronary angiography should be offered to patients with significant findings on CT coronary angiogram, or where indicated by further non-invasive imaging.
General surgery		
B	Surgery for inguinal hernia	<i>Repair of minimally symptomatic inguinal hernia is not indicated</i>
		Repair of minimally symptomatic hernia is not appropriate. Delaying surgical repair until symptoms increase is acceptable. Acute hernia incarcerations occur rarely and patients who develop symptoms have no greater risk of operative complications than those undergoing prophylactic hernia repair. Watchful waiting is a safe option for people with minimally symptomatic inguinal hernias. Many people with an inguinal hernia are asymptomatic or minimally symptomatic and may never need surgery.
ENT – surgery on the ear, nose and throat		
C	Surgery for sinusitis	<i>Surgical intervention for chronic sinusitis is rarely indicated</i>
		Endoscopic sinus surgery should only be considered where medical treatment has failed. Surgery carries some risks that include bleeding, infection, scar tissue formation, and very rarely orbital injuries or cerebrospinal fluid leak (with associated risk of meningitis). There is also a risk of recurrent symptoms and ongoing medical treatment to maintain symptom improvement after endoscopic sinus surgery.



			<p>First-line treatment for sinusitis is with maximal medical therapy which should include intranasal steroids and nasal saline irrigation. In the case of Chronic rhinosinusitis with Nasal Polyposis [CRSwNP] a trial of a short course of oral steroids should also be considered.</p>
D	Removal of the adenoids	<i>Removal of the adenoids is rarely indicated</i>	<p>NICE guidance recommends that adjuvant adenoidectomy should not be performed for the treatment of glue ear in the absence of persistent and/or frequent upper respiratory tract symptoms. The benefit in hearing compared to grommets alone is very limited. Risks of adenoidectomy include damage to teeth, lips or gums, bleeding (usually only minor and self-resolving), and rarely speech problems.</p> <p>Adenoidectomy is indicated in some children as described in this guidance, for example where the child has persistent and/or frequent upper respiratory tract symptoms.</p>
Orthopaedics – caring for bones and joints			
E	Surgery to treat knee problems	<i>Arthroscopic surgery for meniscal tears should be performed following the published BASK clinical guidelines</i>	<p>Most patients with a degenerate meniscal tear should not have arthroscopic meniscectomy as first-line treatment but should instead be treated non-operatively. Non-operative treatment is highly effective and may involve patient education, physiotherapy, weight-loss interventions and muscle strengthening exercises. Paracetamol and topical NSAIDs should be first-line pharmacological management strategies. Many patients treated this way will improve and do not require surgery.</p> <p>However, in the following situations arthroscopic meniscal surgery is indicated: patients with a repairable meniscal tear, patients with a locked knee, and patients with mechanical symptoms and a MRI proven unstable meniscal tear that does not respond to three months of non-operative treatment.</p> <p>Arthroscopic meniscectomy carries a small risk of serious complications including of infection and deep vein thrombosis.</p>
Blood tests			
F	Specialised blood tests (troponin) for investigation of chest pain	<i>Troponin blood testing should be used to diagnose acute myocardial infarction only where a clinical diagnosis of acute coronary syndrome is suspected or for prognosis in pulmonary</i>	<p>Troponin testing should be used to diagnose acute myocardial infarction. Troponin testing should only be used in cases where a clinical diagnosis of acute coronary syndrome is suspected or for prognostic purposes when pulmonary embolism is confirmed. Where troponin tests are used for indications other than suspected acute coronary syndrome, they are rarely associated with cardiac disease, cause unnecessary investigations and increase length of hospital stay.</p>



		<i>embolism</i>	
Urology – caring for the parts of the body that make urine			
G	Removal of stones from the kidneys	<i>Shockwave lithotripsy (SWL) or surgical intervention for treatment for kidney stones should only be offered according to this guidance</i>	<p>The optimal management of kidney stones depends on the type, size and location of the stone as well as patient factors such as co-morbidity and pregnancy.</p> <p>Some stones can be observed to see if they pass spontaneously. However, where intervention is indicated, SWL should be considered as first-line treatment unless contraindicated. SWL is non-invasive and therefore has fewer major adverse events than surgery. Where SWL is not appropriate or ineffective, surgical techniques such as ureteroscopy (URS) and percutaneous stone surgery can be considered.</p>
H	Camera test of the bladder in men	<i>Cystoscopy for men with uncomplicated lower urinary tract symptoms (LUTS) should only be offered according to this guidance</i>	<p>Cystoscopy should not be offered routinely offered to men with LUTS. Cystoscopy can cause temporary discomfort, occasionally pain and haematuria and is associated with a small risk of infection.</p> <p>Assessment of men with LUTS should initially focus on a thorough history and examination, complemented by use of a frequency – volume chart, urine dipstick analysis and International Prostate Symptom Score where appropriate. This assessment may be initiated in primary care settings.</p>
I	Surgery for enlarged prostate	<i>Surgical intervention for Benign Prostatic Hypertrophy should only be offered according to this guidance</i>	<p>Surgery should only be offered to men with severe voiding symptoms, or in whom conservative management options and drug treatment have been unsuccessful. Complications of the intervention vary and include discomfort, bleeding, and rarely urinary incontinence.</p> <p>Men considering surgical intervention should be counselled thoroughly regarding alternatives to and outcomes from surgery.</p>
Back pain treatment – caring for the back			
J	Spinal surgery for a slipped disc	<i>Discectomy is only recommended in carefully selected patients according to this guidance</i>	<p>Discectomy should only be offered to patients with compressive nerve root signs and symptoms lasting more than six weeks despite best efforts with non-operative management. Complications of discectomy include dural tear, nerve root damage, bleeding and infection. Generally, the symptoms of radiculopathy will settle with non-operative treatment.</p> <p>Primary care management typically includes reassurance, advice on continuation of activity with modification, weight-loss, analgesia, physiotherapy and screening patients who are high risk of developing chronic pain [i.e. STaRT Back].</p>



Orthopaedics – caring for bones and joints			
K	A procedure to numb nerves for low back pain	<i>Radiofrequency facet joint denervation is rarely indicated</i>	Radiofrequency facet joint denervation is only recommended as an adjunct in the management of chronic lower back pain when non-operative treatment has failed, and the main source of pain is thought to arise from one or more degenerate facet joints. Risks of facet joint injections include bleeding and infection, or rarely nerve or spinal cord damage. Physiotherapy, with appropriate psychological therapies where necessary, should be considered as an early intervention to support the individual.
Cardiology – caring for the heart			
L	Treadmill test for heart disease	<i>Exercise ECG is not recommended for screening for coronary heart disease</i>	Exercise ECG should not be used for screening asymptomatic and low risk patients because it has a very low pre-test probability of identifying pathology. Instead, risk calculators such as Systematic Coronary Risk Evaluation (SCORE) are recommended to identify patients who are at greater risk of Coronary Heart Disease.
Gastroenterology – care of the digestive system			
M	Endoscopy to investigate gut problems	<i>Upper GI endoscopy should not be used as first-line for investigation of suspected gastrointestinal disease</i>	Upper GI endoscopy should not be used as the first-line investigation in all patients. Endoscopy is an invasive procedure that is not always well tolerated and carries significant risks. Endoscopy should be offered only as recommended in guidance from NICE and the British Society for Gastroenterology which are incorporated in this guidance. Non-invasive tests and procedures such as urea breathe testing or stool antigen testing should instead be used as first-line investigation where appropriate.

Table 1B: Interventions including those in diagnostic and outpatient settings where data are available but further exploration of additional datasets is proposed

	Test, treatment or procedure	Recommendation	Summary
Gastroenterology – care of the digestive system			
N	Colonoscopy of the lower intestine	<i>Colonoscopy should only be offered to at risk people identified through risk stratification</i>	Colonoscopy should not be used as first-line investigation in all patients. Colonoscopy is an invasive procedure which carries a small risk of serious complications, for example intestinal perforation. Colonoscopy should be offered only as recommended by British Society for Gastroenterology which is incorporated in this guidance.



			Risk stratification is instead recommended to identify at-risk patients, and non-invasive tests and other procedures such as a Faecal Immunochemical Test (FIT test) should be used as a first-line investigation where appropriate.
O	Follow up colonoscopy of the lower intestine	<i>Surveillance colonoscopy should only be offered to at risk people identified through risk stratification</i>	<p>Surveillance colonoscopy is not always recommended following surgical resection of colorectal lesions. Colonoscopy is an invasive procedure which carries a small risk of serious complications, for example intestinal perforation.</p> <p>Surveillance colonoscopy should be offered only as recommended by the British Society for Gastroenterology which is incorporated in this guidance. Instead, risk stratification is recommended to identify patients who require follow up colonoscopy.</p>
General surgery – operations on the stomach and intestines			
P	Test of the gallbladder	<i>Early endoscopic retrograde cholangiopancreatography (ERCP) is not indicated for investigation of acute gallstone pancreatitis without cholangitis</i>	<p>Early ERCP should not be used in the investigation of acute gallstone pancreatitis where there is no evidence of cholangitis or ongoing obstruction of the biliary tree. ERCP is a highly invasive procedure and includes the risks associated with ERCP such as pancreatitis and bleeding.</p> <p>Clinical observation is instead recommended as many gallstones are passed spontaneously. If there is clinical deterioration, delayed ERCP may be indicated.</p>
Q	Removal of an inflamed gallbladder	<i>Cholecystectomy should be considered on the same admission as acute cholecystitis or gallstone pancreatitis</i>	In patients with acute cholecystitis or gallstone pancreatitis, remove the gallbladder without discharging the patient. This reduces the rate of recurrent gallstone-related complications such as Gram-negative blood stream infections in patients with mild gallstone pancreatitis and carries a very low risk of cholecystectomy-related complications. In patients with mild biliary pancreatitis, same-admission cholecystectomy reduces the rate of recurrent gallstone-related complications significantly from 17% to 5%.
R	Tests to confirm appendicitis	<i>Appendicitis should be confirmed prior to appendicectomy. Imaging is indicated in some patients, with ultrasound as first-line, followed</i>	<p>Where patients present with symptoms of appendicitis, imaging should only be offered if appendicitis is not confirmed after clinical history, physical exam and blood analysis.</p> <p>Where patients present with atypical or equivocal symptoms of appendicitis, imaging should be requested to confirm appendicitis. Ultrasound is preferred as first-line investigation, however CT may be more</p>



		<i>by CT or MRI as appropriate</i>	appropriate in older patients (who have a broader differential diagnosis) or patients with a high BMI (where ultrasound is not possible). MRI should be considered if CT is contraindicated and ultrasound is not possible. Appropriate imaging in line with this guidance can reduce unnecessary surgery and associated complications.
Orthopaedics – caring for bones and joints			
S	Tests to investigate low back pain	<i>Imaging for low back pain is rarely indicated</i>	Imaging for lower back pain should be offered only where serious underlying pathology is suspected. If no red flags are present after evaluation of medical history and examination, imaging should not be offered. Imaging can lead to further unnecessary investigations and treatment, including surgery and increased risk of harm. Instead, conservative management of low back pain including physiotherapy and weight-loss are recommended.
T & U	Tests to investigate knee pain	<i>Knee MRI should not be routinely used to initially investigate knee pain. An MRI scan may be required to identify pathology within the knee in secondary care</i>	<p>MRI for knees is not usually needed in initial management of knee pain, except in the limited circumstances described in this guidance.</p> <p>Where a patient presents with symptoms of knee osteoarthritis or degenerate meniscal tear and no atypical features or red flags are present, an initial diagnosis can be made by clinical assessment only. Non-operative treatment should instead be offered including exercise/therapy, weight loss, bracing, topical or oral analgesia, and intra-articular injections.</p> <p>If imaging is required to confirm the diagnosis of osteoarthritis, weight-bearing radiographs should be the first-line investigation.</p> <p>Patients with persistent arthritic mechanical knee symptoms should be referred to secondary care. In secondary care weight-bearing radiographs are the first-line of investigation. If radiographs show minimal change, then an MRI scan of the knee should be used to investigate early arthritis, isolated cartilage lesions, osteonecrosis or other pathology. If a meniscal tear is suspected, then an MRI scan is the investigation of choice. An MRI scan is also required in some patients who are being investigated in secondary care prior to partial joint replacement.</p>
V	Procedures to build up	<i>Vertebroplasty should not be routinely offered</i>	Vertebroplasty should not be routinely offered as a treatment for painful osteoporotic vertebral fractures. Risks



	brittle spine bones	<i>for painful osteoporotic vertebral fractures</i>	<p>related to vertebroplasty include cement leakage which can cause pulmonary embolism, and nerve or cord compression. The procedure may be complicated by haemorrhage, infection, rib or sternal fracture or haemo- or pneumothorax.</p> <p>Conservative management should instead be offered including pain relief, bracing, and physiotherapy and normal healing takes place over 2-12 weeks.</p>
W	Scans for shoulder pain	<i>Imaging for shoulder pain should be offered under the guidance of shoulder specialists where possible</i>	<p>X-rays are the only appropriate radiological investigations for shoulder pathology in primary, intermediate and secondary care. The use of Ultrasound, MRI and CT scanning is recommended only after consultation with the local specialist shoulder service and using referral pathways developed with the specialist shoulder service.</p> <p>Guided shoulder injections should only be offered in secondary care and with guidance from the specialist shoulder service where possible.</p>
X	MRI scan of the hip for arthritis	<i>MRI scan of the hip for arthritis is not indicated</i>	<p>Do not request a hip MRI when the clinical presentation (history and examination) and X-rays demonstrate typical features of osteoarthritis. MRI scans rarely add useful information to guide diagnosis or treatment.</p> <p>Requesting MRI scans can cause unnecessary anxiety and prolongs waiting times for patients. It can also delay MRI scans for appropriate patients.</p>
Y	Surgery to fuse the bones in the back for back pain	<i>Spinal fusion is not indicated for the treatment of non-specific, mechanical back pain</i>	<p>Fusion of the spine is not recommended as treatment for mechanical axial back pain in the absence of a focal structural pathology and concordant mechanical or neurological symptoms. Complications of the intervention include infection, bleeding and sometimes pseudarthrosis where the fusion doesn't work and back pain returns.</p> <p>Primary care management typically includes reassurance, advice on continuation of activity with modification, weight-loss, analgesia, physiotherapy and screening patients who are high risk of developing chronic pain (i.e. STaRT Back).</p>



Table 1C: Interventions where data are not currently available but are included because best available evidence suggests they are clinically ineffective unless performed in certain circumstances.

Test, treatment or procedure	Recommendation	Summary
Paediatrics – caring for children		
Z	Helmets to reshape flat heads in babies	<p><i>Helmet therapy is not recommended in the treatment of non-synostotic/positional plagiocephaly and brachycephaly in babies</i></p> <p>Helmets should not be used to reshape flat heads in babies because they are not proven to affect the natural course of skull growth. Helmets may be associated with significant risks such as pain and pressure sores and may adversely affect the bond between baby and parents.</p> <p>Instead, pressure can be reduced on the flattened head by changing baby’s position while awake.</p>
Anaesthetics – care before, during and after operations		
A A	Chest X-ray before an operation	<p><i>Routine pre-operative chest X-ray is not indicated</i></p> <p>Pre-operative chest X-rays should not be routinely performed in adult elective surgical patients. They are labour intensive, produce spurious results and may cause anxiety for patients, delays in treatment and further unnecessary investigation or treatment.</p> <p>Pre-operative chest X-rays are appropriate in specific circumstances, for example people undergoing cardiac or thoracic surgery.</p>
B B	Heart tracing (ECG) before an operation	<p><i>Routine pre-operative electrocardiogram (ECG) is not indicated</i></p> <p>Pre-operative ECGs should not be routinely performed in low-risk, non-cardiac, adult elective surgical patients. They are labour intensive and may cause anxiety for patients, delays in treatment and further unnecessary investigation or treatment.</p> <p>Pre-operative ECGs are appropriate in specific circumstances, for example patients with a history of cardiovascular or renal disease, or diabetes.</p>
Blood tests		
C C	Prostate-specific antigen (PSA) testing	<p><i>PSA testing in asymptomatic patients is not recommended</i></p> <p>Routine PSA testing in asymptomatic men is not recommended. This is because the benefits have not been shown to clearly outweigh the harm and testing is known to be associated with potential harms including overdiagnosis, infection and complications of treatment for indolent disease. There is also a high risk of false positives.</p> <p>Where PSA testing is clinically indicated, or requested by the patient, there should (ideally) first be a digital rectal examination, and after careful discussion about the potential risks and benefits of PSA testing</p>



			which allows for shared decision making, a PSA blood test.
D D	Regular blood tests when taking cholesterol lowering tablets	<i>Blood analysis for patients taking lipid lowering therapy should be performed in accordance with this guidance</i>	<p>Creatine Kinase Testing Routine monitoring of creatine kinase is not indicated in asymptomatic people who are taking lipid lowering therapy.</p> <p>Liver Function Testing Routine monitoring of liver function tests in asymptomatic people is not indicated after 12 months of initiating lipid lowering therapy.</p> <p>Lipid Testing Routine monitoring of lipid levels is not always indicated in asymptomatic people after three months of initiating lipid lowering therapy.</p> <p>Consider an annual non-fasting blood test for non-HDL cholesterol to inform discussion.</p>
E E	Blood transfusions	<i>Red blood cell (RBC) transfusions should only be given where indicated and then in single-units unless there are exceptional circumstances</i>	<p>Blood transfusion may be indicated where a patient has a shortage of RBC. NICE recommends restrictive thresholds and single-unit RBC transfusion for adults (or equivalent based on body weight for children or adults with low body weight) who are not actively bleeding, do not have acute coronary syndrome or need regular blood transfusions for chronic anaemia. Restrictive thresholds do not apply to some patients as described in this guidance</p> <p>Potential risks and harms associated with RBC transfusions include pulmonary complications (where two or more RBC units in succession is associated with an increase in pulmonary oedema or transfusion-associated circulatory overload), volume overload and acute transfusion reaction due to allergy. It is safe to give single unit RBC transfusions with a restrictive transfusion trigger.</p>

21. The Committee will revise the list of interventions following any additional feedback received.



Engagement questions

Question 1.

Would you like to make any suggestions of interventions to be included in future guidance? If so, why? Please provide supporting evidence.

Question 2.

Through the EBI programme, what positive and negative impact will the proposed recommendations make to improving access, experience and outcomes for the following groups and how can any risks be mitigated to ensure the changes do not worsen health inequalities for:

- Groups protected under the Equality Act 2010: age; disability; gender reassignment; marriage and civil partnership; pregnancy and maternity; race; religion or belief; sex; sexual orientation?
- Those individuals who experience health inequalities such as people who are homeless or insecurely housed, former prisoners, gypsy, Roma, traveller, veterans and carers?

22. The complete list of questions can be found at www.aomrc.org.uk/ebi and on page 30 of this document



Measurement for additional interventions

23. The list of 31 interventions broadens the scope of the programme by, for example, including diagnostic procedures, and therefore changes our ability to monitor activity. Measurement of these additional interventions is not always as straightforward as for the 17 interventions published in 2018.⁵
24. The agreed Evidence-Based Interventions methodology for monitoring activity is based on calculating the age-sex standardised activity rate of each intervention performed in secondary care settings per 100,000 population.
25. In the context of the list of 17 interventions, for those in Category 1 a target activity goal was set to zero where it can reasonably be expected that no clinically appropriate interventions of this type should be performed without evidence of an IFR having been approved by the relevant Commissioner. We recognise that some interventions may not be suitable for IFRs, for example, due to the urgency of clinical need or funding pathways.
26. Of the list of 31 interventions, there are two Category 1 interventions (exercise ECG and helmet therapy) and the remaining 29 are Category 2 interventions. The nature of the two Category 1 interventions and the data quality underpinning them is limited. They do not lend themselves to the level of measurement established by the programme because diagnostic codes cannot be identified for either procedure, nor are they suitable for tariff changes. Using IFRs to implement the guidance for these two procedures may be challenging [for further detail see Appendix 5].
27. In line with aims and objectives of the programme to reduce patient harm and free up clinical time, it is recognised that for Category 2 interventions there is inappropriate activity at population level and the benefits of interventions should outweigh the risks. While there is limited empirical evidence for clinically appropriate rates of intervention at a population level, through public consultation in 2018 and based on comparable international practice, an activity goal was set at the 25th percentile of age-sex standardised rate of intervention across CCGs.
28. Based on the above methodology, for 13 interventions data are sufficiently robust to outline suggested activity levels. On that basis a total of 358,083 spells of activity need not be reinstated from a total pre-COVID-19 activity level of 859,242. There are considerably more inappropriate interventions being performed for which data are sufficient to establish total volume, but not sufficient to track activity levels. The total volume of that remaining activity is at least 921,765

⁵ For the initial list of 17 interventions, a review on the clinical codes underlying the interventions was performed in February 2020. A summary of the proposed coding changes by interventions, the rationale for the recommended change and the impact of the change on the data can be found at <https://www.nhsbsa.nhs.uk/epact2/dashboards-and-specifications/evidence-based-interventions>.



spells. For those interventions where data is not sufficient to a goal, we welcome feedback on how to improve the data, for example, by using the Diagnostic Imaging Dataset.

29. The following tables contain a summary of the data and data quality issues for the 31 interventions. For further detail see Appendix 5.

Table 2A: Interventions where data are sufficiently robust⁶ to determine rates of variation and set national activity goals.

Description	No. of spells - 2018/19	Age / sex std rate per 100,000 - 2018/19	CCG Variation (n-fold) ⁷	Activity reduction opportunity [based on 25 th percentile] ⁸	Comments [including future actions to improve data / coding]
A. Diagnostic angiogram should not be used as first-line investigation for low risk, stable chest pain	26,629	44.8	3.2	9,529	Invasive angiogram data coding sufficient to set a goal but exploring options to improve data on coronary CT scans through Diagnostic Imaging Datasets later this year.
B. Repair of minimally symptomatic inguinal hernia is not indicated	56,457	95	1.6	7,891	Considered sufficiently robust to set a goal.
C. Surgical intervention for chronic sinusitis is rarely indicated	3,914	6.6	3.9	1,568	Considered sufficiently robust to set a goal.
D. Removal of the adenoids is rarely indicated	1,921	3.2	8.0	1,131	Considered sufficiently robust to set a goal.
E. Arthroscopic surgery for meniscal tears should be performed following the published BASK clinical guidelines	38,106	64.1	2.7	10,597	Considered sufficiently robust to set a goal.
F. Troponin blood testing should be used to diagnose acute myocardial infarction only where a clinical diagnosis of acute coronary syndrome is suspected or for prognosis in pulmonary embolism	577,538	972.1	2.3 ⁹	229,114	Uses Emergency Care Data Set (ECDS) data. This is a relatively new data collection set with incomplete data reporting.

⁶ In general, the procedure and diagnostic codes have been identified and therefore deemed robust enough to determine rates and goals. However, there are certain limitations unique to each intervention which are set out for each intervention in the 'limitations of data/coding' section in Appendix 5 tables.

⁷ The n-fold variation calculation is the ratio between the 10th highest (90th percentile) and 10th lowest (10th percentile) age-sex standardised rate between CCGs.

⁸ The activity reduction opportunity figure refers to the reduction in number of procedures required to reach the goal from the number of spells in 2018/19. The goal is set at the 25th percentile of all CCGs.

⁹ For two interventions (F – troponin testing and K – radiofrequency facet joint denervation), CCGs with zero activity were excluded in the n-fold (CCG variation calculation).



G. Shockwave lithotripsy (SWL) or surgical intervention for treatment for kidney stones should only be offered according to this guidance	14,457 ¹⁰	24.3	2.1	3,220	Considered sufficiently robust to set a goal.
H. Cystoscopy for men with uncomplicated lower urinary tract symptoms (LUTS) should only be offered according to this guidance	50,685	85.3	11.7	31,687	Considered sufficiently robust to set a goal, though due to the high rate of intervention at the 90 th percentile, the 25 th percentile-based reduction opportunity is large.
I. Surgical intervention for Benign Prostatic Hypertrophy (BPH) should only be offered according to this guidance	14,562	24.5	2.4	4,096	Considered sufficiently robust to set a goal.
J. Discectomy is only recommended in carefully selected patients according to this guidance	3,488	5.9	6.7	1,942	Considered sufficiently robust to set a goal
K. Radiofrequency facet joint denervation is rarely indicated	1,618	2.7	21.6 ¹¹	1,247	Considered sufficiently robust to set a goal, however exploring the option of using additional data such as Diagnostic Imaging Dataset (DIDs), expected to be available later this year.
L. Exercise electrocardiogram (ECG) is not recommended for screening for coronary heart disease	49,095	82.6	14.5	49,095	A 'do not do' intervention according to NICE guidelines and therefore activity should be zero. However, outpatient data is not sufficiently robust to code diagnoses for this procedure.
M. Upper GI endoscopy should not be used as first-line for investigation of suspected gastrointestinal disease	20,772	35.0	2.7	6,966	Considered sufficiently robust to set a goal, however exploring the option of using additional data such as DIDs, expected to be available later this year.

¹⁰ This figure represents percutaneous nephrolithotomy and endoscopic extraction of calculus of kidney. See Appendix 5 for further details.

¹¹ For two interventions (F – troponin testing and K – radiofrequency facet joint denervation), CCGs with zero activity were excluded in the n-fold (CCG variation calculation).



Table 2B: Interventions including those in diagnostic and outpatient settings where data are available but further exploration of additional datasets is proposed.¹²

Description	No. of spells - 2018/19	Age / sex std rate per 100,000 – 2018/19	CCG Variation (n-fold)	Activity reduction opportunity [based on 25 th percentile]	Comments [including future actions to improve data / coding]
N. Colonoscopy should only be offered to at risk people identified through risk stratification	445,981	750.7	1.5	-	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures. Exploring the option of using additional datasets.
O. Surveillance colonoscopy should only be offered to at risk people identified through risk stratification					
P. Early endoscopic retrograde cholangiopancreatography (ERCP) is not indicated for investigation of acute gallstone pancreatitis without cholangitis	310	0.5	Not calculated ¹³	-	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures as figure appears low. Exploring the option of using additional data such as DIDs, expected to be available later this year.
Q. Cholecystectomy should be considered on the same admission as acute cholecystitis or gallstone pancreatitis	2,085	3.5	6.4	-	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures as figure appears low. This may not represent all cases of elective cholecystectomy following acute admission. Exploring longitudinal analysis to improve data.
R. Appendicitis should be confirmed prior to appendicectomy. Where imaging is indicated in some patients, with ultrasound as first-line, followed by CT or MRI as appropriate	47,605 ¹⁴	80.1	1.6	-	Appendicectomy data coding sufficient but we are unable to identify which appendicectomies have been supported by a confirm diagnosis. Exploring options to improve data on imaging

¹² For these intervention data, procedure coding is available however diagnosis and indication coding is either partial or has limitations (see Appendix 5 tables for each intervention) therefore it was inappropriate to calculate goals for these interventions.

¹³ The CCG n-fold figure is calculated by dividing the 90th percentile of CCGs by the 10th percentile of CCGs. For some interventions, the 10th percentile of CCGs is zero making it impossible to calculate the figure.

¹⁴ This figure represents appendicectomies performed. See Appendix 5 for further detail.



					through DIDs data later this year.
S. Imaging for low back pain is rarely indicated	253,957 ¹⁵	427.5	59.8	-	Currently there is no diagnostic data in outpatients so indication for low back pain imaging not clear. Exploring the option of using additional data, such as DIDs, expected to be available later this year.
T. Knee MRI should not be used to diagnose osteoarthritis	80,808	136.0	105.9	-	Currently there is no diagnostic data in outpatients so indication for knee MRI is not clear. Exploring the option of using additional data, such as DIDs, expected to be available later this year.
U. Knee MRI should not be used to diagnose meniscal tears					
V. Vertebroplasty should not be routinely offered for painful osteoporotic vertebral fractures	304	0.5	Not calculated ¹⁶	-	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures. Figures appear low and are subject to further analysis.
W. Imaging for shoulder pain should be offered under the guidance of shoulder specialists where possible	75,388	126.9	84.2		Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures. Exploring the option of using additional data, such as DIDs, expected to be available later this year.
X. MRI scan of the hip for arthritis is not indicated	15,286	25.7	46.1	-	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures. Exploring the option of using additional data, such as DIDs, expected to be available later this year.

¹⁵ This figure includes US, MRI, CT and XR. See Appendix 5 for further detail.

¹⁶ The n-fold variation calculation is the ratio between the 10th highest (90th percentile) and 10th lowest (10th percentile) age-sex standardised rate between CCGs. For interventions where the age-sex standardised rate in the 10th percentile is zero, the n-fold variation was not calculated. Refer to the activity variation histogram across CCGs to observe the variation visually in Appendix 7.



Y. Spinal fusion is not indicated for the treatment of non-specific, mechanical back pain	41 ¹⁷	0.1	Not calculated ¹⁸	-	Unable to identify diagnosis and procedure codes and therefore produce reliable activity figures.
Sub-total – for this category of intervention	921,765	-	-	-	-

Table 2C: Interventions where data are not currently available but propose including because best available evidence suggests interventions are clinically ineffective unless performed in certain circumstances.

Description	No. of spells - 2018/19	Age / sex std rate per 100,000 – 2018/19	CCG Variation (n-fold)	Activity reduction opportunity [based on 25 th percentile]	Comments [including future actions to improve data / coding]
Z. Helmet therapy is not recommended in the treatment of non-synostotic/ positional plagiocephaly and brachycephaly in babies	See footnotes ¹⁹ ²⁰	-	-	-	A 'do not do' intervention according to NICE guidelines and therefore activity levels should be zero. Currently there is no diagnostic data in outpatients so indication for helmet therapy is not clear. However, it is rarely recommended, and numbers are thought to be low.
AA. Routine pre-operative chest X-ray is not indicated	-	-	-	-	Unable to accurately identify diagnostic and procedure codes and produce activity figures. Exploring the option of using linked Diagnostic Imaging Dataset (DIDs) data, expected to be available later this year.
BB. Routine pre-operative electrocardiogram is not indicated	-	-	-	-	Unable to accurately identify diagnostic and procedure codes and produce activity figures. Exploring the option of using additional data, such as DIDs, expected to be available later this year.

¹⁷ According to the methodology agreed by the EAC, interventions with fewer than 300 episodes per annum are considered too low to set an activity goal.

¹⁸ The n-fold variation calculation is the ratio between the 10th highest (90th percentile) and 10th lowest (10th percentile) age-sex standardised rate between CCGs. For interventions where the age-sex standardised rate in the 10th percentile is zero, the n-fold variation was not calculated. Refer to the activity variation histogram across CCGs to observe the variation visually in Appendix 7.

¹⁹ Interventions with fewer than 300 episodes per annum are considered too low to set an activity goal.

²⁰ For interventions with fewer than 10 episodes during 2018/19, the number was not included.



CC. Prostate-specific antigen (PSA) testing in asymptomatic men is not recommended	-	-	-	-	Unable to identify diagnosis and procedure codes and therefore produce activity figures. Exploring option of using alternative such as Patient Level Information Costing (PLICS) data.
DD. Blood analysis for patients taking lipid lowering therapy should be performed in accordance with this guidance	-	-	-	-	Unable to identify diagnosis and procedure codes and therefore produce activity figures. Exploring option of using alternative such as PLICS data.
EE. Red blood cell (RBC) transfusions should only be given where indicated and then in single-units unless there are exceptional circumstances	-	-	-	-	Unable to identify diagnosis and procedure codes and therefore produce activity figures. Exploring option of using alternative data such as NHS Blood and Transplant data.

Engagement Question

Question 3.

Do you agree with the Coding Methodology and Summary described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.

30. Further information on how we have calculated the activity as well as the codes underpinning the activity figures (where available) can be found in Appendices 5 and 6.
31. Additionally, proposed activity goals and variation graphs for CCGs and ICSs can be found in Appendix 7, along with monthly activity data from January to April 2020 which show the impact of COVID-19 on the list of 31 interventions in Appendix 8.



Putting the guidance into practice

32. The Committee recognises that putting the EBI guidance into practice requires strong local leadership, clinical acumen and a focus on delivering evidence-based care. Collaboration between clinicians, commissioners, providers and patients is needed across ICSs/STPs. As with the list of 17 interventions, the expectation is that local clinical governance arrangements should oversee implementation with the support of Regional Medical Directors. All CCGs, providers and ICSs/STPs should take active steps to reduce the number of inappropriate interventions.
33. The emphasis of the programme continues to focus on behaviour change and meaningful engagement with those responsible for providing frontline care. Indeed, this list has a greater requirement for commissioners, providers and patients to share learning and undertake peer-to-peer support to encourage a collaborative approach to putting guidance into practice.
34. The implementation framework developed for the list of 17 is broad and included amendments to the NHS Standard Contract, updates to planning guidance and the inclusion of EBI in the CQC well-led inspection framework. Due to COVID-19, however, much of this activity has been suspended until further notice.
35. Once views and opinions on the 31 interventions are collated the Committee will make a final recommendation to the four national programme partners. The medical royal colleges and specialist societies will disseminate further information to members of their Associations and Colleges on implementing the criteria via their communications channels. Clinical champions will be identified across the health and care system to support spread and adoption across the system.
36. Engagement with GPs, as well as provider clinicians, will be key to testing implementation. Clearly GPs will need to be familiar with the guidance when making referrals. Work will continue with Royal College of General Practitioners to ensure the changes are communicated directly to GPs, including collaboration with frontline GPs from the Demonstrator Community to understand how implementation in primary care settings is proceeding.



How to get involved

37. The engagement period will run from 13 July 2020 to 24 August 2020. Following close of the engagement, the Committee will analyse and consider all responses received to inform a final recommendation.

How to provide feedback

38. If you would like to respond to this engagement you can do so by:

1. Using the online web-form at:

<https://www.aomrc.org.uk/ebi> Questions from the online form are listed in the next section.

2. Written responses can also be submitted to:

ebi@aomrc.org.uk. Please note that we will not be able to respond to every response individually.

39. In addition, we will be holding virtual engagement sessions to gather further clinical, professional and patient views. This will include webinars to discuss the proposals:
- Series of three webinars covering each of the 31 interventions grouped by speciality;
 - Series of three webinars specifically for patients; and
 - A data-focused webinar.

To register your interest, please email: ebi@aomrc.org.uk

40. The Committee are grateful to individuals and organisations who take the time to respond.
41. Further details will be communicated and available on the Academy website in due course.



Summary of engagement questions

42. Please note this is an adapted version of a questionnaire designed for a web page. To view the questionnaire in its intended format and submit responses please visit: <https://www.aomrc.org.uk/ebi/>
43. We will publish a summary of the responses we receive to this engagement in due course.
44. Please be aware that the summary may include details taken from any area of the engagement response so please bear this in mind when providing your comments.
45. If you would prefer any part of your response is kept confidential (i.e. not published), please let us know and make this clear by marking in your response which parts should remain confidential.

In what capacity are you responding?

- Clinician
- CCG
- STP / ICS
- NHS provider organisation
- Patient / member of the public
- Patient representative organisation
- VSO / charity
- National Body
- Other (please specify)

Have you read the document: *Evidence-Based Interventions: Engagement Document?*

- Yes
- No

Questions on the EBI programme

Question 1. Would you make any suggestions of interventions to be included in future guidance? If so, why? Please provide supporting evidence.

Question 2. Through the EBI programme, what positive and negative impact will the proposed recommendations make to improving access, experience and outcomes for the following groups and how can any risks be mitigated to ensure the changes do not worsen health inequalities for:



- groups protected under the Equality Act 2010: age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, sexual orientation?
- those individuals who experience health inequalities such as people who are homeless or insecurely housed, former prisoners, gypsy, Roma, traveller, veterans and carers?

Question 3. Do you agree with the Coding Methodology and Summary described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.

Question 4. Please answer any questions which you feel apply to you from the following [multiple questions on each intervention]:

Test, treatment or procedure		Questions on Individual Interventions	
Cardiology – care of the heart			
A	<p>Invasive angiogram to investigate stable chest pain</p> <p><i>Diagnostic angiogram should not be used as first-line investigation for low risk, stable chest pain</i></p> <p>Invasive diagnostic angiogram should not be used as the first-line investigation in patients with low-risk, stable chest pain where clinical assessment alone cannot exclude a diagnosis of stable angina. Invasive angiogram can sometimes cause haematoma and exposes the patient to radiation. Instead, CT coronary angiography should be offered as first-line investigation. This test is safe, reliable and exposes the patient to a lower dose of radiation.</p> <p>Invasive coronary angiography should be offered to patients with significant findings on CT coronary angiogram, or where indicated by further non-invasive imaging.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>	
General surgery			
B	<p>Surgery for inguinal hernia</p> <p><i>Repair of minimally symptomatic inguinal hernia is not indicated</i></p> <p>Repair of minimally symptomatic hernia is not appropriate. Delaying surgical repair until symptoms increase is acceptable. Acute hernia incarcerations occur rarely and patients who develop symptoms have no greater risk of operative</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p>	



	<p>complications than those undergoing prophylactic hernia repair.</p> <p>Watchful waiting is a safe option for people with minimally symptomatic inguinal hernias. Many people with an inguinal hernia are asymptomatic or minimally symptomatic and may never need surgery.</p>	<p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
Anaesthetics – Care before, during and after operations		
<p>C</p>	<p>Surgery for sinusitis</p> <p><i>Surgical intervention for chronic sinusitis is rarely indicated</i></p> <p>Endoscopic sinus surgery should only be considered where medical treatment has failed. Surgery carries some risks that include bleeding, infection, scar tissue formation, and very rarely orbital injuries or cerebrospinal fluid leak (with associated risk of meningitis). There is also a risk of recurrent symptoms and ongoing medical treatment to maintain symptom improvement after endoscopic sinus surgery.</p> <p>First-line treatment for sinusitis is with maximal medical therapy which should include intranasal steroids and nasal saline irrigation. In the case of Chronic rhinosinusitis with Nasal Polyposis (CRSwNP) a trial of a short course of oral steroids should also be considered</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
<p>D</p>	<p>Removal of the adenoids</p> <p><i>Removal of the adenoids is rarely indicated</i></p> <p>NICE guidance recommends that adjuvant adenoidectomy should not be performed for the treatment of glue ear in the absence of persistent and/or frequent upper respiratory tract symptoms. The benefit in hearing compared to grommets alone is very limited. Risks of adenoidectomy</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p>



	<p>include damage to teeth, lips or gums, bleeding (usually only minor and self-resolving), and rarely speech problems.</p> <p>Adenoidectomy is indicated in some children as described in this guidance, for example where the child has persistent and/or frequent upper respiratory tract symptoms.</p>	<p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
Orthopaedics – caring for bones and joints		
E	<p>Surgery to treat knee problems</p> <p><i>Arthroscopic surgery for meniscal tears should be performed following the published BASK clinical guidelines</i></p> <p>Most patients with a degenerate meniscal tear should not have arthroscopic meniscectomy as first-line treatment but should instead be treated non-operatively. Non-operative treatment is highly effective and may involve patient education, physiotherapy, weight-loss interventions and muscle strengthening exercises. Paracetamol and topical NSAIDs should be first-line pharmacological management strategies. Many patients treated this way will improve and do not require surgery.</p> <p>However, in the following situations arthroscopic meniscal surgery is indicated: patients with a repairable meniscal tear, patients with a locked knee, and patients with mechanical symptoms and a MRI proven unstable meniscal tear that does not respond to three months of non-operative treatment.</p> <p>Arthroscopic meniscectomy carries a small risk of serious complications including of infection and deep vein thrombosis.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>



Blood tests		
F	<p>Specialised blood tests [troponin] for investigation of chest pain</p> <p><i>Troponin blood testing should be used to diagnose acute myocardial infarction only where a clinical diagnosis of acute coronary syndrome is suspected or for prognosis in pulmonary embolism</i></p> <p>Troponin testing should be used to diagnose acute myocardial infarction. Troponin testing should only be used in cases where a clinical diagnosis of acute coronary syndrome is suspected or for prognostic purposes when pulmonary embolism is confirmed. Where troponin tests are used for indications other than suspected acute coronary syndrome, they are rarely associated with cardiac disease, cause unnecessary investigations and increase length of hospital stay.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
Urology – caring for the parts of the body that make urine		
G	<p>Removal of stones from the kidneys</p> <p><i>Shockwave lithotripsy (SWL) or surgical intervention for treatment for kidney stones should only be offered according to this guidance</i></p> <p>The optimal management of kidney stones depends on the type, size and location of the stone as well as patient factors such as co-morbidity and pregnancy.</p> <p>Some stones can be observed to see if they pass spontaneously. However, where intervention is indicated, SWL should be considered as first-line treatment unless contraindicated. SWL is non-invasive and therefore has fewer major adverse events than surgery. Where SWL is not appropriate or ineffective, surgical techniques such</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an</p>



	<p>as ureteroscopy (URS) and percutaneous stone surgery can be considered.</p>	<p>explanation and/or supporting evidence, if possible.</p>
H	<p>Camera test of the bladder in men</p> <p><i>Cystoscopy for men with uncomplicated lower urinary tract symptoms (LUTS) should only be offered when clinically indicated according to this guidance</i></p> <p>Cystoscopy should not be offered routinely offered to men with LUTS. Cystoscopy can cause temporary discomfort, occasionally pain and haematuria and is associated with a small risk of infection.</p> <p>Assessment of men with LUTS should initially focus on a thorough history and examination, complemented by use of a frequency – volume chart, urine dipstick analysis and International Prostate Symptom Score where appropriate. This assessment may be initiated in primary care settings.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
I	<p>Surgery for enlarged prostate</p> <p><i>Surgical intervention for Benign Prostatic Hypertrophy should only be offered according to this guidance</i></p> <p>Surgery should only be offered to men with severe voiding symptoms, or in whom conservative management options and drug treatment have been unsuccessful. Complications of the intervention vary and include discomfort, bleeding, and rarely urinary incontinence.</p> <p>Men considering surgical intervention should be counselled thoroughly regarding alternatives to and outcomes from surgery.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an</p>



		explanation and/or supporting evidence, if possible.
Back pain treatment – caring for the back		
J	<p>Spinal surgery for a slipped disc</p> <p><i>Discectomy is only recommended in carefully selected patients according to this guidance</i></p> <p>Discectomy should only be offered to patients with compressive nerve root signs and symptoms lasting more than six weeks despite best efforts with non-operative management. Complications of discectomy include dural tear, nerve root damage, bleeding and infection. Generally, the symptoms of radiculopathy will settle with non-operative treatment.</p> <p>Primary care management typically includes reassurance, advice on continuation of activity with modification, weight-loss, analgesia, physiotherapy and screening patients who are high risk of developing chronic pain (i.e. STaRT Back).</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
Orthopaedics – caring for bones and joints		
K	<p>A procedure to numb nerves for low back pain</p> <p><i>Radiofrequency facet joint denervation is rarely indicated</i></p> <p>Radiofrequency facet joint denervation is only recommended as an adjunct in the management of chronic lower back pain when non-operative treatment has failed, and the main source of pain is thought to arise from one or more degenerate facet joints. Risks of facet joint injections include bleeding and infection or rarely nerve or spinal cord damage.</p> <p>Physiotherapy, with appropriate psychological therapies where necessary, should be considered as an</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p>



	early intervention to support the individual.	IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.
Cardiology – caring for the heart		
L	<p>Treadmill test for heart disease</p> <p>Exercise ECG is not recommended for screening for coronary heart disease</p> <p>Exercise ECG should not be used for screening asymptomatic and low risk patients because it has a very low pre-test probability of identifying pathology. Instead, risk calculators such as Systematic Coronary Risk Evaluation (SCORE) are recommended to identify patients who are at greater risk of Coronary Heart Disease.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any vulnerable group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
Gastroenterology – care of the digestive system		
M	<p>Endoscopy to investigate gut problems</p> <p><i>Upper GI endoscopy should not be used as first-line for investigation of suspected gastrointestinal disease</i></p> <p>Upper GI endoscopy should not be used as the first-line investigation in all patients. Endoscopy is an invasive procedure that is not always well tolerated and carries significant risks. Endoscopy should be offered only as recommended in guidance from NICE and the British Society for Gastroenterology which are incorporated in this guidance.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or</p>



	<p>Non-invasive tests and procedures such as urea breathe testing or stool antigen testing should instead be used as first-line investigation where appropriate.</p>	<p>those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
N	<p>Colonoscopy of the lower intestine</p> <p><i>Colonoscopy should only be offered to at risk people identified through risk stratification</i></p> <p>Colonoscopy should not be used as first-line investigation in all patients. Colonoscopy is an invasive procedure which carries a small risk of serious complications, for example intestinal perforation. Colonoscopy should be offered only as recommended by British Society for Gastroenterology which is incorporated in this guidance.</p> <p>Risk stratification is instead recommended to identify at-risk patients, and non-invasive tests and other procedures such as a Faecal Immunochemical Test (FIT test) should be used as a first-line investigation where appropriate.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
O	<p>Follow up colonoscopy of the lower intestine</p> <p><i>Surveillance colonoscopy should only be offered to at risk people identified through risk stratification</i></p> <p>Surveillance colonoscopy is not always recommended following surgical resection of colorectal lesions. Colonoscopy is an invasive procedure which carries a small risk of serious complications, for example intestinal perforation.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or</p>



	<p>Surveillance colonoscopy should be offered only as recommended by the British Society for Gastroenterology which is incorporated in this guidance. Instead, risk stratification is recommended to identify patients who require follow up colonoscopy.</p>	<p>those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
<p>General Surgery – operations on the stomach and intestines</p>		
<p>P</p>	<p>Test of the gallbladder</p> <p><i>Early endoscopic retrograde cholangiopancreatography (ERCP) is not indicated for investigation of acute gallstone pancreatitis without cholangitis</i></p> <p>Early ERCP should not be used in the investigation of acute gallstone pancreatitis where there is no evidence of cholangitis or ongoing obstruction of the biliary tree. ERCP is a highly invasive procedure and includes the risks associated with ERCP such as pancreatitis and bleeding.</p> <p>Clinical observation is instead recommended as many gallstones are passed spontaneously. If there is clinical deterioration, delayed ERCP may be indicated.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
<p>Q</p>	<p>Removal of an inflamed gallbladder</p> <p><i>Cholecystectomy should be considered on the same admission as acute cholecystitis or gallstone pancreatitis</i></p> <p>In patients with acute cholecystitis or gallstone pancreatitis, remove the gallbladder without discharging the patient. This reduces the rate of recurrent gallstone related complications such as Gram-negative blood stream infections in patients with mild gallstone pancreatitis and carries a very low risk of cholecystectomy-</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group</p>



	<p>related complications. In patients with mild biliary pancreatitis, same-admission cholecystectomy reduces the rate of recurrent gallstone-related complications significantly from 17% to 5%.</p>	<p>protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
R	<p>Tests to confirm appendicitis</p> <p><i>Appendicitis should be confirmed prior to appendicectomy. Imaging is indicated in some patients, with ultrasound as first-line, followed by CT or MRI as appropriate</i></p> <p>Where patients present with symptoms of appendicitis, imaging should only be offered if appendicitis is not confirmed after clinical history, physical exam and blood analysis.</p> <p>Where patients present with atypical or equivocal symptoms of appendicitis, imaging should be requested to confirm appendicitis. Ultrasound is preferred as first-line investigation, however CT may be more appropriate in older patients (who have a broader differential diagnosis) or patients with a high BMI (where ultrasound is not possible). MRI should be considered if CT is contraindicated and ultrasound is not possible. Appropriate imaging in line with this guidance can reduce unnecessary surgery and associated complications.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
Orthopaedics – caring for bones and joints		
S	<p>Tests to investigate low back pain</p> <p><i>Imaging for low back pain is rarely indicated</i></p> <p>Imaging for lower back pain should be offered only where serious underlying pathology is suspected. If no red flags are present after evaluation of medical history and examination, imaging</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or</p>



	<p>should not be offered. Imaging can lead to further unnecessary investigations and treatment, including surgery and increased risk of harm. Instead, conservative management of low back pain including physiotherapy and weight-loss are recommended.</p>	<p>supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
<p>T & U</p>	<p>Tests to investigate knee pain</p> <p><i>Knee MRI should not be routinely used to initially investigate knee pain. An MRI scan may be required to identify pathology within the knee in secondary care</i></p> <p>MRI for knees is not usually needed in initial management of knee pain, except in the limited circumstances described in this guidance. Where a patient presents with symptoms of knee osteoarthritis or degenerate meniscal tear and no atypical features or red flags are present, an initial diagnosis can be made by clinical assessment only. Non-operative treatment should instead be offered including exercise/therapy, weight loss, bracing, topical or oral analgesia, and intra-articular injections.</p> <p>If imaging is required to confirm the diagnosis of osteoarthritis, weight-bearing radiographs should be the first-line investigation.</p> <p>Patients with persistent arthritic mechanical knee symptoms should be referred to secondary care. In secondary care weight-bearing radiographs are the first-line of investigation. If radiographs show</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>



	<p>minimal change, then an MRI scan of the knee should be used to investigate early arthritis, isolated cartilage lesions, osteonecrosis or other pathology. If a meniscal tear is suspected, then an MRI scan is the investigation of choice. An MRI scan is also required in some patients who are being investigated in secondary care prior to partial joint replacement.</p>	
V	<p>Procedures to build up brittle spine bones</p> <p><i>Vertebroplasty should not be routinely offered for painful osteoporotic vertebral fractures</i></p> <p>Vertebroplasty should not be routinely offered as a treatment for painful osteoporotic vertebral fractures. Risks related to vertebroplasty include cement leakage which can cause pulmonary embolism, and nerve or cord compression. The procedure may be complicated by haemorrhage, infection, rib or sternal fracture or haemo- or pneumothorax.</p> <p>Conservative management should instead be offered including pain relief, bracing, and physiotherapy and normal healing takes place over 2-12 weeks.</p>	<ol style="list-style-type: none">I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.
W	<p>Scans for shoulder pain</p> <p><i>Imaging for shoulder pain should be offered under the guidance of shoulder specialists where possible</i></p> <p>X-rays are the only appropriate radiological investigations for shoulder pathology in primary, intermediate and secondary care. The use of Ultrasound, MRI and CT scanning is recommended only after consultation with the local specialist shoulder service and using</p>	<ol style="list-style-type: none">I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.III. What positive or negative impact will these changes make to access,



	<p>referral pathways developed with the specialist shoulder service.</p> <p>Guided shoulder injections should only be offered in secondary care and with guidance from the specialist shoulder service where possible.</p>	<p>experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
X	<p>MRI scan of the hip for arthritis</p> <p><i>MRI scan of the hip for arthritis is not indicated</i></p> <p>Do not request a hip MRI when the clinical presentation (history and examination) and X-rays demonstrate typical features of osteoarthritis. MRI scans rarely add useful information to guide diagnosis or treatment.</p> <p>Requesting MRI scans can cause unnecessary anxiety and prolongs waiting times for patients. It can also delay MRI scans for appropriate patients.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
Y	<p>Surgery to fuse the bones in the back for back pain</p> <p><i>Spinal fusion is not indicated for the treatment of non-specific, mechanical back pain</i></p> <p>Fusion of the spine is not recommended as treatment for mechanical axial back pain in the absence of a focal structural pathology and concordant mechanical or neurological symptoms. Complications of the intervention include infection,</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access,</p>



	<p>bleeding and sometimes pseudarthrosis where the fusion doesn't work and back pain returns.</p> <p>Primary care management typically includes reassurance, advice on continuation of activity with modification, weight-loss, analgesia, physiotherapy and screening patients who are high risk of developing chronic pain (i.e. STaRT Back).</p>	<p>experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
Paediatrics – caring for children		
Z	<p>Helmets to reshape flat heads in babies</p> <p><i>Helmet therapy is not recommended in the treatment of non-synostotic/positional plagiocephaly and brachycephaly in babies</i></p> <p>Helmets should not be used to reshape flat heads in babies because they are not proven to affect the natural course of skull growth. Helmets may be associated with significant risks such as pain and pressure sores and may adversely affect the bond between baby and parents.</p> <p>Instead, pressure can be reduced on the flattened head by changing baby's position while awake.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
Anaesthetics – care before, during and after operations		
AA	<p>Chest X-ray before an operation</p> <p><i>Routine pre-operative chest x-ray is not indicated</i></p> <p>Pre-operative chest X-rays should not be routinely performed in adult elective surgical patients. They are labour intensive, produce spurious results and may cause anxiety for patients, delays</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p>



	<p>in treatment and further unnecessary investigation or treatment.</p> <p>Pre-operative chest X-rays are appropriate in specific circumstances, for example people undergoing cardiac or thoracic surgery.</p>	<p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
BB	<p>Heart tracing (ECG) before an operation</p> <p><i>Routine pre-operative electrocardiogram (ECG) is not indicated</i></p> <p>Pre-operative ECGs should not be routinely performed in low-risk, non-cardiac, adult elective surgical patients. They are labour intensive and may cause anxiety for patients, delays in treatment and further unnecessary investigation or treatment.</p> <p>Pre-operative ECGs are appropriate in specific circumstances, for example patients with a history of cardiovascular or renal disease, or diabetes.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
Blood tests		
CC	<p>Prostate-specific antigen (PSA) testing</p> <p><i>PSA testing in asymptomatic men is not recommended</i></p> <p>Routine PSA testing in asymptomatic men is not recommended. This is because the benefits have not been shown to clearly outweigh the harm and testing is known to be associated</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or</p>



	<p>with potential harms including overdiagnosis, infection and complications of treatment for indolent disease. There is also a high risk of false positives.</p> <p>Where PSA testing is clinically indicated, or requested by the patient, there should (ideally) first be a digital rectal examination, and after careful discussion about the potential risks and benefits of PSA testing which allows for shared decision making, a PSA blood test.</p>	<p>supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
DD	<p>Regular blood tests when taking cholesterol lowering tablets</p> <p><i>Blood analysis for patients taking lipid monitoring lowering therapy should be performed in accordance with this guidance</i></p> <p>Creatine Kinase Testing Routine monitoring of creatine kinase is not indicated in asymptomatic people who are taking lipid lowering therapy.</p> <p>Liver Function Testing Routine monitoring of liver function tests in asymptomatic people is not indicated after 12 months of initiating lipid lowering therapy.</p> <p>Lipid Testing Routine monitoring of lipid levels is not always indicated in asymptomatic people after three months of initiating lipid lowering therapy.</p> <p>Consider an annual non-fasting blood test for non-HDL cholesterol to inform discussion.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>



<p>EE</p>	<p>Blood transfusions</p> <p><i>Red blood cell (RBC) transfusions should only be given where indicated and then in single-units unless there are exceptional circumstances</i></p> <p>Blood transfusion may be indicated where a patient has a shortage of RBC. NICE recommends restrictive thresholds and single-unit RBC transfusion for adults (or equivalent based on body weight for children or adults with low body weight) who are not actively bleeding, do not have acute coronary syndrome or need regular blood transfusions for chronic anaemia. Restrictive thresholds do not apply to some patients as described in this guidance</p> <p>Potential risks and harms associated with RBC transfusions include pulmonary complications (where two or more RBC units in succession is associated with an increase in pulmonary oedema or transfusion-associated circulatory overload), volume overload and acute transfusion reaction due to allergy. It is safe to give single unit RBC transfusions with a restrictive transfusion trigger.</p>	<p>I. Do you have any suggested changes to the proposed clinical guidance? Could you please provide supporting evidence, if possible?</p> <p>II. Do you agree with the suggested approach to setting the threshold and implementing the recommendation? Please provide an explanation and/or supportive evidence, including suggested data sets, if possible.</p> <p>III. What positive or negative impact will these changes make to access, experience and outcomes for any group protected under the Equality Act 2010 or those individuals who experience health inequalities?</p> <p>IV. Do you agree with the suggested codes to measure activity described in Appendix 5? Please provide an explanation and/or supporting evidence, if possible.</p>
-----------	---	---

Appendix 1

Glossary

AoMRC	Academy of Medical Royal Colleges
CCG	Clinical Commissioning Group
CQC	Care Quality Commissioner
CQUIN	Commissioning for Quality and Innovation
ENT	Ear, Nose and Throat
GIRFT	Getting it Right First Time
IAF	Improvement and Assessment Framework
ICS	Integrated Commissioning System
IFR	Individual Funding Request
NHSCC	NHS Clinical Commissioners
NICE	National Institute for Health and Care Excellence
RCoA	Royal College of Anaesthetists
SIGN	Scottish Intercollegiate Guidelines Network
STP	Sustainability and Transformation Partnership
SUS	Secondary Uses Service

Clinical Glossary

A

Adenoma - Adenomas are a type of non-cancerous tumor or benign that may affect various organs.

Angina - Angina is chest pain caused by reduced blood flow to the heart muscles. It's not usually life threatening, but it's a warning sign that you could be at risk of a heart attack or stroke.

Angiogram / Angiography - Angiography is a type of X-ray used to check the health of your blood vessels and how blood flows through them.

Acute gallstone pancreatitis without cholangitis - Cholangitis is an inflammation in the bile duct. Gallstones are small stones that form in your gallbladder. They can sometimes trigger acute pancreatitis if they move out of the gallbladder and block the opening of the pancreas.

Appendicitis - Appendicitis is a painful swelling of the appendix.

Adenoids - Adenoids are small lumps of tissue at the back of the nose, above the roof of the mouth. These can become swollen after a bacterial or viral infection, or after a substance triggers an allergic reaction.

Arthritis - Arthritis is a common condition that causes pain and inflammation in a joint.

Arrhythmias - Arrhythmias are abnormal heart rhythms.

Arthroscopic surgery - is a procedure usually performed under general anaesthesia. A fiberoptic telescope (arthroscope) attached to a video camera is inserted through a small incision near the knee joint, and saline is introduced via a cannula in a further incision near the joint.

Acute Myocardial Infarction (MI) - Acute myocardial infarction is the medical name for a heart attack.

Acute Coronary Syndrome (ACS) - A significant blockage in the coronary arteries, the term covers MI and unstable angina comprise ACS.

B

Barrett's Oesophagus - Barrett's oesophagus is when the cells lining the lower part of your oesophagus (gullet) get damaged by acid and bile repeatedly coming up from your stomach. Over time, the cells may become abnormal and there's a small risk that cancer will develop.

Benign Prostatic Hypertrophy (Benign prostate enlargement (BPE) - Benign prostate enlargement (BPE) is the medical term to describe an enlarged prostate, a condition that can affect how you pass urine.

Brachycephaly (Flat head syndrome) - Flat head syndrome in babies where the back of the head becomes flattened, causing the head to widen, and occasionally the forehead bulges out.

Blood transfusion - A blood transfusion is when you're given blood from someone else (a donor).

Brittle bones (Osteoporosis) - Osteoporosis is a health condition that weakens bones, making them fragile and more likely to break. It develops slowly over several years and is often only diagnosed when a fall or sudden impact causes a bone to break (fracture).

C

Cholecystectomy - A surgical procedure that removes the gallbladder.

Cholelithiasis - The presence of a gallstone in the common bile duct.

Chronic rhinosinusitis with Nasal Polyposis (CRSwNP) - Chronic rhinosinusitis with nasal polyps is diagnosed by the presence of both subjective and objective evidence of chronic sinonasal inflammation.

Computerised Tomography (CT) scan - uses X-rays and a computer to create detailed images of the inside of the body.

Creatinine Kinase tests (Lipid lowering therapy) - Creatine Kinase levels are the clinical measure of muscle damage (rhabdomyolysis) and are widely used to monitor the safe use of lipid lowering therapy.

Cystoscopy - A cystoscopy is a procedure to look inside the bladder using a thin camera called a cystoscope.

Cranial Moulding Orthosis - Helmet moulding therapy, or cranial orthosis, is a type of treatment in which a baby is fitted with a special helmet to correct the shape of the skull.

Coronary angiography - Invasive diagnostic procedure that provides information about the structure and function of the heart. It is considered the best method for diagnosing coronary artery disease.

Coronary heart disease (CHD) - Coronary heart disease is the term that describes what happens when your heart's blood supply is blocked or interrupted by a build-up of fatty substances in the coronary arteries.

Cardiomyopathy - A general term for diseases of the heart muscle, where the walls of the heart chambers have become stretched, thickened or stiff.

Coronary revascularization - In medical and surgical therapy, revascularization is the restoration of perfusion to a body part or organ that has suffered ischemia. It is typically accomplished by surgical means.

Cardiovascular disease (CVD) - Cardiovascular disease is a general term for conditions affecting the heart or blood vessels.

Chest radiograph - Another term for a chest x-ray.

Cardiothoracic surgery - Cardiothoracic surgery (also known as thoracic surgery) is the field of medicine involved in surgical treatment of organs inside the thorax (the chest), generally treatment of conditions of the heart (heart disease) and lungs (lung disease).

Cardiopulmonary exercise testing (CPET) - Cardiopulmonary exercise testing is a non-invasive method used to assess the performance of the heart and lungs at rest and during exercise.

D

Discectomy - A discectomy is a surgical treatment of pain caused by a prolapsed disc in your back. It is the surgical removal of the disc material that is irritating the nerve root.

Dyspepsia - Indigestion

E

Electrocardiogram (ECG) - An electrocardiogram is a simple test that can be used to check your heart's rhythm and electrical activity.

Endoscopic retrograde cholangio-pancreatography (ERCP) - An invasive procedure that involves a small camera (endoscope) being placed into your mouth and fed through to look at the area around your small intestine, pancreas and biliary tree.

F

Flat head syndrome (plagiocephaly and brachycephaly) - Babies sometimes develop a flattened head when they're a few months old, usually as a result of them spending a lot of time lying on their back.

Fusion surgery - Spinal fusion surgery involves the use of surgical implants and/or bone graft to obliterate motion between vertebrae.

H

Heart tracing (ECG) - A simple test that can be used to check your heart's rhythm and electrical activity

Hernia - A hernia occurs when an internal part of the body pushes through a weakness in the muscle or surrounding tissue wall.

I

Interval cholecystectomy - The removal of a diseased gallbladder after drainage for acute infection.

Inguinal hernia - The most common type of hernia which occurs when an internal part of the body pushes through a weakness in the muscle or surrounding tissue wall.

Ischaemia - Ischemia or ischaemia is a restriction in blood supply to tissues, causing a shortage of oxygen that is needed for cellular metabolism (to keep tissue alive).

K

Knee arthroscopy - Knee arthroscopy is a surgical technique that can diagnose and treat problems in the knee joint.

Kidney stones - Waste products in the blood can occasionally form crystals that collect inside the kidneys. Over time, the crystals may build up to form a hard stone-like lump.

L

Left bundle branch block (LBBB) - Left bundle branch block is a blockage of electrical impulses to the heart's left ventricle.

Lower urinary tract symptoms (LUTS) - Lower urinary tract symptoms comprise of storage, voiding and post-micturition symptoms affecting the lower urinary tract.

Lung metastases - Lung metastasis is cancer that started in another part of the body and spread to the lungs.

M

Magnetic resonance imaging (MRI) scan - Magnetic resonance imaging is a type of **scan** that uses strong magnetic fields and radio waves to produce detailed images of the inside of the body.

Mechanical axial low back pain - A variety of structures in the low back can cause axial or mechanical lower back pain, such as a degenerated disc, facet joint problems, and damage to soft tissues - muscles, ligaments, and tendons.

Malignant - A term for diseases in which abnormal cells divide without control and can invade nearby tissues. Malignant cells can also spread to other parts of the body through the blood and lymph systems.

Myocardial infarction (MI) - Also known as a heart attack, occurs when blood flow decreases or stops to a part of the heart, causing damage to the heart muscle.

N

Non-cardiac - Refers to any procedure not involving the heart or major blood vessels.

O

Osteoarthritis (OA) - The commonest form of arthritis, characterised by joint pain accompanied by a varying degree of functional limitation and reduced quality of life.

Osteoporotic vertebral fractures - Osteoporotic vertebral fractures cause pain and an associated reduction in mobility. Osteoporotic bones are of reduced density and are more susceptible to fractures.

Vertebral compression fractures - A break in a bone of the spinal column that results in a reduction in height of that bone.

P

Pancreatitis – Pancreatitis is a condition where the pancreas is inflamed and is not working properly as a result. It can be acute or chronic.

Prostate-specific antigen (PSA) – Is a protein produced by the prostate gland. Blood PSA levels can be elevated in prostate cancer as well as a number of other conditions including benign prostatic hypertrophy, prostatitis and urinary tract infection.

Plagiocephaly (Flat head syndrome) – Flat head syndrome in babies where the head is flattened on 1 side, causing it to look asymmetrical; the ears may be misaligned, and the head looks like a parallelogram when seen from above, and sometimes the forehead and face may bulge a little on the flat side.

Prognosticate Coronary Heart Disease (CHD) – Where a person is predicted to be at significant risk of coronary heart disease.

Paced ventricular rhythm – An electrocardiographic finding in which the ventricular rhythm is controlled by an electrical impulse from an artificial cardiac pacemaker.

Patient body habitus – Physique / Build.

R

Radiofrequency facet joint denervation – Facet joint radiofrequency denervation is a procedure in which nerve fibres supplying the painful facet joints are selectively destroyed by heat produced by radio waves and delivered through a needle.

Radionucleotide myocardial perfusion imaging – Used to assess the heart condition, it involves taking pictures of the heart in action and the flow of blood within the heart.

Revascularisation – The restoration of perfusion to a body part or organ that has suffered ischemia

Renal disease – The name for a disease or condition that mainly affects the kidneys.

S

Sepsis – A serious infection that causes your immune system to attack your body.

Shock wave lithotripsy (SWL) – A non-invasive fragmentation of kidney stones or gallstones with shock waves generated outside the body

Spinal fusion surgery – Involves the use of surgical implants and/or bone graft to obliterate motion between vertebrae.

Sound wave therapy – Can be used for removing kidney stones.

Stress echocardiograms – Stress echocardiography is a test that uses ultrasound imaging to show how well your heart muscle is working to pump blood to your body.

T

Transurethral incision of the prostate (TUIP) – Surgical treatment to reduce the size of an enlarged prostate by making incision.

Transurethral needle ablation of the prostate (TUNA) – Is a technique that uses low energy radio frequency delivered through two needles to ablate excess prostate tissue.

Transurethral resection of prostate (TURP) – Is a therapeutic procedure involving removal of tissue from the inner aspect of the prostate using diathermy, via an endoscopic approach. It is commonly undertaken for voiding LUTS presumed secondary to BPE.

Transurethral vapourisation of the prostate (TUVP) – Utilises the heat from high-voltage electric current which ablates obstructive prostatic tissue and seals the surrounding blood vessels

U

Upper GI endoscopy - A procedure that allows your doctor to look at the inside lining of your esophagus, your stomach, and the first part of your small intestine (duodenum).

Ureteroscopy (URS) - A procedure to examine in the inside of your urinary tract using a small lighted viewing scope

Urology - The branch of medicine that focuses on surgical and medical diseases of the male and female urinary tract system

V

Valvular heart disease - Occurs when the valves of the heart become diseased or damaged, affecting the blood flow through the body and putting extra strain on the heart.

Ventricular pre-excitation - An abnormality in the electrical functioning of the heart which may cause rapid heart rates. The abnormality affects the electrical signal between the atria and ventricles.

Vertebroplasty (VP) - A procedure which involves the injection of cement (typically polymethylmethacrylate [PMMA]) into the fractured vertebral body via a needle inserted through the skin, using image guidance.

Appendix 2

Proposed clinical criteria for the 31 interventions

Interventions where data are sufficiently robust²¹ to determine rates of variation and set national activity goals using the same methodology as used in the initial list of 17 interventions.

1.1.1 A - Diagnostic coronary angiography for low risk, stable chest pain

Summary of intervention
NICE guidelines recommend that where a diagnosis of chest pain cannot, by clinical assessment alone, exclude stable angina, 64-slice (or above) CT coronary angiography should be offered as first-line. Invasive coronary angiography should only be offered to patients with significant findings on CT coronary angiogram or with inconclusive further imaging.
Number of interventions in 2018/19
26,629
Proposal
<p>When results of non-invasive functional imaging are inconclusive and patients are assessed as having low risk, stable cardiac pain, invasive coronary angiography [cardiac catheterisation] should be offered only as third-line investigation.</p> <p>Patients who have chest pain that is not an Acute Coronary Syndrome (ACS), but there is concern that it is due to an ischemic cause [stable angina] should, in the first instance, be offered a CT Coronary angiography [64 slice or above]. This is based on:</p> <ul style="list-style-type: none"> • Clinical assessment indicating typical or atypical angina; or • Clinical assessment indicates non-anginal chest pain but the 12-lead resting ECG shows ST-T changes or Q waves. <p>Significant coronary artery disease [CAD] found during CT coronary angiography is \geq 70% diameter stenosis of at least one major epicardial artery segment or \geq 50% diameter stenosis in the left main coronary artery.</p> <p>If the CT coronary angiography is inconclusive, non-invasive functional imaging for myocardial ischemia should be considered in the following forms:</p> <ul style="list-style-type: none"> • Myocardial perfusion scintigraphy with single photon emission computed tomography (MPS with SPECT); or • Stress echocardiography; or • First-pass contrast-enhanced magnetic resonance (MR) stress perfusion; or

²¹ In general, the procedure and diagnostic codes have been identified and therefore deemed robust enough to determine rates and goals. However, there are certain limitations unique to each intervention which are set out for each intervention in the 'limitations of data/coding' section in Appendix 5 tables.

- MR imaging for stress-induced wall motion abnormalities; or
- Fractional flow reserve CT (FFR-CT).

Invasive coronary angiography should only be offered as third-line investigation when the results of non-invasive functional imaging are inconclusive.

Rationale for Recommendation

NICE guidelines recommend that where a diagnosis of chest pain cannot, by clinical assessment alone, exclude stable angina, 64-slice (or above) CT coronary angiography should be offered as first-line investigation.

Cardiac catheterisation and coronary angiography are generally considered to be safe procedures. However, as with all medical procedures, there are some associated risks. The main risks of coronary angiography include:

- Haematoma or bruising in groin or arm
- Allergy to the contrast
- A very small risk including damage to the artery in the arm or leg where the catheter was inserted, heart attack, stroke, kidney damage and, very rarely, death [risk of a serious complication occurring is estimated to be less than 1 in 1,000. People with serious underlying heart problems are most at risk.]

References

1. NICE guidance: Chest pain of recent onset: assessment and diagnosis (clinical guideline CG95) <https://www.nice.org.uk/guidance/cg95>
2. NICE Resource impact report: <https://www.nice.org.uk/guidance/cg95/resources/resource-impact-report-pdf-2726121709>
3. NHS advice: <https://www.nhs.uk/conditions/coronary-angiography/>
4. NHS advice: <https://www.nhs.uk/conditions/coronary-angiography/risks/>
5. Guy's and St. Thomas' patient information: <https://www.guysandstthomas.nhs.uk/resources/patient-information/cardiovascular/having-a-coronary-angiogram.pdf>
6. NICE guidance: HeartFlow FFRCT for estimating fractional flow reserve from coronary CT angiography (Medical technologies guidance MTG32): <https://www.nice.org.uk/guidance/mtg32>

1.1.2 B - Repair of minimally symptomatic inguinal hernia

Summary of intervention

Watchful waiting is a safe option for people with minimally symptomatic inguinal hernias. Delaying surgical repair until symptoms increase is acceptable because acute hernia incarcerations occur rarely. Many people with an inguinal hernia are asymptomatic or minimally symptomatic and may never need surgery.

Number of interventions in 2018/19

56,457

Proposal

Minimally symptomatic inguinal hernia can be managed safely with watchful waiting for up to two years after assessment, with an incidence of hernia accident (the traditional reason for hernia repair) at a rate of 0.11% in patients aged over 65 years. Conservative management should therefore be considered in appropriately selected patients.

Rationale for Recommendation

Repair of minimally symptomatic inguinal hernia is a high cost and high frequency operation. A randomised control trial determined that watchful waiting was a safe and reasonable option for minimally symptomatic hernias. Up to one third of hernias give patients only mild pain that does interfere with work or leisure activities.

The risks/potential harm of delaying surgery (which is a frequently cited reason for repair) are rare. The incidence of hernia accident (i.e. acute hernia incarceration with bowel obstruction, strangulation of intra-abdominal contents, or both) is very low (1.8 per 1'000 patients) and even in elderly, whom are at greater risk, the rate is 0.11% in patients aged over 65 years. Patients who develop symptoms have no greater risk of operative complications than those undergoing prophylactic hernia repair. The rate of complications is similar for those undergo prophylactic surgery and those who have surgery as a result of an increase in symptoms whilst under watchful waiting. The risks are infection, bleeding, perforation, and long-lasting significant pain after surgery as well as risks associated with sedation/anaesthetic. Although it is a generally safe and effective operation, procedures should be delayed where appropriate to avoid these associated risks.

In a male randomised clinical trial for two-year watchful waiting, for the instances that treatment escalated to surgery, the most common reason cited was increased hernia-related pain. The hernia repair can be safely delayed until increased pain or discomfort. Pain interfering with activities increased 5.1% for watchful waiting and 2.2% for surgical repair over this same time. This is confirmed by another trial looking at pain at 12 months that did not find statistically different values between surgery and watchful waiting groups. Those who had increased pain crossed over to have surgery where necessary. 23% of patients crossed over from watchful waiting to surgery within two years. Pain was decreased in both groups at two years.

Results of several randomised controlled and clinical trials agreed with these findings. It is safe to manage minimally symptomatic inguinal hernia with watchful waiting for up to two years. Outcomes, pain and post-operative complications remained similar to prophylactic repair.

References

1. Malik HT, Marti J, Darzi A, Mossialos E. Savings from reducing low-value general surgical interventions. *Br J Surg*. 2018 Jan;105(1):13-25. doi:10.1002/bjs.10719. Epub 2017 Nov 8. Review. PubMed PMID: 29114846.
2. Fitzgibbons RJ Jr, Giobbie-Hurder A, Gibbs JO, Dunlop DD, Reda DJ, McCarthy M Jr et al. Watchful waiting vs repair of inguinal hernia in minimally symptomatic men: a randomized clinical trial. *JAMA* 2006; 295: 285 – 292.
3. O'Dwyer PJ, Norrie J, Alani A, Walker A, Duffy F, Horgan P. Observation or operation for patients with an asymptomatic inguinal hernia: a randomized clinical trial. *Ann Surg* 2006; 244: 167 – 173.
4. Fitzgibbons RJ Jr, Ramanan B, Arya S, Turner SA, Li X, Gibbs JO et al. Long-term results of a randomized controlled trial of a nonoperative strategy [watchful waiting] for men with minimally symptomatic inguinal hernias. *Ann Surg* 2013; 258: 508 – 515.

1.1.3 C - Surgical intervention for chronic sinusitis

Summary of intervention

Chronic rhinosinusitis (CRS) is defined as inflammation (swelling) of the nasal sinuses that lasts longer than 12 weeks. The sinuses are mucus secreting, air filled cavities in the face and head that drain into the nose; their normal function may be disrupted by environmental, infectious or inflammatory conditions which damage the epithelial lining and disturb the balance of the natural microbial community. Patients report a number of symptoms including nasal blockage, discharge, alteration to smell, and facial pressure or pain. They often have a relapsing course, with recurrence after treatment commonplace. Absenteeism and presenteeism are widespread.

It is a common chronic condition that affects approximately 11% of adults and has a significant detrimental effect on the quality of life of those affected, thus creating a significant disease burden.

CRS as a term encompasses a wide range of phenotypes but can broadly be divided into two main types. Chronic rhinosinusitis with Nasal Polyposis (CRSwNP) and Chronic Rhinosinusitis without Nasal Polyposis (CRSSNP).

First-line treatment is with appropriate medical therapy which should include intranasal steroids and nasal saline irrigation. In the case of CRSwNP a trial of a short course of oral steroids should also be considered.

Where first-line medical treatment has failed patients should be referred for diagnostic confirmation and they then may be considered for endoscopic sinus surgery. This involves surgery using a telescope via the nasal cavity to open the sinuses and, if present, remove nasal polyps, both improving the effectiveness of ongoing medical therapy and relieving obstruction. The surgery is usually undertaken under general anaesthetic as a day-case procedure in otherwise healthy individuals.

Number of interventions in 2018/19

3,914

Proposal

Patients are eligible to be referred for specialist secondary care assessment in the following circumstances:

- A clinical diagnosis of CRS has been made (as set out in RCS/ENT-UK Commissioning guidance) in primary care and patient still has moderate / severe symptoms after a 3-month trial of intranasal steroids and nasal saline irrigation.

AND

In addition, for patients with bilateral nasal polyps there has been no improvement in symptoms 4 weeks after a trial of 5-10 days of oral steroids (0.5mg/kg to a max of 60 mg)

- Patient has nasal symptoms with an unclear diagnosis in primary care
- Any patient with unilateral symptoms / clinical findings, orbital neurological symptoms should be referred urgently / via 2-week wait depending on local pathways.
- No investigations, apart from clinical assessment, should take place in primary care or be a pre-requisite for referral to secondary care (e.g. X-ray, CT scan). There is no role for prolonged courses of antibiotics in primary care.

Patients can be considered for endoscopic sinus surgery when the following criteria are met:

- A diagnosis of CRS has been confirmed from clinical history and nasal endoscopy and / or CT scan.
- Disease-specific symptom patient reported outcome measure confirms moderate to severe symptoms e.g. Sinonasal Outcome Test (SNOT-22) after trial of appropriate medical therapy (including counselling on technique and compliance) as outlined in RCS/ENT-UK commissioning guidance 'Recommended secondary care pathway'.
- Pre-operative CT scan has been performed and confirms presence of CRS. Note CT does not need repeating if performed earlier in patient pathway.
- Patient and clinician have undertaken appropriate shared decision-making consultation regarding undergoing surgery including discussion of risks and benefits of surgical intervention.
- Patients with recurrent acute sinusitis when the diagnosis has been confirmed with endoscopy and/or CT during an acute attack, as examination may be normal in between episodes.

There are a number of medical conditions whereby endoscopic sinus surgery may be required outside the above criteria and in these cases they should not be subjected to the above criteria and continue to be routinely funded:

- Any suspected or confirmed neoplasia
- Emergency presentations with complications of sinusitis (e.g. orbital abscess, subdural or intracranial abscess)
- Patients with immunodeficiency
- Fungal Sinusitis
- Patients with conditions such as Primary Ciliary Dyskinesia, Cystic Fibrosis or Samter's Triad (Aspirin Sensitivity, Asthma, CRS)
- Treatment with topical and / or oral steroids contra-indicated.

Rationale for Recommendation

There is a strong evidence base and expert consensus opinion to support the medical management of chronic rhinosinusitis with intranasal steroids and nasal saline irrigation as a first-line treatment. They are low cost and low risk, with newer generations of nasal steroids safe for long-term use owing to minimal systemic absorption.

There is also evidence to support the trial of oral steroids, but only when nasal polyposis is present. The benefits of oral steroids should be balanced against the risks when considering repeated courses. A Cochrane review has demonstrated the benefits of oral steroids can last up to three months; however the risks and side effects must be balanced against benefit for the patient with repeated courses.

There is evidence to support that when endoscopic sinus surgery is performed in appropriately selected patients (as outlined in the recommendation), it will lead to a significant and durable improvement in symptoms. There is also evidence that patients who undergo surgery early in their disease course will have a longer and more beneficial impact from the surgery. All national and international guidelines support

consideration of endoscopic sinus surgery once appropriate medical therapy has failed.

Endoscopic sinus surgery is generally safe but carries some risks that include bleeding, infection, scar tissue formation, and very rarely orbital injuries or cerebrospinal fluid leak (with associated risk of meningitis). Patients should also be counselled that is a risk of recurrent symptoms and that ongoing medical treatment is often required to maintain symptom improvement after endoscopic sinus surgery.

References

1. RCS Commissioning Guide: Chronic Rhinosinusitis. 2016. <https://www.rcseng.ac.uk/standards-and-research/commissioning/commissioning-guides/topics/>
2. NICE Clinical Knowledge Summary – Sinusitis: <https://cks.nice.org.uk/sinusitis>
3. Hastan D, Fokkens WJ, Bachert C, et al. Chronic rhinosinusitis in europe--an underestimated disease. A GA[2]LEN study. *Allergy*. 2011;66(9):1216-1223. doi: 10.1111/j.1398-9995.2011.02646.x [doi].
4. Orlandi RR, Kingdom TT, Hwang PH, et al. International consensus statement on allergy and rhinology: Rhinosinusitis. *Int Forum Allergy Rhinol*. 2016;6 Suppl 1:22. doi: 10.1002/alr.21695 [doi].
5. Fokkens WJ, Lund VJ, Mullol J, et al. EPOS 2012: European position paper on rhinosinusitis and nasal polyps 2012. A summary for otorhinolaryngologists. *Rhinology*. 2012;50(1):1-12. doi: 10.4193/Rhino50E2 [doi].

1.1.4 D - Removal of adenoids

Summary of intervention

Adenoids are lymphatic tissue that reside in the post nasal space and arise from the roof of the nasopharynx. Adenoids are only usually present in children and tend to grow from birth, reaching the largest size when a child is between 3 and 5 years of age, before slowly shrinking away by adulthood.

When the adenoids are enlarged or inflamed they may contribute to glue ear (otitis media with effusion), which can affect hearing. They can also cause symptoms of nasal blockage, mouth breathing, obstructive sleep and other upper respiratory tract symptoms (e.g. persistent runny nose)

When children have persistent glue ear that affects hearing, one option for treatment of the hearing loss is with grommet insertions (ventilation tubes) and guidance for this intervention is already set out in the EBI guidance published in November 2018 – ‘grommets for glue ear in children’.

In some circumstances, when a child is undergoing surgery to insert grommets, the adenoids may also be partially resected at the same time. This is a short procedure performed via the mouth to remove excessive adenoidal tissue (adenoidectomy) and is most commonly performed either by electrocautery (monopolar suction diathermy), cold steel dissection (curettage), or coblation. The aim of adenoidectomy is to improve eustachian tube function and therefore reduce the recurrence of glue ear after grommets fall out.

Number of interventions in 2018/19

1,921

Proposal

Adjuvant adenoidectomy should not be routinely performed in children undergoing grommet insertion for the treatment of otitis media with effusion.

Adjuvant adenoidectomy for the treatment of glue ear should only be offered when one or more of the following clinical criteria are met:

- The child has persistent and / or frequent upper respiratory tract symptoms
- The child is undergoing surgery for re-insertion of grommets due to recurrence of previously surgically treated otitis media with effusion
- The child is undergoing grommet surgery for treatment of recurrent acute otitis media

This guidance only refers to children undergoing adenoidectomy for the treatment of glue ear and should not be applied to other conditions where adenoidectomy should continue to be routinely funded:

- As part of treatment for obstructive sleep apnoea or sleep disordered breathing in children
- As part of the treatment of chronic rhinosinusitis in children
- In preparation for speech surgery in conjunction with the cleft surgery team

Rationale for Recommendation

NICE guidance recommends that adjuvant adenoidectomy should not be performed for the treatment of glue ear in the absence of persistent and / or frequent upper respiratory tract symptoms. A recent systemic review demonstrated that whilst adjuvant adenoidectomy resulted in an improvement in resolution of the glue ear at 6 and 12 months compared to grommets alone, the benefit in hearing compared to grommets alone was very limited.

Adjuvant adenoidectomy is considered a low risk procedure but does increase the length of surgery compared to inserting grommets alone. Risks include damage to teeth, lips or gums, bleeding (usually only minor and self-resolving), and rarely (around 1%) velopharyngeal insufficiency (VPI). VPI can result in speech problems such as hypernasal speech or audible escape of air out of the nose when talking and in some cases can cause nasal regurgitation.

If there is a history of cleft palate or palpable palate abnormality such as submucous cleft palate or a history of speech problems before the operation, full assessment should be carried out before adenoidectomy.

References

1. NICE Guidance. <https://www.nice.org.uk/Guidance/CG60>
2. Rosenfeld RM, Shin JJ, Schwartz SR, et al. Clinical practice guideline: Otitis media with effusion executive summary [update]. *Otolaryngol Head Neck Surg.* 2016;154(2):201-214. <https://doi.org/10.1177/0194599815624407>. doi: 10.1177/0194599815624407.
3. Schilder AG, Marom T, Bhutta MF, et al. Panel 7: Otitis media: Treatment and complications. *Otolaryngol Head Neck Surg.* 2017;156(4_suppl):S88-S105. doi: 10.1177/0194599816633697 [doi].
4. Van dA, Schilder A, Herkert E, Boonacker C, Rovers MM. Adenoidectomy for otitis media in children. *Cochrane Database of Systematic Reviews.* 2010(1). <https://doi.org/10.1002/14651858.CD007810.pub2>. doi: 10.1002/14651858.CD007810.pub2.

1.1.5 E - Arthroscopic surgery for meniscal tears

Summary of intervention
Arthroscopy of the knee is a surgical technique where a camera and instruments are inserted into the knee through small incisions, usually under general anaesthesia. Following a detailed systematic assessment of the important structures within the knee joint a surgical procedure is performed which can involve repair or resection of meniscal tissue, with or without other associated procedures such as ligament reconstruction or repair of articular cartilage lesions. The British Association for surgery of the Knee (BASK) recently published guidelines for the use of arthroscopic surgery to treat degenerate meniscal tears.
Number of interventions in 2018/19
38,106
Proposal
The use of arthroscopic surgery to treat degenerate meniscal tears should follow published BASK guidelines https://baskonline.com/professional/wp-content/uploads/sites/5/2018/07/BASK-Meniscal-Surgery-Guideline-2018.pdf
Rationale for Recommendation
<p>Meniscal tears in the knee are a common finding and in many cases are not related to any significant symptoms. They are often associated with degenerative articular cartilage change and osteoarthritis within the knee. A significant number of patients who present with persistent and often mechanical symptoms within the knee have a meniscal tear, which can be demonstrated with an MRI scan.</p> <p>The vast majority of patients with a meniscal tear should be initially treated non-operatively and should not have arthroscopic meniscectomy as a first-line treatment. Non-operative treatment is highly effective with patient education using verbal and written materials, physiotherapy and weight loss interventions. Exercise should comprise both local muscle strengthening and general aerobic fitness. Paracetamol and topical NSAIDs should be first-line pharmacological management strategies.</p> <p>Many patients treated this way will improve and do not require surgery. However, after three months of non-operative treatment, if symptoms still persist and the patient has a meniscal tear pattern that is felt to be directly contributing to the symptoms, arthroscopic meniscectomy can be considered. Recent systematic review evidence has suggested that in these cases there can be improvement in patient's symptoms with this procedure.</p> <p>Patients considering arthroscopic knee surgery should go through a shared decision-making process and have a good understanding of the risks of surgery. The procedure is a relatively safe intervention but does carry a low a low risk of infection and deep vein thrombosis, both of which are serious complications</p> <p>There are a number of occasions when arthroscopic meniscal surgery can be considered as a first-line treatment. Firstly, patients who have a locked knee from a bucket handle tear of the meniscus need urgent assessment and in most cases need arthroscopic repair or resection of the meniscus. Secondly where the patient has had an acute injury and an MRI scan reveals a potentially repairable meniscus tear, an arthroscopic meniscal repair should be considered. Thirdly, patients with mechanical symptoms and an MRI proven unstable meniscal tear that does not respond to three months of non-operative treatment should be considered for surgery.</p>

Routine use of arthroscopy for degenerative knee disease, where no specific target pathology has been identified, is not recommended. This treatment strategy has not been found to be clinically beneficial and is unlikely to be cost-effective. Using agreed guidelines for employing arthroscopic surgery to treat meniscal tear pathology and avoiding indiscriminate use will reduce unwarranted variation in clinical care.

References

1. Kise NJ, Risberg MA, Stensrud S, Ranstam J, Engebretsen L, Roos EM. Exercise therapy versus arthroscopic partial meniscectomy for degenerative meniscal tear in middle aged patients: randomised controlled trial with two year follow up. *BMJ*2016;354:i3740. doi:10.1136/bmj.i3740 pmid:27440192
2. Khan M, Evaniew N, Bedi A, Ayeni OR, Bhandari M. Arthroscopic surgery for degenerative tears of the meniscus: a systematic review and meta-analysis. *CMAJ*2014;186:1057-64. doi:10.1503/cmaj.140433 pmid:25157057.
3. Thorlund JB, Juhl CB, Roos EM, Lohmander LS. Arthroscopic surgery for degenerative knee: systematic review and meta-analysis of benefits and harms. *BMJ*2015;350:h2747. doi:10.1136/bmj.h2747 pmid:26080045.
4. Devji T, Guyatt GH, Lytvyn L, et al. Application of minimal important differences in degenerative knee disease outcomes: a systematic review and case study to inform BMJ Rapid Recommendations. *BMJ Open* 2017;7:e015587. doi:doi:10.1136/bmjopen-2016-015587.
5. Brignardello-Peterson R, Guyatt GH, Schandelmaier S, et al. Knee arthroscopy versus conservative management in patients with degenerative knee disease: a systematic review. *BMJ Open*2017;7:e016114. doi:10.1136/bmjopen-2017-016114.
6. Marsh JD, Birmingham TB, Giffin JR, et al. Cost-effectiveness analysis of arthroscopic surgery compared with non-operative management for osteoarthritis of the knee. *BMJ Open*2016;6:e009949. doi:10.1136/bmjopen-2015-009949 pmid:26758265.
7. <https://www.nice.org.uk/guidance/cg177/chapter/1-Recommendations>
8. McGrory B, Weber K, Lynott JA, et al. American Academy of Orthopaedic Surgeons. The American Academy of Orthopaedic Surgeons evidence-based clinical practice guideline on surgical management of osteoarthritis of the knee. *J Bone Joint Surg Am*2016;98:688-92. doi:10.2106/JBJS.15.01311 pmid:27098328.
9. National Institute for Health and Clinical Excellence. Arthroscopic knee washout, with or without debridement, for the treatment of osteoarthritis [Interventional procedures guidance IPG230]. 2007. <http://www.nice.org.uk/guidance/ipg230>. <https://www.nice.org.uk/guidance/ipg230/chapter/2-The-procedure>
10. Adelani MA, Harris AH, Bowe TR, Giori NJ. Arthroscopy for knee osteoarthritis has not decreased after a clinical trial. *Clin Orthop Relat Res*2016;474:489-94. doi:10.1007/s11999-015-4514-4 pmid:26290345.
11. Siemieniuk RAC, Harris IA, Agoritsas T, et al. Arthroscopic surgery for degenerative knee arthritis and meniscal tears: a clinical practice guideline. *BMJ* 2017;257:j1982. doi:10.1136/bmj.j1982.
12. Gauffin H, Tagesson S, Meunier A, Magnusson H, Kvist J. Knee arthroscopic surgery is beneficial to middle-aged patients with meniscal symptoms: a prospective, randomised, single-blinded study. *Osteoarthritis Cartilage*2014;22:1808-16. doi:10.1016/j.joca.2014.07.017 pmid:25086401.

13. Sihvonen R, Englund M, Turkiewicz A, Järvinen TL. Finnish Degenerative Meniscal Lesion Study Group. Mechanical symptoms and arthroscopic partial meniscectomy in patients with degenerative meniscus tear: a secondary analysis of a randomized trial. *Ann Intern Med* 2016;164:449-55. doi:10.7326/M15-0899 pmid:26856620.
14. S. G. F. Abram, D. J. Beard, A. J. Price, BASK Meniscal Working Group. Bone Joint J 2019;101-B:652–659. Arthroscopic meniscal surgery a national society treatment guideline and consensus statement. <https://doi.org/10.1302/0301-620X.101B6.BJJ-2019-0126.R1>.
15. A. J. Price, F. S. Haddad, D. J. Beard. Bone Joint J 2019;101-B:625–626. New guidelines for the use of arthroscopic meniscal knee surgery. <https://doi.org/10.1302/0301-620X.101B6.BJJ-2019-0550>. Published Online:1 Jun 2019<https://doi.org/10.1302/0301-620X.101B6.BJJ-2019-0550> .
16. Abram SGF, Judge A, Beard DJ, Price AJ. *Lancet*. 2018 Nov 17;392(10160):2194-2202. Adverse outcomes after arthroscopic partial meniscectomy: a study of 700 000 procedures in the national Hospital Episode Statistics database for England. doi: 10.1016/S0140-6736(18)31771-9. Epub 2018 Sep 24.
17. <https://www.nice.org.uk/guidance/cg177>
18. <https://baskonline.com/professional/wp-content/uploads/sites/5/2018/07/BASK-Meniscal-Surgery-Guideline-2018.pdf>

1.1.6 F - Troponin test

Summary of intervention
Troponin blood testing should be used to diagnose acute myocardial infarction. However, it should only be used in cases where a clinical diagnosis of acute coronary syndrome is suspected or for prognostic purposes when pulmonary embolism is confirmed.
Number of interventions in 2018/19
577,538
Proposal
In order to rule out suspected acute coronary syndrome (moderate or high risk of myocardial infarction) in people presenting with acute chest pain, NICE recommends early rule out using high-sensitivity troponin tests.
High-sensitivity troponin assays were developed to detect troponin in the blood at lower levels than non-high-sensitivity troponin assays. Using the high-sensitivity assays as part of an early rule-out protocol can reduce time to discharge. Guidance on early rule out of NSTEMI using high-sensitivity troponin assays recommends a 2-test strategy, typically on admission and at 3 hours. However, the committee concluded that there was insufficient evidence to recommend a specific test strategy and agreed that early rule-out protocols should be chosen according to local preference.
High-sensitivity troponin measurements should not be considered in isolation but interpreted alongside the clinical presentation, the time from onset of symptoms, the 12-lead resting ECG, pre-test probability of NSTEMI, the possibility of chronically elevated troponin levels in some people and that 99th percentile thresholds for troponin I and T may differ between sexes

If ACS is not suspected, high-sensitivity troponin test **should not** be used. For people at low risk of myocardial infarction only perform a second high-sensitivity troponin test if the first troponin test at presentation is positive.

Diagnosis of myocardial infarction is the detection of a rise and/or fall of cardiac troponin with at least one value above the 99th percentile of the upper reference limit and at least one of the following:

- symptoms suggesting myocardial ischaemia
- new / presumed new significant ST-segment-T wave (ST-T) changes or new left bundle branch block (LBBB)
- development of pathological Q waves on the ECG
- imaging evidence of new loss of viable myocardium or new regional wall motion abnormality
- identification of an intracoronary thrombus by angiography

The appropriate use of high-sensitivity troponin testing should reduce the need for further investigation, result in shorter stays in hospital and overall result in cost-savings (if used in an early rule out clinical protocol) but should only be used in cases of suspected acute coronary syndrome. According to this recommendation, if acute coronary syndrome is suspected in a primary care setting, a referral should be made for prompt investigation and treatment.

Rationale for Recommendation

NICE guidelines recommend that the initial assessment for a person presenting with chest pain and suspected acute coronary syndrome in hospital is a 12-lead resting ECG and a blood sample for high-sensitivity troponin I or T. NICE guidance considers high-sensitivity troponin tests to be those that have a coefficient of variation of 10% or less at the 99th percentile (the upper limit of the reference population), and are able to detect cardiac troponin in at least 50% of the reference population. Research suggests that troponin tests used for indications other than suspected acute coronary syndrome are rarely associated with cardiac disease, cause unnecessary investigations and increase length of hospital stay.

Troponin tests are useful prognostically but not diagnostically in cases of pulmonary embolism (PE) as markers of right ventricular dysfunction. Troponin levels are elevated in up to half of patients who have a moderate to large PE and are associated with clinical deterioration after PE. Troponin elevations usually resolve within 40 hours following PE, in contrast to the more prolonged elevation after acute myocardial injury.

References

1. NICE guidance: Myocardial infarction (acute): Early rule out using high-sensitivity troponin tests (Elecsys Troponin T high-sensitive, ARCHITECT STAT High Sensitive Troponin-I and AccuTnl+3 assays)
<https://www.nice.org.uk/guidance/dg15>
2. NICE Guidance: Chest pain of recent onset: assessment and diagnosis (CG95).
<https://www.nice.org.uk/guidance/cg95>
3. NICE Costing Statement:
<https://www.nice.org.uk/guidance/dg15/resources/costing-statement-pdf-49213>

4. NICE adoption support resource:
<https://www.nice.org.uk/guidance/dg15/resources/adoption-support-resource-insights-from-the-nhs-6905227937/chapter/Introduction>
5. The Universal Definition of MI: Thygesen K, Alpert JS, Jaffe AS et al. [2012]
<https://www.ahajournals.org/doi/full/10.1161/CIR.0b013e31826e1058>
Circulation 126: 2020–5.
6. Al-Maskari M, Al-Makhdami M, Al-Lawati H, Al-Hadi H, Nadar SK. Troponin Testing in the Emergency Department: Real world experience. Sultan Qaboos Univ Med J. 2017;17(4):e398–e403. doi:10.18295/squmj.2017.17.04.004
7. Cardiac troponin I elevation in acute pulmonary embolism is associated with right
8. ventricular dysfunction. Meyer T, Binder L, Hruska N, Luthe H, Buchwald AB. J Am Coll Cardiol. 2000 Nov 1;36(5):1632-6.

1.1.7 G - Surgical removal of kidney stones

Summary of intervention

Urinary tract stones are amongst the most common condition dealt with by urologists with an estimated 6,000 patients admitted to hospital per year with the condition. Shockwave lithotripsy (SWL) is a non-surgical technique for treating these stones in the kidney or ureter. The technique uses high energy shockwaves to break the stones into smaller fragments which can then pass spontaneously.

Stones can be observed to see if they pass spontaneously, or treated with shockwave lithotripsy, or surgical techniques such as ureteroscopy (URS) and percutaneous stone surgery (PCNL), both of which may involve placing a stent.

The optimal management depends on the type, size and location of the stone as well as patient factors such as co-morbidity and pregnancy. For appropriate stones SWL is advantageous as it is non-invasive and so has fewer major adverse events than surgery.

Number of interventions in 2018/19

14,457

Proposal

Adult renal stones

<5mm: If asymptomatic consider watchful waiting

5-10mm: If not suitable for watchful waiting offer SWL as first-line treatment (unless contra-indicated or not targetable)

10-20mm: Consider SWL as first-line treatment if treatment can be given in a timely fashion. URS can also be considered if SWL is contraindicated or ineffective

Over 20mm (including staghorn): Offer percutaneous nephrolithotomy (PCNL) as first-line treatment

Adult ureteric stones

<5mm: If asymptomatic consider watchful waiting with medical therapy e.g. Alpha blocker for use with distal ureteric stones

5-10mm: Offer SWL as first-line treatment where it can be given in a timely fashion (unless contra-indicated or not targetable)

10-20mm: Offer URS but consider SWL if local facilities allow stone clearance within 4 weeks

Rationale for Recommendation

ESWL will not always be possible due to lack of access to a lithotripter or appropriately trained staff. As it is often the optimal treatment, hospitals should consider purchasing this equipment or liaising with neighbouring hospitals which do have these facilities.

Adult renal stones

Asymptomatic renal stones less than 5mm may pass spontaneously and so this carries less risk than intervention in the first instance. Watchful waiting for larger stones carries greater risk but in patients with co-morbidities should still be considered as these risks may be less than those of intervention.

For renal stones less than 10mm SWL has shorter hospital stays, less pain and fewer major adverse events compared to URS, although URS normally needs fewer treatments. Overall as SWL is non-invasive with fewer major adverse events this should be considered first-line treatment.

For renal stones between 10mm and 20mm the optimal strategy depends on the stone but would be either SWL or URS. Because SWL is non-invasive with fewer major adverse events this could be considered before URS if treatments can be given in a timely fashion so minimising delay between treatments and SWL is not contraindicated.

Adult ureteric stones

For Ureteric stones less than 10mm SWL showed benefits in terms of readmission and fewer major adverse events although URS had lower retreatment rates. When a stent is used this is often only a temporary measure with additional surgery required to remove the stone. Therefore, SWL should be considered first-line when it is not contra-indicated and the stone is targetable

For ureteric stones between 10mm and 20mm URS should be offered, though because SWL has been shown to result in shorter hospital stays, less pain and fewer adverse events, it could be considered if stone clearance is possible within four weeks.

References

1. Renal and ureteric stones: assessment and management NG118 <https://www.nice.org.uk/guidance/ng118>
2. Urology surgery – Getting It Right First Time <https://gettingitrightfirsttime.co.uk/surgical-specialty/urology-surgery/>

1.1.8 H - Cystoscopy for men with uncomplicated lower urinary tract symptoms

Summary of intervention

Cystoscopy is a diagnostic procedure used to examine the lining of the bladder and urethra. Either a rigid or flexible endoscope may be used, under general or local anaesthesia, respectively. Rigid cystoscopy is undertaken when flexible cystoscopy offers insufficiently clear views, or when biopsy is indicated.

Cystoscopy can cause temporary discomfort, occasionally pain and haematuria and is associated with a small risk of infection.

In the context of male lower urinary tract symptoms (LUTS), cystoscopy may offer indirect evidence regarding an underlying cause (commonly prostatic enlargement, for example).

Number of interventions in 2018/19

50,685

Proposal

Assessment of men with LUTS should focus initially on a thorough history and examination, complemented by use of a frequency – volume chart, urine dipstick analysis and International Prostate Symptom Score where appropriate. This assessment may be initiated in primary care settings.

Specialist assessment should also incorporate a measurement of flow rate and post void residual volume.

Cystoscopy should be offered to men with LUTS only when clinically indicated, for example, in the presence of the following features from their history:

- Recurrent infection
- Sterile pyuria
- Haematuria
- Profound symptoms
- Pain

Additional contextual information may also inform clinical decision-making around the use of cystoscopy in men with LUTS. Such factors might include, but not be limited to:

- Smoking history
- Travel or occupational history suggesting a high risk of malignancy
- Previous surgery

Other adjunct investigations may become necessary in specific circumstances and are dealt with in the NICE guideline.

Rationale for Recommendation

In the context of male lower urinary tract symptoms (LUTS), cystoscopy may offer indirect evidence regarding an underlying cause (commonly prostatic enlargement, for example). However, no evidence was discovered in preparing NICE guideline CG97 to suggest any benefit, in terms of outcome, related to performing cystoscopy in men with uncomplicated LUTS (i.e. LUTS with no clinical evidence of underlying bladder pathology). The consensus opinion of the NICE guideline development group therefore aligned with the position that unless likely to uncover other pathology, cystoscopy should not be performed in men presenting with LUTS.

The European Association of Urology guideline on the management of non-neurogenic male LUTS summarises evidence demonstrating a lack of clear correlation between findings on cystoscopy and findings on investigations into bladder function (urodynamic assessment).

References

1. NICE clinical guideline 97. Lower urinary tract symptoms in men: management. <https://www.nice.org.uk/guidance/cg97>
2. European Association of Urology guideline on the management of non-neurogenic male LUTS <https://uroweb.org/wp-content/uploads/EAU-Guidelines-on-the-Management-of-Non-neurogenic-Male-LUTS-2018-large-text.pdf>
3. Shoukry, I., et al. Role of uroflowmetry in the assessment of lower urinary tract obstruction in adult males. Br J Urol, 1975. 47: 559. <https://www.ncbi.nlm.nih.gov/pubmed/1191927>
4. Anikwe, R.M. Correlations between clinical findings and urinary flow rate in benign prostatic hypertrophy. Int Surg, 1976. 61: 392. <https://www.ncbi.nlm.nih.gov/pubmed/61184>
5. el Din, K.E., et al. The correlation between bladder outlet obstruction and lower urinary tract symptoms as measured by the international prostate symptom score. J Urol, 1996. 156: 1020. <https://www.ncbi.nlm.nih.gov/pubmed/8583551>

1.1.9 I - Surgical intervention for benign prostatic hyperplasia

Summary of intervention

Transurethral resection of prostate (TURP) is a therapeutic procedure involving removal of tissue from the inner aspect of the prostate using diathermy, via an endoscopic approach. It is commonly undertaken for voiding lower urinary tract symptoms (LUTS) presumed secondary to benign prostatic hyperplasia (BPH).

TURP is undertaken on an in-patient basis, with a catheter left in-situ for 24-48 hours post-op for the purpose of irrigation. TURP may be undertaken under either general or spinal anaesthesia.

TURP causes temporary discomfort, occasionally pain, haematuria and is associated with small risks of infection and acute urinary retention after removal of the catheter. There is also a risk of sexual dysfunction following TURP. There are small but significant risks of significant harm, including severe fluid and electrolyte imbalances associated with absorption of large volumes of irrigating fluid (TUR syndrome). TUR syndrome can be avoided by using bipolar diathermy, a variant of the standard technology.

TURP is the longest established of a range of endoscopic surgical procedures for benign enlargement of the prostate, with varying indications and potential complications. These include, among others:

- Transurethral incision of the prostate (TUIP) or Bladder Neck Incision (BNI)
- Holmium LASER enucleation of the prostate
- 532 nm ('Greenlight') laser vaporisation of the prostate
- UroLift
- Transurethral needle ablation of the prostate (TUNA)
- Transurethral vaporisation of the prostate (TUVP)
- Transurethral water vapour therapy (Rezüm)

Open simple/benign prostatectomy is uncommonly undertaken in men with very large prostates and problematic symptoms. Newer ablative therapies are currently under evaluation and non-surgical procedures such as prostatic artery embolisation (PAE)

Number of interventions in 2018/19

14,562

Proposal

Only men with severe voiding symptoms, or in whom conservative management options and drug treatment have been unsuccessful, should be offered surgical intervention. Surgery is indicated (in healthy men) in complicated BPH i.e. chronic retention with renal impairment as evidenced by hydronephrosis and impaired GFR, and in most cases of acute retention secondary to BPH.

As such, a staged approach to managing voiding LUTS is recommended:

1. Conservative, or lifestyle interventions should be discussed.
2. Drug therapy should then be considered, in the context of more bothersome LUTS, or LUTS not responding to simple lifestyle interventions.
3. Where bothersome LUTS persist alongside high, or unchanged International Prostate Symptom Scores, or in the context of urinary tract infections, bladder stones or urinary retention, surgical intervention should be considered using a shared decision-making approach.

Men considering surgical intervention should be counselled thoroughly regarding alternatives to and outcomes from surgery. The quality of this counselling is deemed to be of major importance with respect to men's future experience and outcomes.

Following a discussion about whether to intervene surgically, men should be counselled about their preferred and most suitable surgical modality, incorporating reference to available evidence. Practical concerns, including the distance required to travel to pursue a given modality of surgical treatment are also important.

Appropriate support should be provided to make shared decisions pertinent to physical, emotional, psychological and sexual health. If appropriate, carers should be informed and involved.

With respect to surgical modality:

- The UroLift system relieves lower urinary tract symptoms while avoiding the risk to sexual function and should be considered as an alternative to current surgical procedures for use in a day-case setting in men who are aged 50 years and older and who have a prostate of less than 100 ml without an obstructing middle lobe.
- TURP, TUVP (including laser prostatic vaporisation) or HoLEP should be offered to men with voiding LUTS presumed secondary to BPH.
- HoLEP should be performed within centres specialising in the technique, or where mentorship arrangements are in place.
- TUIP should be offered to men with a prostate estimated to be smaller than 30ml.
- Open prostatectomy should only be offered as an alternative to endoscopic surgery, to men with prostates estimated to be larger than 80-100ml.
- Transurethral needle ablation, transurethral microwave thermotherapy, high-intensity focused ultrasound, transurethral ethanol ablation of the prostate *should not* be offered as alternative surgical treatments for voiding LUTS presumed secondary to BPH.

Of note, some men with bothersome LUTS will have undergone multichannel cytometry, establishing clear evidence of bladder outlet obstruction. These men are the most likely to benefit from surgery, with guidance on when to undertake such assessment covered elsewhere in NICE and European guidelines.

Rationale for Recommendation

NICE guidance provides clear evidence, in clinical and cost-effectiveness terms, that patients voiding LUTS presumed secondary to BPH, should be offered surgical intervention, *only* when those symptoms are severe, or when conservative management options have been unsuccessful.

TURP has long been the mainstay of surgical treatment for voiding LUTS presumed secondary to BPH. The newer surgical modalities outlined above have therefore been evaluated in comparison with TURP, as well as conservative management. NICE CG97 accordingly incorporated a comprehensive matrix of comparative studies between treatment modalities within its evidence review. This reflects increasing complexity in decision-making around surgical intervention, increasingly involving 'which', as well as 'when' or 'whether' surgery should be offered.

The recommendation proposed here reflects the full breadth of comparative studies between surgical intervention and conservative management, as well as between different modalities of surgical intervention forming the basis of NICE CG97.

References

1. NICE clinical guideline 97. Lower urinary tract symptoms in men: management. <https://www.nice.org.uk/guidance/cg97>
2. NICE guidance UroLift for treating lower urinary tract symptoms of benign prostatic hyperplasia [Medical technologies guidance MTG 26]: <https://www.nice.org.uk/guidance/mtg26>
3. European Association of Urology guideline on the management of non-neurogenic male LUTS <https://uroweb.org/wp-content/uploads/EAU-Guidelines-on-the-Management-of-Non-neurogenic-Male-LUTS-2018-large-text.pdf>
4. GIRFT Urology Report: <https://gettingitrightfirsttime.co.uk/surgical-specialty/urology-surgery/>

1.1.10 J - Discectomy

Summary of intervention

A discectomy is the surgical removal of intervertebral disc material to treat the symptoms resulting from compression of one or more spinal nerve roots. This loose material, which is part of the natural degeneration of the disc with age, is often described as bulging, prolapsed or slipped, resulting in pressure on nerve roots. The symptoms it causes are called radiculopathy (e.g. sciatica) and can include pain, tingling, pins and needles, numbness, weakness, and rarely bowel and bladder problems. As more often than not the symptoms will settle naturally, non-operative treatment is the preferred initial option.

Number of interventions in 2018/19

3,488

Proposal

Patients presenting with radiculopathy who show objective evidence of clinical improvement within six weeks (e.g. VAS pain scores, ODI) are more likely than not to

continue improving with non-operative treatment as the natural history of most intervertebral disc herniations is favourable.

Primary care management typically includes reassurance, advice on continuation of activity with modification, weight-loss, analgesia, physiotherapy and reviewing patients who are high risk of developing chronic pain (i.e. STaRT Back).

Persistent symptoms may warrant onward referral to spinal services for consideration of interventional pain management injections (e.g. nerve root blocks / caudal epidural injections) or surgery.

In the presence of concordant MRI changes, Discectomy may be offered to patients with compressive nerve root signs and symptoms lasting > 6 weeks despite best efforts with non-operative management.

Rationale for Recommendation

There remains a reasonable body of evidence to show that in carefully selected patients lumbar discectomy may lead to a greater improvement in pain scores than in non-operatively treated patients.

In other studies, however, because of the irreversible degenerative changes, surgery has not shown a benefit over non-operative treatment in mid and long-term follow-up.

Lengthy periods of ineffective non-operative care may prompt repeated emergency department attendances, issues with chronic pain, significant neurological dysfunction and time off work.

Please note: This guideline is not intended to cover patients who demonstrate a deterioration in neurological function (e.g. objective weakness, sexual dysfunction, cauda equina syndrome). These patients require an urgent referral to an acute spinal centre for further evaluation and imaging as non-operative treatment may lead to irreversible harm.

References

1. NICE Low back pain and sciatica in over 16s: assessment and management (November 2016) <https://www.nice.org.uk/guidance/ng59>
2. National Low Back and Radicular Pain Pathway 2017 <https://www.ukssb.com/improving-spinal-care-project>
3. STaRT Back. <https://www.nice.org.uk/guidance/ng59/resources/endorsed-resource-start-back-screening-tool-with-matched-treatment-options-4906309933>
4. Back Skills Training (BeST): Group cognitive behavioural treatment for low-back pain in primary care: a randomised controlled trial and cost-effectiveness analysis. Prof Sarah E Lamb DPhil et al on behalf of the Back Skills Training Trial investigators. [https://doi.org/10.1016/S0140-6736\(09\)62164-4](https://doi.org/10.1016/S0140-6736(09)62164-4)
5. Surgical versus Non-Operative Treatment for Lumbar Disc Herniation: Four-Year Results for the Spine Patient Outcomes Research Trial (SPORT). Weinstein JN *et al. Spine (Phila Pa 1976)*. 2008 Dec 1; 33(25): 2789–2800.doi: 10.1097/BRS.0b013e31818ed8f4
6. Surgical versus Non-Operative Treatment for Lumbar Disc Herniation: Eight-Year Results for the Spine Patient Outcomes Research Trial (SPORT). Weinstein JN *et al. Spine (Phila Pa 1976)*. 2014 January 1; 39(1): 3–16. doi:10.1097/BRS.0000000000000088

<p>7. Surgical versus non-operative treatment for lumbar disc herniation: a systematic review and meta-analysis. Chen BL <i>et al.</i> Clin Rehabil. 2018 Feb;32(2):146-160. doi: 10.1177/0269215517719952.</p> <p>8. Surgery versus prolonged conservative treatment for sciatica: 5-year results of a randomised controlled trial. Lequin MB <i>et al.</i> BMJ Open 2013;3:e002534. doi:10.1136/bmjopen-2012-002534.</p> <p>9. Prolonged Physiotherapy versus Early Surgical Intervention in Patients with Lumbar Disk Herniation: Short-term Outcomes of Clinical Randomized Trial. Abou-Elroos DA <i>et al.</i> Asian Spin J 2017; 11(4):531-537. doi:10.4184/asj.2017.11.4.531</p>

1.1.11 K - Radiofrequency facet joint denervation

Summary of intervention
Radiofrequency denervation, also known as ‘dorsal rhizotomy’ or ‘radiofrequency ablation,’ is a non-surgical and minimally invasive procedure that uses heat to reduce or stop the transmission of pain signals arising from one or more spinal facet joints. It is only recommended when other alternatives have failed.
Number of interventions in 2018/19
1,618
Proposal
Radiofrequency facet joint denervation (RFD) is recommended by NICE (NG59) as an adjunct in the management of chronic low back pain when non-operative treatment has failed, and the main source of pain is thought to arise from one or more degenerate facet joints.
Rationale for Recommendation
<p>The facet joints are pairs of joints that stabilise and guide motion in the spine. These joints are innervated by the medial branches of the dorsal rami. In current clinical practice, suitable patients are first offered one or more diagnostic injections to determine which facet joints are contributing to their symptoms. This particular type of injection is called a ‘medial branch block,’ and differs to facet joint injections, which are no longer recommended by NICE or GIRFT.</p> <p>Physiotherapy, with appropriate psychological therapies where necessary, should be considered as an early intervention to support the individual.</p> <p>Medial branch blocks should be offered only in accordance with the low back pain pathway (https://www.boa.ac.uk/uploads/assets/e26cc007-74c3-4b22-94e408dd54ac79da/spinal%20pathfinder.pdf). Patients who experience a positive response to a medial branch block (i.e. a significant but short-term improvement in pain symptoms) may be offered a neurodestructive procedure called radiofrequency denervation in an attempt to achieve longer-term pain relief. Some patients may experience a prolonged response to medial branch blockade such that further interventional treatment is no longer required.</p> <p>Radiofrequency energy is delivered along an insulated needle in contact with the target nerves. This focussed electrical energy heats and denatures the nerve. This process may allow axons to regenerate with time requiring the repetition of the radiofrequency procedure.</p>

Research is ongoing to determine the optimum frequency of repeat radiofrequency denervation (<https://www.nice.org.uk/researchrecommendation/radiofrequency-denervation-what-is-the-clinical-and-cost-effectiveness-of-radiofrequency-denervation-for-chronic-low-back-pain-in-the-long-term>)

References

1. NICE Low back pain and sciatica in over 16s: assessment and management (November 2016) <https://www.nice.org.uk/guidance/ng59>
2. NICE <https://www.nice.org.uk/guidance/ng59/evidence/full-guideline-invasive-treatments-pdf-2726157998>
3. National Low Back and Radicular Pain Pathway 2017: <https://www.boa.ac.uk/uploads/assets/e26cc007-74c3-4b22-94e408dd54ac79da/spinal%20pathfinder.pdf>
4. Back Skills Training (BeST): Group cognitive behavioural treatment for low-back pain in primary care: a randomised controlled trial and cost-effectiveness analysis. Prof Sarah E Lamb DPhil et al on behalf of the Back Skills Training Trial investigators. [https://doi.org/10.1016/S0140-6736\(09\)62164-4](https://doi.org/10.1016/S0140-6736(09)62164-4)
5. STarT Back. <https://www.nice.org.uk/guidance/ng59/resources/endorsed-resource-start-back-screening-tool-with-matched-treatment-options-4906309933>
6. Maas ET, Ostelo RWJG, Niemisto L, Jousimaa J, Hurri H, Malmivaara A, van Tulder MW. Radiofrequency denervation for chronic low back pain. Cochrane Database of Systematic Reviews 2015, Issue 10. Art. No.: CD008572. DOI: 10.1002/14651858.CD008572.pub2
7. Faculty of Pain Management, Core Standards for Pain Management Services in the UK. <https://fpm.ac.uk/standards-publications-workforce/core-standards>

1.1.12 L - Exercise ECG for screening for coronary heart disease

Summary of intervention

Exercise electrocardiogram (ECG) is a type of cardiac stress test that should no longer be used to screen for coronary heart disease (CHD).

Number of interventions in 2018/19

49,095

Proposal

Exercise ECG has no role in the screening of asymptomatic and low risk patients because it has a very low pre-test probability of identifying pathology. Risk calculators, such as Systematic COronary Risk Evaluation (SCORE), are instead recommended to identify patients who are at greater risk of CHD.

Only high-risk asymptomatic patients require further investigation for CHD, and functional imaging or coronary CTA may be considered for cardiovascular risk assessment in those patients.

Under the guidance of cardiologists, the test has a limited role for diagnosis in selected patients with symptoms suggestive of CHD, and/or where CHD has been diagnosed to confirm functional capacity or severity.

Rationale for Recommendation

In randomised control trials, screening with exercise ECG in asymptomatic patients found no improvement in health outcomes, even when focussing on higher risk populations such as those with diabetes. There is no research examining whether the addition of exercise ECG to traditional CHD risk factors results in accurate

reclassification, however cohort studies looking at the role of resting ECG abnormalities found inconsistent impact on clinical decisions.

Reliability of exercise ECG testing varies based on many features including age, gender and known history of CHD, which significantly limits its utility as a screening tool. ECG sensitivity has been cited as 45-50% and specificity of 85-90%. Sensitivity and specificity data of exercise ECG testing is dependent upon the cohort of patients being studied: sensitivity is higher in patients with triple-vessel disease, and lower in patients with single-vessel disease. Gender differences means that exercise ECG is only moderately specific for the diagnosis of CHD in women.

The European Society of Cardiology (ESC) recommend the use of a risk-estimation system i.e. SCORE to calculate total risk estimation for asymptomatic patients >40 years of age without evidence of diabetes, chronic kidney disease, cardiovascular disease, or familial hypercholesterolemia. The assessment of a family history of premature CVD is recommended. A validated clinical score should be used in patients <50 years of age who have a family history of premature CVD in a first-degree relative.

In asymptomatic but high-risk adults (with diabetes, a strong family history of CVD, or when previous risk-assessment tests suggest a high risk of CVD), functional imaging or coronary CTA may be considered for cardiovascular risk assessment.

For people at low risk of cardiovascular disease, the potential harms of screening with exercise ECG is thought by some (including the US Preventative Service Task Force) to be equal to or exceed the potential benefits. For people at intermediate to high risk, current evidence is thought to be insufficient to assess the balance of benefits and harms of screening. Therefore, the US Preventative Services Task Force recommends against screening for CHD with resting or exercise ECG in adults at low risk for CHD events.

Chou et al cite that exercise ECG screening has not been shown to improve patient outcomes and is instead associated with potential harms due to false-positive results leading to potentially unnecessary tests and procedures.

Overall in asymptomatic patients without a history of CHD, the potential harms of exercise ECG (which includes arrhythmias, acute MI, sudden cardiac death and harms of subsequent angiography or revascularisation procedures after abnormal test) are considered by many to exceed the screening benefit. However, literature examining the frequency of these harms is lacking.

References

1. NICE Guidance. Chest pain of recent onset: assessment and diagnosis. 2016. <https://www.nice.org.uk/guidance/cg95>
2. Jonas D, Reddy S, Middleton J et al. Screening for cardiovascular disease risk with electrocardiography: an evidence review for the US preventative services task force. Rockville MD: Agency for healthcare research and quality. 2018.
3. Jin J. Screening for cardiovascular disease risk with ECG. JAMA, 2018; 319:22.
4. Koskinas K. Appropriate use of non-invasive testing for diagnosis of stable coronary artery disease. J Cardiology practice. 2014:12.
Chou R. et al. Cardiac screening with electrocardiography, stress echocardiography, or myocardial perfusion imaging: advice for high-value

care from the American College of Physicians. Ann Intern Med. 2015 Mar 17;162(6):438-47. doi: 10.7326/M14-1225.

5. Juhani Knuuti, et al. ESC Scientific Document Group, 2019. ESC Guidelines for the diagnosis and management of chronic coronary syndromes: The Task Force for the diagnosis and management of chronic coronary syndromes of the European Society of Cardiology (ESC), European Heart Journal: <https://doi.org/10.1093/eurheartj/ehz425>.

1.1.13 M - Upper GI endoscopy

Summary of intervention

Endoscopy is an invasive procedure and is not always well tolerated. It carries significant risks and should not be used as a first-line indication in all patients.

Number of interventions in 2018/19

20,772

Proposal

Upper GI Endoscopy should only be performed if the patient meets the following criteria:

Urgent: (Within two weeks)

- Any dysphagia (difficulty in swallowing) OR
- Aged 55 and over with weight loss and any of the following:
 - Upper abdominal pain
 - Reflux
 - Dyspepsia (4 weeks of upper abdominal pain or discomfort)
 - Heartburn
 - Gastric reflux
 - Nausea or vomiting
- Haematemesis (Vomiting blood) OR
- Those aged 55 or over who have one or more of the following:
 - Treatment resistant dyspepsia (as above), upper abdominal pain with low haemoglobin level (blood level) OR
 - Raised platelet count with any of the following: nausea, vomiting, weight loss, reflux, dyspepsia, upper abdominal pain OR
 - Nausea and vomiting for any of the following: weight loss, reflux, dyspepsia, upper abdominal pain.

For the assessment of Upper GI bleeding:

- Endoscopy should be performed for unstable patients with severe acute upper gastrointestinal bleeding immediately after resuscitation
- Endoscopy should be performed within 24 hours of admission for all other patients with upper gastrointestinal bleeding.

For the investigation of symptoms:

- Clinicians should consider endoscopy:
- Any age with gastro-oesophageal symptoms that are non-responsive to treatment or unexplained
- With suspected GORD who are thinking about surgery
- With H pylori that has not responded to second-line eradication

H pylori and peptic ulcer:

- Repeat endoscopy should be offered 6-8 weeks after beginning treatment for H pylori and gastric ulcer.

Barrett's oesphagus:

- Consider endoscopy to diagnose Barrett's Oesophagus if the person has GORD (endoscopically determined oesphagitis or endoscopy- negative reflux disease).
- Consider endoscopy surveillance if person is diagnosed with Barrett's Oesophagus

Coeliac disease:

- An endoscopy is required to take duodenal biopsies to corroborate positive coeliac serology.

Surveillance endoscopy:

- Patients diagnosed with extensive gastric atrophy [GA] or gastric intestinal metaplasia, [GIM] (defined as affecting the antrum and the body) should have endoscopy surveillance every three years.
- Patients diagnosed with GA or GIM just in the antrum with additional risk factors- such as strong family history of gastric cancer or persistent H pylori infection, should undergo endoscopy every three years.

Screening endoscopy can be considered in:

- Individuals aged 50 and over, with multiple risk factors for gastric cancer (H. Pylori infection, family history of gastric cancer- particularly in first degree relative-, pernicious anaemia, male, smokers)

Post excision of adenoma:

- Following complete endoscopic excision of adenomas, gastroscopy should be performed at 12 months and then annually thereafter when appropriate.

Rationale for Recommendation

NICE and the British Society for Gastroenterology recommend the above criteria for use of endoscopy.

Endoscopy is a very invasive procedure for patients and is not always well tolerated. There are numerous risks associated with endoscopy, such as reaction to sedation, bleeding or perforation, the latter of which could lead to an emergency operation if serious enough. This is one of the reasons why endoscopy should not be a first-line of investigation in all patients.

For example, the first-line testing for H Pylori (and therefore associated dyspepsia) should be Urea breathe test or stool antigen test. This test is much less invasive for the patient.

In regard to the efficiency of services and value for money, endoscopy when used appropriately is of value. However, a literature review and meta-analysis have shown diagnostic overuse with significant resource implications. Of the meta-analyses results it found that 22% of OGDs were inappropriate indications. The aim of this

rationale is not only to improve value, whilst still achieving high care for patients, and not submitting patients to unnecessary invasive endoscopies that can hold serious complications.

References

1. NHS Advice: <https://www.nhs.uk/conditions/Endoscopy/>
2. NICE Guidance: <https://www.nice.org.uk/guidance/ng12>
3. British Society of Gastroenterology guidelines: <https://gut.bmj.com/content/68/9/1545>
4. NHS Advice: <https://www.nhs.uk/conditions/gastroscopy/risks/>
5. Malik HT, Marti J, Darzi A, Mossialos E. Savings from reducing low-value general surgical interventions. Br J Surg. 2018 Jan;105(1):13-25. doi:10.1002/bjs.10719
6. Di Giulio E, Hassan C, Marmo R, Zullo A, Annibale
7. B. Appropriateness of the indication for upper endoscopy: a meta-analysis. Dig Liver Dis 2010; 42: 122 – 126.
8. NICE guidance: Gastro-oesophageal reflux disease and dyspepsia in adults: investigation and management. September 2014. CG184
9. NICE guidance: Acute upper gastrointestinal bleeding in over 16s management. June 2012. CG141

Interventions including those in diagnostic and outpatient settings where data are available but further exploration of additional datasets is proposed to improvement robustness and establish national activity goals.²²

1.1.14 N - Appropriate colonoscopy

Summary of intervention

Colorectal carcinoma [CRC] is one of the most common cancers in the UK with more than 40,000 new cases diagnosed each year. An estimated 35% of CRC is due to heritable factors.

While colonoscopy is a safe procedure, there is a small risk of complications – including pain, intestinal perforation or major haemorrhage as well as issues related to any sedative used. Colonoscopy should therefore be used appropriately in the management of CRC in people who have been identified with an increased lifetime risk of CRC due to hereditary factors.

Number of interventions in 2018/19

445,981²³

Proposal

Family history of CRC

For individuals with moderate familial CRC risk:

- Offer one-off colonoscopy at age 55 years

²²For these intervention data, procedure coding is available however diagnosis and indication coding is either partial or has limitations (see Appendix 5 tables for each intervention) therefore it was inappropriate to calculate goals for these interventions.

²³ The number of interventions (445,981) represents colonoscopies for all indications, including those with symptoms and/or risk factors.

- Subsequent colonoscopic surveillance should be performed as determined by post-polypectomy surveillance guidelines

For individuals with high familial CRC risk (a cluster of 3x FDRs with CRC across >1 generation):

- Offer colonoscopy every 5 years from age 40 years to age 75 years.

Lynch Syndrome (LS) and Lynch-like Syndrome

For individuals with LS that are *MLH1* and *MSH2* mutation carriers:

- Offer colonoscopic surveillance every 2 years from age 25 years to age 75 years

For individuals with LS that are *MSH6* and *PMS2* mutation carriers:

- Offer colonoscopic surveillance every 2 years from age 35 years to age 75 years

For individuals with Lynch-like Syndrome with deficient MMR tumours without hypermethylation/BRAF pathogenic variant and no pathogenic constitutional pathogenic variant in MMR genes (and their unaffected FDRs), and no evidence of biallelic somatic MMR gene inactivation:

- Offer colonoscopic surveillance every 2 years from age 25 years to age 75 years

Early Onset CRC (EOCRC)

For individuals diagnosed with CRC under age 50 years, where hereditary CRC symptoms have been excluded:

- Offer standard post-CRC colonoscopy surveillance after 3 years
- Then continue colonoscopic surveillance every 5 years until eligible for national screening

Serrated Polyposis Syndrome (SPS)

For individuals with SPS:

- Offer colonoscopic surveillance every year from diagnosis once the colon has been cleared of all lesions >5mm in size
- If no polyps \geq 10mm in size are identified at subsequent surveillance examinations, the interval can be extended to every 2 years

For first degree relatives of patients with SPS:

- Offer an index colonoscopic screening examination at age 40 or ten years prior to the diagnosis of the index case
- Offer a surveillance colonoscopy every 5 years until age 75 years, unless polyp burden indicates an examination is required earlier according to post-polypectomy surveillance guidelines

Multiple Colorectal Adenoma (MCRA)

For individuals with MCRA (defined as having 10 or more metachronous adenomas):

- Offer colonoscopic surveillance every 1-2 years from diagnosis to age 75 years

Familial Adenomatous Polyposis (FAP)

For individuals confirmed to have FAP on predictive genetic testing:

- Offer colonoscopic surveillance from 12-14 years

- Then offer surveillance colonoscopy every 1-3 years, personalised according to colonic phenotype

For individuals who have a first degree relative with a clinical diagnosis of FAP (i.e. “at risk”) and in whom a *APC* mutation has not been identified:

- Offer colorectal surveillance from 12-14 years
- Then offer every 5 years until either a clinical diagnosis is made and they are managed as FAP or the national screening age is reached

MUTYH-associated Polyposis (MAP)

For individuals with MAP:

- Offer colorectal surveillance from 18-20 years, and if surgery is not undertaken, repeat annually

For monoallelic MUTYH pathogenic variant carriers:

- The risk of colorectal cancer is not sufficiently different to population risk to meet thresholds for screening and routine colonoscopy is not recommended.

Peutz-Jeghers Syndrome (PJS)

For asymptomatic individuals with PSJ:

- Offer colorectal surveillance from 8 years
- If baseline colonoscopy is normal, deferred until 18 years, however if polyps are found at baseline examination, repeat every 3 years

For symptomatic patients, investigate earlier.

Juvenile Polyposis Syndrome (JPS)

For asymptomatic individuals with JPS:

- Offer colorectal surveillance from 15 years
- Then offer a surveillance colonoscopy every 1-3 years, personalised according to colorectal phenotype

For symptomatic patients, investigate earlier.

For some patients with multiple risk factors for CRC, for example those with Lynch Syndrome and inflammatory bowel disease/multiple polyps, more frequent colonoscopy may be indicated. This needs to be guided by clinicians but with a clear scientific rationale linked to risk management.

Rationale for Recommendation

This recommendation is based on the 2019 guidelines published by the British Society of Gastroenterology, the Association of Coloproctologists of Great British and Ireland and United Kingdom Cancer Genetics Group. The complete guidelines can be found here: <https://www.bsg.org.uk/resource/guidelines-for-the-management-of-hereditary-colorectal-cancer.html>

Heritable factors account for approximately 35% of CRC risk, and almost 30% of the population in the UK have a family history of CRC. It is possible to stratify individuals to identify cohorts of patients with hereditary risk. This can help target management and

determine who will benefit the most from colonoscopic surveillance and at what frequency.

References

1. Guidelines for the management of hereditary colorectal cancer from the British Society of Gastroenterology [BSG]/ Association of Coloproctologists of Great Britain and Ireland [ACPGBI]/ United Kingdom Cancer Genetics Group [UKCGG] <https://www.bsg.org.uk/resource/guidelines-for-the-management-of-hereditary-colorectal-cancer.html>
2. NICE Colorectal cancer: diagnosis and management Clinical guideline [CG131]: <https://www.nice.org.uk/guidance/cg131/chapter/1-Recommendations#ongoing-care-and-support>
3. NICE Colorectal cancer prevention: Colonoscopic surveillance in adults with ulcerative colitis, Crohn's disease or adenomas guideline [CG118]: <https://www.nice.org.uk/guidance/cg118>
4. Cancer Research UK. Colonoscopy. Available from: <https://www.cancerresearchuk.org/about-cancer/cancer-in-general/tests/colonoscopy>

1.1.15 0 - Repeat Colonoscopy

Summary of intervention

Colorectal carcinoma [CRC] is one of the most common cancers in the UK with more than 40,000 new cases diagnosed each year. Polyps are extremely common and certain types [colorectal adenomas and serrated lesions] have the potential to progress into CRC.

Colonoscopy can assist in the diagnosis of CRC and several other pathologies, including colonic polyps. Polyp removal [or polypectomy] can be performed endoscopically and is an effective way to treat pre-malignancy polyps [which includes both serrated polyps [excluding diminutive [1-5mm] rectal hyperplastic polyps] and adenomatous polyps. It does not include other polyps such as post inflammatory polyps] before they progress to cancer. Colonoscopy with or without polypectomy is a safe procedure however there is a small risk of complications - including pain, intestinal perforation or major haemorrhage as well as issues related to any sedative used.

Colorectal carcinoma is often treated by surgical resection, especially for people with potentially curative disease. Individuals who have had treatment for colorectal carcinoma and adenomas are known to be at high-risk of recurrence.

While reducing colorectal mortality is an important aim of colonoscopic surveillance, the main aim is to prevent colorectal cancer by resecting premalignant polyps. Many patients benefit from this alone and do not require subsequent surveillance.

Number of interventions in 2018/19

445,981²⁴

Proposal

Risk Surveillance Criteria for Colonoscopy

²⁴ The number of interventions (445,981) represents colonoscopies for all indications, including those with symptoms and/or risk factors.

Either of the following put individuals at high-risk for future colorectal cancer following polypectomy:

- 2 or more premalignant polyps including at least one advanced colorectal polyp (defined as a serrated polyp of at least 10mm in size or containing any grade of dysplasia, or an adenoma of at least 10mm in size or containing high-grade dysplasia); **OR**
- 5 or more premalignant polyps

Surveillance colonoscopy after polypectomy

For individuals at high-risk and under the age of 75 **and** whose life-expectancy is great than 10 years:

- Offer one-off surveillance colonoscopy at 3 years.

For individuals with no high-risk findings:

- No colonoscopic surveillance should be undertaken
- Individuals should be strongly encouraged to participate in their national bowel screening programme when invited
- For individuals not at high-risk who are more than 10 years younger than the national bowel screening programme lower age-limit, consider for surveillance colonoscopy after 5 or 10 years, individual to age and other risk factors

Surveillance colonoscopy after potentially curative CRC resection

- Offer a clearance colonoscopy 1 year after initial surgical resection
- Then offer a surveillance colonoscopy after a further 3 years
- Further surveillance colonoscopy to be determined in accordance with the post-polypectomy high-risk criteria

Surveillance after pathologically *en bloc* R0 EMR or ESD of LNPCPs or early polyp cancers:

- No site-checks are required
- Offer surveillance colonoscopy after 3 years
- Further surveillance colonoscopy to be determined in accordance with the post-polypectomy high-risk criteria

Surveillance after piecemeal EMR or ESD of LNPCPs (large non-pedunculated colorectal polyps of at least 20mm in size)

- Site-checks at 2-6 months and 18 months from the original resection Once no recurrence is confirmed, patients should undergo post-polypectomy surveillance after 3 years
- Further surveillance colonoscopy to be determined in accordance with the post-polypectomy high-risk criteria

Surveillance where histological completeness of excision cannot be determined in patients with: (i) a non-pedunculated polyps of 10-19mm in size, or (ii) an adenoma containing high-grade dysplasia, or (iii) a serrated polyp containing any dysplasia:

- Site-check should be considered within 2-6 months.
- Further surveillance colonoscopy to be determined in accordance with the post-polypectomy high-risk criteria

Ongoing colonoscopic surveillance

- To be determined by the findings at each surveillance procedure, using the high-risk criteria to stratify risk
- Where there are no high-risk findings, colonoscopic surveillance should cease but individuals should be encouraged to participate in the national bowel screening programme when invited

Rationale for Recommendation

This recommendation is based on the 2019 guidelines published by the British Society of Gastroenterology, the Association of Coloproctology of Great British and Ireland and Public Health England. The complete guidelines can be found here: <https://www.bsg.org.uk/resource/bsg-acpgbi-phe-post-polypectomy-and-post-colorectal-cancer-resection-surveillance-guidelines.html>

Premalignant polyps are common, occurring in a quarter to a half of all people of screening age, yet only about 5% of the population will develop CRC during their life. As such, only a minority of people with polyps will develop CRC, meaning that most people will not benefit from post-polypectomy surveillance.

It is an increasingly held view that the greatest benefit in terms of CRC prevention is derived from the initial polypectomy, rather than from subsequent surveillance. It is possible to stratify individuals according to future risk and identify cohorts of patients with persistently elevated CRC risk beyond index polypectomy, yet even with current risk stratification, surveillance places a considerable burden on patients and endoscopy services: approximately 15% of the half a million colonoscopies performed each year in the UK are performed for polyp surveillance.

References

1. BSG/ACPGBI/PHE Post-polypectomy and post-colorectal cancer resection surveillance guidelines. <https://www.bsg.org.uk/resource/bsg-acpgbi-phe-post-polypectomy-and-post-colorectal-cancer-resection-surveillance-guidelines.html>
2. NICE Colorectal cancer: diagnosis and management Clinical guideline [CG131]: <https://www.nice.org.uk/guidance/cg131/chapter/1-Recommendations#ongoing-care-and-support>
3. NICE Colorectal cancer prevention: Colonoscopic surveillance in adults with ulcerative colitis, Crohn's disease or adenomas guideline [CG118]: <https://www.nice.org.uk/guidance/cg118>
4. Cancer Research UK. Colonoscopy: <https://www.cancerresearchuk.org/about-cancer/cancer-in-general/tests/colonoscopy>

1.1.16 P - ERCP in acute gallstone pancreatitis without cholangitis

Summary of intervention

Early endoscopic retrograde cholangiopancreatography (ERCP) for acute gallstone pancreatitis without cholangitis is not recommended.

Number of interventions in 2018/19

310

Proposal

Early ERCP in the treatment of acute gallstone pancreatitis, should only be performed if there is evidence of cholangitis or ongoing obstruction of the biliary tree. Early ERCP refers to ERCP being performed on the same admission, ideally within 24 hours.

Rationale for Recommendation

Gallstones are the most common cause of pancreatitis, causing up to 50% of cases. ERCP should be reserved for patients in whom therapeutic intervention is likely because ERCP is a very invasive procedure and carries a morbidity of 5-10% and a mortality rate of 0.1%- 0.5%. Risks associated with ERCP include risks of endoscopy and specific risks associated with ERCP, including pancreatitis, cholangitis, bleeding, and retroduodenal perforation.

ERCP is recommended for severe acute gallstone pancreatitis, dilatation of the common bile duct on imaging, jaundice, cholangitis or persistently abnormal and rising liver enzymes or if clinical deterioration occurs in patients with mild signs at presentation but who fail to improve after 48 hours.

Early ERCP for acute pancreatitis without cholangitis has been shown to have a higher mortality rate and is of little benefit in comparison to delayed ERCP. Many gallstones are passed spontaneously.

References

1. Sages Patient Information: <https://www.sages.org/publications/patient-information/patient-information-for-ercp-endoscopic-retrograde-cholangio-pancreatography-from-sages/>
2. Tse F, Yuan Y. Early routine endoscopic retrograde cholangiopancreatography strategy versus early conservative management strategy in acute gallstone pancreatitis. *Cochrane Database Syst Rev* 2012; (5)CD009779.
3. NICE guideline [NG104]: <https://www.nice.org.uk/guidance/ng104>,
4. Schuster k, Holena D, salim A, savage S, crandall M, american association for the surgery of trauma emergency surgery guideline summaries: 2018, acute appendicitis, acute cholecystitis, acute diverticulitis, acute pancreatitis, and small bowel obstruction. *Trauma surg acute care open*. 2019; 4: e000281
5. Uy MC, Daez ML, Sy PP, Banez VP, Espinosa WZ, Talingdan-Te MC. Early ERCP in acute gallstone pancreatitis without cholangitis: a meta-analysis. *JOP* 2009; 10: 299-305.
6. Michael F Byrne, Gallstone pancreatitis – who really needs an ERCP? *Can J Gastroenterol*. 2006 Jan; 20(1): 15-17. PMID: 16432554
7. Malik HT, Marti J, Darzi A, Mossialos E. Savings from reducing low-value general surgical interventions. *Br J Surg*. 2018 Jan;105(1):13-25. doi:10.1002/bjs.10719.

1.1.17 Q - Cholecystectomy

Summary of intervention

Cholecystectomy is a surgical procedure that removes the gallbladder. The gallbladder is an organ located just below the liver on the right side of the body. It is usually performed laparoscopically (keyhole), but can be performed open, which involves a large cut under the right rib cage. A cholecystectomy can be performed for numerous indications, two of which are gallstones or gallstone pancreatitis.

An interval cholecystectomy is one that is performed some weeks after the initial acute presentation, while an index cholecystectomy is one that is performed at the time of acute admission.

Number of interventions in 2018/19

2,085

Proposal

For patients who are admitted to hospital with mild pancreatitis, index laparoscopic cholecystectomy should be performed within that admission. In patients with acute cholecystitis or gallstone pancreatitis, remove the gallbladder without discharging the patient to avoid delay and prevent recurrences. Patients diagnosed with acute cholecystitis should have their laparoscopic cholecystectomy on the same admission within 72 hours (NICE guidelines published in October 2014 state one week, but 72 hours is preferable).

Surgery for these patients may be challenging and can be associated with a higher incidence of complications (particularly beyond 96 hours) and a higher conversion rate from laparoscopic surgery to open surgery. These patients should be operated on by surgeons with experience of operating on patients with acute cholecystitis, or if not available locally, transfer to a specialist unit should be considered. Timely intervention is preferable to a delayed procedure, however, if the operation cannot be performed during the index admission it should be performed within two weeks of discharge.

Rationale for Recommendation

Numerous studies and literature reviews have shown that index cholecystectomy for mild pancreatitis is preferable to interval cholecystectomy.

Compared with interval cholecystectomy, index cholecystectomy reduced the rate of recurrent gallstone-related complications in patients with mild gallstone pancreatitis, with a very low risk of cholecystectomy-related complications. In patients with mild biliary pancreatitis, same-admission cholecystectomy reduces the rate of recurrent gallstone-related complications significantly from 17% to 5%. The readmission rate for gallstone related complications (pancreatitis, cholangitis, cholecystitis, choledocholithiasis or gallstone colic) is reduced in index versus interval cholecystectomy. It is recognised that index cholecystectomy can be more technically challenging due to inflammation, however, the immediate complication rate of the surgery (i.e. bile leak, wound infection) has been shown to largely similar between index and interval cholecystectomy.

References

1. NICE. Gallstone disease: diagnosis and management. October 2014. CG188: <https://www.nice.org.uk/guidance/cg188>
2. Malik HT, Marti J, Darzi A, Mossialos E. Savings from reducing low-value general surgical interventions. *Br J Surg*. 2018 Jan;105(1):13-25. doi:10.1002/bjs.10719
3. Schuster k, Holena D, salim A, savage S, crandall M, american association for the surgery of trauma emergency surgery guideline summaries: 2018, acute appendicitis, acute cholecystitis, acute diverticulitis, acute pancreatitis, and small bowel obstruction. *Trauma surg acute care open*. 2019; 4: e000281
4. da Costa DW, Bouwense SA, Schepers NJ, Besselink MG, van Santvoort HC, van Brunschot S et al.; Dutch Pancreatitis Study Group. Same-admission versus interval cholecystectomy for mild gallstone pancreatitis (PONCHO): a multicentre randomised controlled trial. *Lancet* 2015; 386:1261 – 1268.

5. Association of Upper Gastrointestinal Surgeons of Great Britain and Ireland pathway for management of acute gallstone disease
<https://www.augis.org/wp-content/uploads/2014/05/Acute-Gallstones-Pathway-Final-Sept-2015.pdf>
6. Gutt CN, Encke J, Köninger J, Harnoss JC, Weigand K, Kipfmüller K et al. Acute cholecystitis: early versus delayed cholecystectomy, a multicenter randomized trial [ACDC study, NCT00447304]. *Ann Surg* 2013; 258: 385–393.
7. Ozardes A, Tokac M, dumlu EG, bozkurt B, ciftci B, yetisir F, kilic M. Early versus delayed laparoscopic cholecystectomy for acute cholecystitis: a prospective, randomise study. *INt surg* 2014;99: 56-61

1.1.18 R – Appendicectomy without confirmation of appendicitis

Summary of intervention

Appendicitis is the most common cause of abdominal pain requiring surgical intervention.

In children appendicitis can often be diagnosed clinically, if there is diagnostic uncertainty, an ultrasound can confirm appendicitis. CT is not recommended in children given the risks of ionising radiation.

In adults negative appendicectomy can occur in up to 30% of cases where appendicitis is suspected on clinical grounds but imaging is not performed. In patients with typical symptoms, diagnosis can generally be made based on history, physical examination and blood analysis. The 'triple-screen' [CRP <10, WCC <10.5 and a neutrophil percentage <75%] has a negative predictive value >99% in excluding appendicitis, and imaging for appendicitis is not recommended in this setting

Where patients present with atypical or equivocal symptoms, imaging should be sought to reduce the negative appendicectomy rate. While both ultrasound and computed tomography [CT] are effective, ultrasound is preferred as a first-line investigation. This is particularly important in young patients or in female patients when there is a significant incidence of a gynaecological differential diagnosis (where US is superior to CT). CT may be more appropriate in obese patients where ultrasound is more challenging, or for older patients in whom the differential diagnosis may be broad and where CT is usually of more value.

Number of interventions in 2018/19

47,605

Proposal

Consider imaging of patients with the suspicion of acute appendicitis in a defined clinical pathway.

Where patients present with a high clinical suspicion of appendicitis, then imaging may not be necessary. If there is clinical doubt then imaging can reduce the negative appendicectomy rate. Most patients should have an ultrasound as the first-line investigation. If the diagnosis remains equivocal, a contrast-enhanced CT (CECT, preferably low dose) can be performed to give a definitive diagnosis prior to the patient returning to the surgical unit for a decision on management.

A pathway like this is dependent on the availability of an adequately skilled Radiologist (Consultant or Registrar) or Sonographer to perform the ultrasound assessment in a

timely fashion. If this is not possible discretion should be used to proceed directly to limited dose CECT of the abdomen and pelvis.

Rationale for Recommendation

Appendicitis is a common surgical emergency. In many cases, typical history and physical examination are sufficient to reach a clinical diagnosis of appendicitis. However, patients can have a negative appendicectomy so there is a role for imaging if there is any diagnostic doubt (some reports suggest this is a more cost-effective way of managing suspected appendicitis). Where imaging is indicated, ultrasound is considered the preferred first-line diagnostic intervention followed by a conditional CECT after an inconclusive ultrasound. MRI, while having a comparable accuracy to CECT, has played a limited role in diagnosis of appendicitis due to scanner access. However, the lack of ionising radiation makes it a safer option for younger or pregnant patients with an inconclusive ultrasound (where there is appropriate access and expertise).

References

1. Royal College of Surgeons Commissioning Guide: Emergency general surgery [acute abdominal pain] 2014. NICE accredited.: <https://www.rcseng.ac.uk/library-and-publications/rcs-publications/docs/emergency-general-guide/>
2. Bachur RG, Levy JA, Callahan MJ, Rangel SJ, Monuteaux MC. Effect of reduction in the use of computed tomography on clinical outcomes of appendicitis. *JAMA Pediatr* 2015; 169:755-760.
3. Frush DP, Frush KS, Oldham KT. Imaging of acute appendicitis in children: EU versus US ... or US versus CT? A North American perspective. *Pediatr Radiol* 2009; 39:500-505.
4. Garcia K, Hernanz Schulman M, Bennett DL, Morrow SE, Yu C, Kan JH. Suspected appendicitis in children: diagnostic importance of normal abdominopelvic CT findings with nonvisualized appendix. *Radiology* 2009; 250:531-537.
5. Kharbanda AB, Stevenson MD, Macias CG, Sinclair K, Dudley NC, Bennett J et al. Interrater reliability of clinical findings in children with possible appendicitis. *Pediatrics* 2012; 129:695-700.
6. Kotagal M, Richards MK, Chapman T, Finch L, McCann B, Ormazabal A et al. Improving ultrasound quality to reduce computed tomography use in pediatric appendicitis: The Safe and Sound campaign. *Am J Surg* 2015; 209:896-900.
7. Krishnamoorthi R, Ramarajan N, Wang NE, Newman B, Rubesova E, Mueller CM et al. Effectiveness of a staged US and CT protocol for the diagnosis of pediatric appendicitis: Reducing radiation exposure in the age of ALARA. *Radiology* 2011; 259: 231-239.
8. Malik HT, Marti J, Darzi A, Mossialos E. Savings from reducing low value general surgical interventions. *Br J Surg* 2018; 105(1):13-25.
9. Schok T, Simons PC, Janssen Heijnen ML, Peters NA, Konsten JL. Prospective evaluation of the added value of imaging within the Dutch National Diagnostic Appendicitis Guideline do we forget our clinical eye? *Dig Surg* 2014; 31:436-4143.
10. Leeuwenburgh MM, Wiarda BM, Wiezer MJ, Vrouwenraets BC, Gratama JW, Spilt A, Richir MC, Bossuyt PM, Stoker J, Boermeester MA; OPTIMAP Study Group. Comparison of imaging strategies with conditional contrast-enhanced CT and unenhanced MR imaging in patients suspected of having appendicitis: a multicenter diagnostic performance study. *Radiology*. 2013 Jul;268(1):135-43.

11. Ivan C, Al-Nowfal A, Hudson S, Osma A, Verma R Stephenson JÁ. Cost-effectiveness of imaging in the assessment of appendicitis. *Insights Imaging*. 2019; 10(2):16.
12. Pickhardt PJ, Lawrence EM, Pooler BD, Bruce RJ. Diagnostic performance of multidetector computed tomography for suspected acute appendicitis. *Ann Intern Med*. 2011 Jun 21. 154(12):789-96.

1.1.19 S - Low back pain imaging

Summary of intervention

Imaging in low back pain should be offered if serious underlying pathology is suspected. Serious underlying pathology includes but is not limited to: cancer, infection, trauma, spinal cord injury (full or partial loss of sensation and/or movement of part(s) of the body) or inflammatory disease.

Number of interventions in 2018/19

253,957

Proposal

The evaluation of low back pain by a medical provider should include a complete medical history and examination. It should be established if any “red flag” signs or symptoms are present that could indicate serious underlying pathology.

Serious underlying pathology includes but is not limited to:

- Infection
- Suspected cancer
- Spinal injury
- Spinal cord compression
- Inflammatory conditions
- Patients with cancer and symptoms suggestive of spinal metastases
- Spondyloarthritis in over 16s
- Cauda equina syndrome

Further information can be accessed at the relevant NICE guideline for these conditions.

Patients presenting with low back pain and sciatica should be reviewed in accordance with the low back pain and sciatica guidance [<https://www.nice.org.uk/guidance/ng59>]. Patients presenting with low back pain without sciatica should be reviewed and if none of the above serious underlying pathology are suspected, primary care management typically includes reassurance, advice on continuation of activity with modification, weight-loss, analgesia, physiotherapy and reviewing patients who are high risk of developing chronic pain (i.e. STaRT Back).

NICE guidelines recommend using a risk assessment and stratification tool, (e.g. STaRT Back), and following a pathway such as the National Back and Radicular Pain Pathway, to inform shared decision making and create a management plan.

Consider a combined physical and psychological programme for management of sub-acute and chronic low back pain e.g. Back Skills Training (BeST)

Consider referral to a specialist centre for further assessment and management if required. Imaging within specialist centres is indicated only if the result will change management.

For further information please see the following NICE guidance:

- Low back pain and sciatica in over 16s: assessment and management (November 2016) <https://www.nice.org.uk/guidance/ng59>.
- Low back pain and sciatica in over 16s: assessment and management (November 2016) - Quality statement 2: Referrals for imaging <https://www.nice.org.uk/guidance/qs155/chapter/Quality-statement-2-Referrals-for-imaging>
- National Pathway of Care for Low Back and Radicular Pain <https://www.nice.org.uk/guidance/ng59/resources/endorsed-resource-national-pathway-of-care-for-low-back-and-radicular-pain-4486348909>

Rationale for Recommendation

NICE recommends imaging does not often change the initial management and outcomes of someone with back pain. This is because the reported imaging findings are usually common and not necessarily related to the person's symptoms. Many of the imaging findings (for example, disc and joint degeneration) are frequently found in asymptomatic people. Requests for imaging by non-specialist clinicians, where there is no suspicion of serious underlying pathology, can cause unnecessary distress and lead to further referrals for findings that are not clinically relevant.

Undertaking imaging when it is not indicated can lead to further additional and unnecessary investigations and treatment, including surgery, increasing the risk of harm to patients and driving up costs.

There is evidence that most patients in whom a serious underlying pathology is not suspected and without red flag symptoms will recover from low back pain within six weeks.

In patients with symptoms suggestive of cauda equina syndrome, imaging should not be delayed. The spinal surgery GIRFT report has recommended there should be a low threshold for investigation and, following urgent referral by a senior clinician, an MRI should be undertaken as an emergency. The decision to perform an MRI does not require discussion with the local spinal services. The MRI must be undertaken as an emergency in the patient's local hospital and a diagnosis achieved prior to any discussion with the spinal services. The MRI must take precedence over routine cases and any reasons for a delay or a decision not to perform an emergency scan should be clearly documented. Hospitals with MRI facilities that are not providing a 24/7 service (usually due to a lack of radiographer out of hours support) are being encouraged to provide this service.

References

1. Low back pain and sciatica in over 16s: assessment and management (November 2016) - Quality statement 2: Referrals for imaging <https://www.nice.org.uk/guidance/qs155/chapter/Quality-statement-2-Referrals-for-imaging>
2. NICE CG173 Neuropathic pain in adults: pharmacological management in non-specialist settings (2014) <https://www.nice.org.uk/guidance/cg173>

3. [Spondylarthritis in over 16: diagnosis and management](https://www.nice.org.uk/guidance/ng65)
<https://www.nice.org.uk/guidance/ng65>
4. RCR iRefer: Making the best use of clinical radiology. Eighth edition. 2017. Royal College of Radiologists. <http://guidelines.irefer.org.uk/adult/#Tpc90>
5. STarT Back. <https://www.nice.org.uk/guidance/ng59/resources/endorsed-resource-start-back-screening-tool-with-matched-treatment-options-4906309933>
6. Back Skills Training (BeST): Group cognitive behavioural treatment for low-back pain in primary care: a randomised controlled trial and cost-effectiveness analysis. Prof Sarah E Lamb DPhil et al on behalf of the Back Skills Training Trial investigators.
[https://doi.org/10.1016/S0140-6736\(09\)62164-4](https://doi.org/10.1016/S0140-6736(09)62164-4)
7. Williams CM, Maher CG, Hancock MJ, et al. Low Back Pain and Best Practice Care: A Survey of General Practice Physicians. Arch Intern Med. February 8, 2010;170(3):271-277.
8. Chou R, Fu R, Carrino JA, Deyo RA. Imaging strategies for lowback pain: systematic review and meta-analysis. Lancet. Feb 7 2009;373(9662):463-472.
9. Kendrick D, Fielding K, Bentley E, Miller P et al. The role of radiography in primary care patients with low back pain of at least 6 weeks duration: a randomised (unblinded) controlled trial. Health Technol Assess. 2001; 5 (30):1-69. [UK].
10. Kerry S, Hilton S, Patel S, Dundas D et al. Routine referral for radiography of patients presenting with low back pain: Is patients' outcome influenced by GPs' referral for plain radiography? Health Technol Assess. 2000; 4 (20):1-129. [UK]. National Low Back and Radicular Pain Pathway 2017.
11. Lemmeres GPG, [van Lankveld W](#), [Westert GP](#) et al, Imaging versus no imaging for low back pain: a systematic review, measuring costs, healthcare utilization and absence from work, European Spine Journal, May 2019, 28(5):937-950.
12. Low back pain and sciatica in over 16s: assessment and management (November 2016) <https://www.nice.org.uk/guidance/ng59>.
13. Savigny P, Kuntze S, Watson P, et al. Low Back Pain: early management of persistent non-specific low back pain. London: National Collaborating Centre for Primary Care and Royal College of General Practitioners

1.1.20 T - Knee MRI when symptoms are suggestive of osteoarthritis

Summary of intervention

Osteoarthritis (OA), the most common form of arthritis, is characterised by joint pain accompanied by a varying degree of functional limitation and reduced quality of life. The most commonly affected joints are the knees, hips and small hand joints with a poor link between changes visible on a radiograph and symptoms of osteoarthritis.

An initial diagnosis of OA can be made when clinical assessment is suggestive of this pathology. If imaging is required to confirm the diagnosis, then weight bearing radiographs are the first-line of investigation. Magnetic resonance imaging (MRI) for knees is not usually needed.

Number of interventions in 2018/19

80,808²⁵

Proposal

In primary care, where clinical assessment is suggestive of knee OA, imaging is not usually necessary. If imaging is required then weight bearing radiographs are the first-line of investigation.

Patients with persistent symptoms should, after three to four months, be referred to secondary care and should have imaging of the knee to investigate for OA and/or other pathology.

Where imaging is necessary, in secondary care the first-line investigation of potential knee OA is weight bearing plain radiography. If the patient has a pattern of disease that allows surgical treatment to be adequately planned with plain radiographs, then MRI is not required.

However, there are a number of situations where MRI of the osteoarthritic knee can be useful:

- Patients who have severe symptoms but relatively mild OA on standard X-rays. In this situation the MRI offers more detail and can show much more advanced OA or Osteonecrosis within the knee
- In working up a patient for possible HTO or partial knee replacement an MRI can be a very useful investigation focusing on the state of the anterior cruciate ligament and state of the retained compartments

In summary an MRI scan can be a useful investigation in the contemporary surgical management of osteoarthritis, giving critical information on the pattern of disease and state of the soft tissues. However, requesting an MRI scan when it is not indicated potentially prolongs further waiting times for patients, can cause unnecessary anxiety while waiting for specialist consultation and can delay MRI scans for appropriate patients.

Rationale for Recommendation

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

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

It is important to exclude other diagnoses in some cases where there may be atypical features which may indicate alternative or additional diagnoses such as:

- A history of trauma
- History of cancer or corresponding risk factors
- Prolonged morning joint-related stiffness
- Rapid worsening of symptoms

²⁵ Currently there is no diagnostic data in outpatients so indication for knee MRI is not clear, therefore the number of interventions [80,808] represents the total number of knee MRIs (T - Knee MRI when symptoms are suggestive of osteoarthritis and U - Knee MRI for suspected meniscal tears).

- The presence of a hot swollen joint

Important differential diagnoses include gout, other inflammatory arthritides (for example, rheumatoid arthritis), septic arthritis and malignancy (bone pain).

In secondary care when surgical intervention for OA is being considered an MRI scan can offer valuable information about the pattern of disease within the knee. This includes planning for osteotomy around the knee for OA and for partial knee replacement, where in both cases information about the state of the preserved compartments and the anterior cruciate ligament are critical to the surgical plan

A meta-analysis published in 2017 assessing the role of MRI in OA assessed 16 studies, which included 1220 patients. It found that MRI can detect OA with an overall high specificity and moderate sensitivity so better used to exclude OA than to confirm it. The study recommended that standard clinical algorithm for OA diagnosis, aided by radiographs is the most effective method for diagnosing OA.

The European League Against Rheumatism (EULAR) conducted a systematic review including 390 studies leading to seven recommendations concerning the use of imaging in peripheral joint OA as below:

- Imaging is not required to make the diagnosis in patients with typical presentation of OA. Level of evidence: III–IV. LOA [95% CI] 8.7 [7.9 to 9.4]
- In atypical presentations, imaging is recommended to help confirm the diagnosis of OA and/or make alternative or additional diagnoses. Level of evidence: IV. LOA [95% CI] 9.6 [9.1 to 10]
- Routine imaging in OA follow-up is not recommended. However, imaging is recommended if there is unexpected rapid progression of symptoms or change in clinical characteristics to determine if this relates to OA severity or an additional diagnosis. Level of evidence: III–IV. LOA (mean, 95% CI) 8.8 [7.9 to 9.7]
- If imaging is needed, conventional (plain) radiography should be used before other modalities. To make additional diagnoses, soft tissues are best imaged by US or MRI and bone by CT or MRI. Level of evidence: III–IV. LOA [95% CI] 8.7 [7.9 to 9.6]
- Consideration of radiographic views is important for optimising detection of OA features; in particular for the knee, weightbearing and patellofemoral views are recommended. Level of evidence: III. LOA [95% CI] 9.4 [8.7 to 9.9]
- According to current evidence, imaging features do not predict non-surgical treatment response and imaging cannot be recommended for this purpose. Level of evidence: II–III. LOA [95% CI] 8.7 [7.5 to 9.7]
- The accuracy of intra-articular injection depends on the joint and on the skills of the practitioner and imaging may improve accuracy. Imaging is particularly recommended for joints that are difficult to access due to factors including site (e.g., hip), degree of deformity and obesity. Level of evidence: III–IV. LOA [95% CI] 9.4 [8.9 to 9.9].

References

1. Osteoarthritis: care and management NICE Guidelines Clinical guideline [CG177] Published date February 2014
<https://www.nice.org.uk/guidance/cg177/chapter/1-Recommendations#diagnosis-2>

2. Menashe L, et al. The diagnostic performance of MRI in osteoarthritis: a systematic review and meta-analysis. *Osteoarthritis Cartilage*. 2012 Jan;20(1):13-21. PMID: 22044841.
3. Sakellariou G, et al. EULAR recommendations for the use of imaging in the clinical management of peripheral joint osteoarthritis. *Ann Rheum Dis*. 2017 Sep;76(9):1484-1494. PMID: 28389554.

1.1.21 U - Knee MRI for suspected meniscal tears

Summary of intervention

Patients who have knee pain with persistent mechanical symptoms (locking, catching and intermittent sudden pain on movement) that has not responded to initial non-operative care may have a symptomatic meniscal tear. These patients are referred to secondary care and in these circumstances an MRI scan is the best investigation to determine the cause of symptoms.

Patients who have a clear history of a significant acute knee injury and mechanical symptoms or who have a locked knee require referral to secondary care and should undergo MRI investigation.

The majority of patients who present to primary care with knee pain do not require initial investigation with an MRI scan once red flag symptoms and signs have been excluded.

Number of interventions in 2018/19

80,808²⁶

Proposal

Patients with a clear history of a significant acute knee injury and mechanical symptoms or who have a locked knee may have a repairable meniscal tear and should undergo referral to secondary care and have MRI investigation.

The majority of patients who initially present in primary care with knee symptoms, no red flags and no history of acute knee injury or a locked knee do not need an MRI investigation and can be treated with non-operative supportive measures.

Patients with persistent mechanical knee symptoms should be referred to secondary care and should have an MRI scan of the knee to investigate for a meniscal tear and/or other pathology.

Rationale for Recommendation

Degenerate meniscal tears and OA are extremely common in the general population. MRI is not recommended for a suspected degenerative meniscal tear unless there are mechanical symptoms (e.g. locking) or lack of improvement with conservative treatment (exercise/therapy, weight loss, bracing, topical or oral analgesia, intra-articular injections). Acute knee injury can result in meniscal pathology that may require surgical intervention such as meniscal repair and an MRI scan is the investigation of choice in these cases. A locked knee requires urgent assessment and an MRI scan is the investigation of choice to define the cause.

²⁶ Currently there is no diagnostic data in outpatients so indication for knee MRI is not clear, therefore the number of interventions [80,808] represents the total number of knee MRIs [T - Knee MRI when symptoms are suggestive of osteoarthritis and U - Knee MRI for suspected meniscal tears].

References
<ol style="list-style-type: none"> 1. Choosing Wisely Canada: https://choosingwiselycanada.org/wp-content/uploads/2017/05/Sport-and-exercise-medicine.pdf 2. Arthritis Alliance of Canada. The Impact of Arthritis in Canada: Today and Over the Next 30 Years [Internet]. 2011 [cited 2017 May 5]. 3. Buchbinder R, et al. Management of degenerative meniscal tears and the role of surgery. <i>BMJ</i>. 2015;350:h2212. PMID: 26044448. 4. Englund M. The role of the meniscus in osteoarthritis genesis. <i>Rheum Dis Clin North Am</i>. 2008;34:573-9. PMID: 18687273. 5. Englund M. Meniscal tear — a common finding with often troublesome consequences. <i>J Rheumatol</i>. 2009;36:1362-4. PMID: 19567632. 6. Englund M, et al. Incidental meniscal findings on knee MRI in middle-aged and elderly persons. <i>N Engl J Med</i>. 2008;359:1108-15. PMID: 18784100. 7. Strobel MJ. <i>Manual of Arthroscopic Surgery</i>. Springer: Verlag Berlin Heidelberg; 2002;1:99-200. US Department of Veteran Affairs. VA/DoD Clinical Practice Guidelines: The Non-Surgical Management of Hip & Knee Osteoarthritis (OA) [Internet]. 2014 [cited 2017 May 5]. 8. S. G. F. Abram, D. J. Beard, A. J. Price, BASK Meniscal Working Group. Bone Joint J 2019;101-B:652–659. Arthroscopic meniscal surgery a national society treatment guideline and consensus statement. https://doi.org/10.1302/0301-620X.101B6.BJJ-2019-0126.R1.

1.1.22 V - Vertebroplasty for painful osteoporotic vertebral fractures

Summary of intervention
<p>Osteoporotic bones are of reduced density and are more susceptible to fractures. Vertebral compression fractures are a break in a bone of the spinal column that results in a reduction in height of that bone. Osteoporotic vertebral fractures can cause pain and potentially an associated reduction in mobility. The pain can often improve as healing occurs. Deformity and respiratory or gastrointestinal disturbance as a result of fractures may be permanent.</p> <p>Vertebroplasty (VP) is a procedure which involves the injection of bone cement (typically polymethylmethacrylate [PMMA]) into the fractured vertebral body via a needle inserted through the skin, using image guidance]. The procedure aims to increase stability and strengthen the bone with the intention of reducing pain and further collapse. The procedure is performed under local anaesthetic and may be performed by a radiologist, spinal surgeon or pain specialist. Decisions regarding the need for VP are made by the operator, in conjunction with metabolic and pain specialists, geriatricians and the patient.</p> <p>The alternative to VP is conservative management. This consists of pain relief, bracing, and physiotherapy. Normal healing takes place over 2-12 weeks. Immobility and pain medication can have significant side effects, particularly in older patients.</p>
Number of interventions in 2018/19
304
Proposal
<p>Vertebroplasty (VP) should not be routinely offered as a treatment for painful osteoporotic vertebral fractures.</p>

As per advice in the NICE Technology Appraisal Guidance 279 [TAG 279], VP may be considered where:

- In rare cases where patients have 'severe ongoing pain after a recent, unhealed vertebral fracture despite optimal pain management'
- Where the acute vertebral fracture has been proven on imaging and correlates with the site of maximal pain on clinical examination.
- The decision to treat should be taken after multidisciplinary team discussion.
- The procedure should take place at a facility with access to spinal surgery services.
- Processes for audit and clinical governance should be in place.
- VP must be performed in conjunction with additional measures to improve bone health

NICE TAG 279 (<https://www.nice.org.uk/guidance/ta279>) delegates the eligible timeframe for intervention to the clinician. However, evidence from a 2016 randomised controlled trial [RCT] offers evidence that older patients (>60 years old) with fractures at most 6 weeks old and severe pain despite optimal pain management that benefit most from the procedure.

Rationale for Recommendation

The evidence for VP in the management of vertebral compression is heterogeneous in population, comparators and outcomes. In 2013 and 2016 NICE TAG 279 reviewed the available evidence. NICE stated that the available open label randomised controlled trials comparing VP with conservative management better reflected the clinical reality. These studies demonstrated improvement in pain post VP. NICE acknowledged double blind RCTs which had demonstrated no significant improvement post VP but felt these to be less relevant.

Since 2016, two further double blind RCTs assessing VP compared to sham procedure have been completed. A 2016 RCT with more specific inclusion criteria (including patients over 60 years old, with fractures less than 6 weeks old and severe pain despite medication) compared VP with subcutaneous local anaesthetic. It demonstrated improved pain management in VP. A 2018 RCT, which included fractures up to 9 weeks old demonstrated no difference between VP and periosteal injection of local anaesthetic.

A 2018 Cochrane systematic review stated that there was no evidence to support the use of VP in painful osteoporotic fractures. However, this review has been subject to criticism.

Currently, there is no convincing body of evidence to alter the stance of the NICE TAG 279. There is general agreement that further adequately powered trials are needed for further assessments of subgroups.

Risks related to VP include cement leakage which can cause pulmonary embolism, and nerve or cord compression. The procedure may be complicated by haemorrhage, infection, rib or sternal fracture or haemo- or pneumothorax. It is unclear from the available evidence whether VP can cause additional vertebral body fractures. Therefore, VP for painful osteoporotic fractures that do not meet the NICE criteria are considered unjustified currently.

References

1. Nice Technology Appraisal Guidance 279. Percutaneous vertebroplasty and percutaneous balloon kyphoplasty for treating osteoporotic vertebral compression fractures, <https://www.nice.org.uk/guidance/ta279>, accessed 11/08/2019
2. Clark W, Bird P, Gonski P, Diamond TH, Smerdely P, McNeil HP, Schlaphoff G, Bryant C, Barnes E, Gebiski V. Safety and efficacy of vertebroplasty for acute painful osteoporotic fractures [VAPOUR]: a multicentre, randomised, double-blind, placebo-controlled trial. *The Lancet*. 2016 Oct 1;388(10052):1408-16.
3. Farrokhi MR, Alibai E, Maghami Z. Randomized controlled trial of percutaneous vertebroplasty versus optimal medical management for the relief of pain and disability in acute osteoporotic vertebral compression fractures. *Journal of Neurosurgery: Spine*. 2011 May 1;14(5):561-9.
4. Voormolen MH, Mali WP, Lohle PN, Fransen H, Lampmann LE, Van der Graaf Y, Juttman JR, Janssens X, Verhaar HJ. Percutaneous vertebroplasty compared with optimal pain medication treatment: short-term clinical outcome of patients with subacute or chronic painful osteoporotic vertebral compression fractures. The VERTOS study. *American Journal of Neuroradiology*. 2007 Mar 1;28(3):555-60.
5. Klazen CA, Lohle PN, de Vries J, Jansen FH, Tielbeek AV, Blonk MC, Venmans A, van Rooij WJ, Schoemaker MC, Juttman JR, Lo TH. Vertebroplasty versus conservative treatment in acute osteoporotic vertebral compression fractures [Vertos II]: an open-label randomised trial. *The Lancet*. 2010 Sep 25;376(9746):1085-92.
6. Blasco J, Martinez-Ferrer A, Macho J, San Roman L, Pomés J, Carrasco J, Monegal A, Guanabens N, Peris P. Effect of vertebroplasty on pain relief, quality of life, and the incidence of new vertebral fractures: a 12-month randomized follow-up, controlled trial. *Journal of Bone and Mineral Research*. 2012 May;27(5):1159-66.
7. Rousing R, Andersen MO, Jespersen SM, Thomsen K, Lauritsen J. Percutaneous vertebroplasty compared to conservative treatment in patients with painful acute or subacute osteoporotic vertebral fractures: three-months follow-up in a clinical randomized study. *Spine*. 2009 Jun 1;34(13):1349-54.
8. Buchbinder R, Osborne RH, Ebeling PR, Wark JD, Mitchell P, Wriedt C, Graves S, Staples MP, Murphy B. A randomized trial of vertebroplasty for painful osteoporotic vertebral fractures. *New England Journal of Medicine*. 2009 Aug 6;361(6):557-68.
9. Kallmes DF, Comstock BA, Heagerty PJ, Turner JA, Wilson DJ, Diamond TH, Edwards R, Gray LA, Stout L, Owen S, Hollingworth W. A randomized trial of vertebroplasty for osteoporotic spinal fractures. *New England Journal of Medicine*. 2009 Aug 6;361(6):569-79.
10. Firanesco CE, de Vries J, Lodder P, Venmans A, Schoemaker MC, Smeets AJ, Donga E, Juttman JR, Klazen CA, Elgersma OE, Jansen FH. Vertebroplasty versus sham procedure for painful acute osteoporotic vertebral compression fractures [VERTOS IV]: randomised sham controlled clinical trial. *bmj*. 2018 May 9;361:k1551.
11. Buchbinder R, Johnston RV, Rischin KJ, Homik J, Jones CA, Golmohammadi K, Kallmes DF. Percutaneous vertebroplasty for osteoporotic vertebral compression fracture. *Cochrane Database of Systematic Reviews*. 2018(11).

12. Clark W, Bird P, Diamond T, Gonski P, GebSKI V. Cochrane vertebroplasty review misrepresented evidence for vertebroplasty with early intervention in severely affected patients. *BMJ evidence-based medicine*. 2019 Mar 9;bmjebm-2019.
13. Tsoumakidou G, Too CW, Koch G, Caudrelier J, Cazzato RL, Garnon J, Gangi A. CIRSE guidelines on percutaneous vertebral augmentation. *Cardiovascular and interventional radiology*. 2017 Mar 1;40(3):331-42

1.1.23 W - Imaging for shoulder pain

Summary of intervention

Initial management of shoulder pathology with no red flags should be physiotherapy.

Where shoulder pain persists for more than three to four months, use X-ray as first-line investigation, which often diagnoses a number of problems without further imaging being required.

For ongoing pain, a referral may be made to intermediate care, shoulder clinic, or where necessary, orthopaedics. Further imaging may include ultrasound, MRI and/or CT scanning in accordance with the relevant referral pathways developed by the specialist shoulder service.

Guided shoulder injections should not be used routinely in the absence of conservative management and investigation.

Number of interventions in 2018/19

75,388

Proposal

For patients who initially present with shoulder pain in primary care, first-line treatment should be physiotherapy and advice on returning to normal activities as soon as able.

Where a patient has ongoing shoulder pain lasting more than three months to four months care may be escalated as follows:

- Appropriate injections
- X-ray (to identify osteoarthritis, calcium deposits, rotator cuff arthropathy, impingement, fractures and primary and secondary tumours)
- Referral to intermediate care/ shoulder clinic
- Referral to orthopaedics

Where a patient is being considered for referral to surgical repair, ultrasound, MRI or CT scanning may be requested in primary care earlier.

It is important to exclude other diagnoses, especially when red flags are present. An urgent onward referral to secondary care may be warranted in some circumstances where there is:

- Any history or suspicion of malignancy
- Any mass or swelling
- Suggestions of infection, e.g. red skin, fever or systemically unwell
- Trauma, pain and weakness

- Trauma, epileptic fit or electric shock leading to loss of rotation and abnormal shape
- Persistent symptoms

Clinicians working collaboratively with the local shoulder service can follow locally agreed guidelines developed by shoulder service (as per BESS guidelines).

Secondary care

Shoulder service to use all modalities for management of shoulder pathology. It is recommended that they develop local referral guidelines to ensure consistency.

Rationale for Recommendation

There is currently a massive load being placed on radiology departments with a plethora of investigations being requested. While there is no harm being caused by these investigations, it appears that large numbers of these investigations may add little value to the treatment pathway. As a secondary effect this is causing long waiting lists so that appropriate patients have a longer wait to access these services potentially increasing their suffering and adversely affecting their outcome.

Practices are varied with large volumes of referrals for X-rays, MRIs, CTs and ultrasounds. A large number of guided injections are also requested.

NICE recommends the use of intermediate care to reduce referrals to hospital while ensuring that people are directed towards the most appropriate services and clinicians. Intermediate care provides rapid assessment, diagnosis and treatment of people with a variety of musculoskeletal problems. Healthcare professionals involved may include physiotherapists, GPs with a special interest in musculoskeletal problems, and clinical nurse practitioners.

Two review articles show that there is evidence that physiotherapy and home exercises provide some improvement for people with shoulder pain in the short term, though the optimum timing of referral for physiotherapy is not clear. There is also no definite evidence on how soon people with shoulder pain should be reviewed.

References

1. NICE Clinical Knowledge Summary on Shoulder Pain Management (2017) <https://cks.nice.org.uk/shoulder-pain#!scenario>
2. BESS/BOA Patient Care Pathways Subacromial shoulder pain R Kulkarni, J Gibson, P Brownson, M Thomas, A Rangan, A Carr and J Rees Shoulder & Elbow 2015, Vol. 7(2) 135–143
3. Is there a role for ultrasound in primary care/ An evidence and consensus based protocol for shoulder USS safely but significantly reduces the demand. A prospective study. K Thomas, H Amos, C Connor, H Pullen, R Gwyn, R Kulkarni BESS best paper award 2016
5. PANdA S <http://www.isrctn.com/ISRCTN46948079>
6. <https://www.keele.ac.uk/research/researchnews/2018/may/new27millionstudytoperpersonalisecareforpeoplewithshoulderpain/nih-aruk-shoulder-study.php>
7. <https://www.ouh.nhs.uk/shoulderandelbow/information/documents/JRFinal2010poster.pdf>

1.1.24 X - MRI scan of the hip for arthritis

Summary of intervention
When clinical assessment is suggestive of osteoarthritis (OA) and plain radiographs demonstrate typical OA features, the use of MRI for the investigation of hip pain is not usually needed.
Number of interventions in 2018/19
15,286
Proposal
<p>Do not request a hip MRI when the clinical presentation (history and examination) and X-rays demonstrate typical features of OA. MRI scans rarely add useful information to guide diagnosis or treatment.</p> <p>Requesting MRI scans further prolongs waiting times for patients. Importantly it can cause unnecessary anxiety while waiting for specialist consultation and can delay MRI scans for appropriate patients.</p> <p>The diagnosis of hip OA can be effectively made based upon the patient's history and physical examination. NICE recommends diagnosing osteoarthritis clinically without investigations in patients who:</p> <ul style="list-style-type: none">• Are 45 or over AND• Have activity-related joint pain AND• Have either no morning joint-related stiffness or morning stiffness that lasts no longer than 30 minutes. <p>It is important to exclude other diagnoses, especially when red flags are present. If imaging is necessary, the first-line investigation should be plain x-ray.</p> <p>An MRI or urgent onward referral may be warranted in some circumstances. These include:</p> <ul style="list-style-type: none">• Suggestions of infection, e.g. pyrexia, swollen and red joint, significant irritability, other risk factors of septic arthritis• Trauma• History or family history of an inflammatory arthropathy• Mechanical, impingement type symptoms• Prolonged and morning stiffness• History of cancer or corresponding risk factors <p>Important differential diagnoses include inflammatory arthritis (for example, rheumatoid arthritis), femoro-acetabular impingement, septic arthritis and malignancy (bone pain).</p>
Rationale for Recommendation
<p>A meta-analysis published in 2017 assessing the role of MRI in OA, assessed 16 studies which included 1220 patients. It concluded that MRI is more useful in excluding OA rather than diagnosing it. The study recommended that standard clinical algorithm for OA diagnosis, aided by radiographs is the most effective method for diagnosing OA.</p> <p>The European League Against Rheumatism (EULAR) conducted a systematic review including 390 studies leading to seven recommendations concerning the use of imaging in peripheral joint OA as below:</p>

- Imaging is not required to make the diagnosis in patients with typical presentation of OA. Level of evidence: III–IV. LOA [95% CI] 8.7 [7.9 to 9.4]
- In atypical presentations, imaging is recommended to help confirm the diagnosis of OA and/or make alternative or additional diagnoses. Level of evidence: IV. LOA [95% CI] 9.6 [9.1 to 10]
- Routine imaging in OA follow-up is not recommended. However, imaging is recommended if there is unexpected rapid progression of symptoms or change in clinical characteristics to determine if this relates to OA severity or an additional diagnosis. Level of evidence: III–IV. LOA [mean, 95% CI] 8.8 [7.9 to 9.7]
- If imaging is needed, conventional [plain] radiography should be used before other modalities. To make additional diagnoses, soft tissues are best imaged by US or MRI and bone by CT or MRI. Level of evidence: III–IV. LOA [95% CI] 8.7 [7.9 to 9.6]
- Consideration of radiographic views is important for optimising detection of OA features; in particular for the knee, weightbearing and patellofemoral views are recommended. Level of evidence: III. LOA [95% CI] 9.4 [8.7 to 9.9]
- According to current evidence, imaging features do not predict non-surgical treatment response and imaging cannot be recommended for this purpose. Level of evidence: II–III. LOA [95% CI] 8.7 [7.5 to 9.7]
- The accuracy of intra-articular injection depends on the joint and on the skills of the practitioner and imaging may improve accuracy. Imaging is particularly recommended for joints that are difficult to access due to factors including site [eg, hip], degree of deformity and obesity. Level of evidence: III–IV. LOA [95% CI] 9.4 [8.9 to 9.9].

References

1. Osteoarthritis: care and management NICE Guidelines Clinical guideline [CG177] Published date February 2014
<https://www.nice.org.uk/guidance/cg177/chapter/1-Recommendations#diagnosis-2>
2. Menashe L, et al. The diagnostic performance of MRI in osteoarthritis: a systematic review and meta-analysis. *Osteoarthritis Cartilage*. 2012 Jan;20(1):13-21. PMID: 22044841.
3. Sakellariou G, et al. EULAR recommendations for the use of imaging in the clinical management of peripheral joint osteoarthritis. *Ann Rheum Dis*. 2017 Sep;76(9):1484-1494. PMID: 28389554.

1.1.25 Y - Fusion surgery for mechanical axial low back pain

Summary of intervention

Spinal fusion is when two individual spinal vertebrae become joined together by bone formed as a result of surgery. This may involve the use of bone graft and/or surgical implants. The aim of the surgery is to stop motion at that joint in order to stabilise the joint. Spinal fusion is not recommended for patients with non-specific, mechanical back pain.

Number of interventions in 2018/19

Proposal

Spinal fusion is not indicated for the treatment of non-specific, mechanical back pain. Instead, spinal fusion is usually reserved for patients with a symptomatic spinal deformity (e.g. scoliosis) or instability (e.g. spondylolisthesis; trauma). In addition, spinal fusion can also be used as an adjunct during spinal decompression surgery, where a more extensive exposure of the affected neurological structures is required and would otherwise render the spine unstable.

Primary care management typically includes reassurance, advice on continuation of activity with modification, weight-loss, analgesia, physiotherapy and screening patients who are high risk of developing chronic pain (i.e. STaRT Back). Use combined physical and psychological programme for management of sub-acute and chronic low back pain e.g. Back Skills Training (BeST).

Rationale for Recommendation

Mechanical low-back pain is common, often multifactorial and amenable to multimodal non-operative treatment (e.g. lifestyle modifications, weight loss, analgesia, physiotherapy, exercise).

Imaging (e.g. plain film radiographs, MRI) in the absence of focal neurology (e.g. sciatica) or 'red-flags' may identify incidental, if not trivial, findings of age-related 'wear and tear' which can unnecessarily create a health-anxiety for some patients, where simple reassurance would otherwise usually suffice.

By the nature of the description 'non-specific low back pain,' a focal site of pathology is usually never found. In many cases, symptoms may be underpinned by a centralised pain disorder that exists outside the spine.

In the absence of a focal structural pathology and concordant mechanical or neurological symptoms, there remains a distinct lack of high-quality evidence to support fusion of the spine as a treatment of mechanical axial back pain. A formal, multi-disciplinary review through the NICE mechanism has defined the NG59 guidance on the management of back pain, which has led to the publication of the National Back Pain Pathway which aims to offer all patients timely, evidence-based care for the back pain.

References

1. NICE Low back pain and sciatica in over 16s: assessment and management (November 2016) <https://www.nice.org.uk/guidance/ng59>
2. National Low Back and Radicular Pain Pathway 2017 <https://www.ukssb.com/improving-spinal-care-project>
3. Surgery for low back pain: a review of the evidence for an American Pain Society Clinical Practice Guideline. Chau R et al. Spine (Phila Pa 1976). 2009 May 1;34(10):1094-109. doi: 10.1097/BRS.0b013e3181a105fc
4. STaRT Back. <https://www.nice.org.uk/guidance/ng59/resources/endorsed-resource-start-back-screening-tool-with-matched-treatment-options-4906309933>
5. Back Skills Training (BeST): Group cognitive behavioural treatment for low-back pain in primary care: a randomised controlled trial and cost-effectiveness analysis. Prof Sarah E Lamb DPhil et al on behalf of the Back

Skills Training Trial investigators.

[https://doi.org/10.1016/S0140-6736\(09\)62164-4](https://doi.org/10.1016/S0140-6736(09)62164-4)

6. Evidence for surgery in degenerative lumbar spine disorders. Jacobs WC et al. Best Pract Res Clin Rheumatol. 2013 Oct;27(5):673-84. doi: 10.1016/j.berh.2013.09.009. Epub 2013 Oct 5.
7. <https://choosingwiselycanada.org/spine/>
8. NICE CG173 Neuropathic pain in adults: pharmacological management in non-specialist settings [2014] <https://www.nice.org.uk/guidance/cg173>
9. Transaxial interbody lumbosacral fusion IPG 387: <https://www.nice.org.uk/guidance/ipg387>

Interventions where data are sufficiently robust to determine rates of variation and set national activity goals using the same methodology as used in the initial list of 17 interventions

1.1.26 Z - Helmet therapy for treatment of positional plagiocephaly/ brachycephaly in children

Summary of intervention

Non-synostotic/positional plagiocephaly and brachycephaly are distortions of the skull (flattening to the side or the back of the head) that most commonly become apparent in the first few months of life as a result of the amount of time a baby spends lying on their back. Non-synostotic/positional plagiocephaly and brachycephaly are very common, affecting up to 40% of infants (as opposed to synostotic conditions which are rare).

Cranial Moulding Orthosis – or ‘helmet therapy’ – is an intervention that claims to correct the shape of the head. A specially moulded solid helmet is created (with space to allow the flattened area to re-mould) that must be worn 23 hours a day. This helmet requires repeated adjustments as the baby grows.

Number of interventions in 2018/19

²⁷See footnote

Proposal

As clinically evidenced by the four major designated supraregional craniofacial services in the UK (prior to the availability of Helmet therapy), the flattened area of the head usually self-corrects naturally, as a baby grows, develops and becomes more mobile with increased muscle strength, and spends less time lying in one position.

There is clear evidence and expert consensus that a helmet does not affect the natural course of skull growth and should not be used.

Helmets may be associated with significant risks such as pain, pressure sores and may adversely affect the bond between baby and parents. They are also expensive.

To reduce pressure on the flattened part of the head and encourage remoulding, the following simple interventions are suggested:

- ‘Tummy time’ - Allow baby to spend time lying on their front while awake, supervised and playing.

²⁷ For interventions with fewer than 10 episodes during 2018/19, the number was not included.

- Change the position of toys / mobiles / cot in the room to encourage baby to move their head away from the flattened side
- Use a sling or a front carrier to reduce the amount of time baby spends lying on a firm flat surface
- Modify Parental lap “nursing” position to promote contact with less flattened side to parental chest

All babies including those with non-synostotic/positional plagiocephaly or brachycephaly must be laid to sleep on their back. Sleeping in positions other than this is associated with an increased risk of Sudden Infant Death Syndrome or SIDS (formerly known as Cot Death). For the same reason, no pillows or props should be used to change a baby’s sleeping position.

Rationale for Recommendation

Non-synostotic/positional plagiocephaly is a mechanical distortion that corrects itself as the child grows. Studies have shown that helmet therapy is no more effective than leaving the head to remould naturally as the baby grows. Choosing Wisely UK and Choosing Wisely Canada have both advised against helmet therapy as an intervention for positional plagiocephaly and brachycephaly. In the guideline NG127 Suspected neurological conditions: recognition and referral published in May 2019 NICE does not refer to helmet therapy and recommends:

For babies aged under 1 year whose head is flattened on one side (plagiocephaly):

- Be aware that positional plagiocephaly (plagiocephaly caused by pressure outside the skull before or after birth) is the most common cause of asymmetric head shape
- Advise parents or carers of babies with positional plagiocephaly that it is usually caused by the baby sleeping in one position and can be improved by changing the baby’s position when they are lying, encouraging the baby to sit up when awake, and giving the baby time on their tummy.

The NICE committee discussed how measuring the distance between the tragus of the ear and the outer canthus of the eye is a useful adjunct to clinical inspection of the head shape of a child under one age and would help a clinician reassure parents that this was a benign condition. However, the committee acknowledged that this was not an absolute discriminator and that if there was uncertainty, referral for specialist assessment was appropriate.

In terms of positional plagiocephaly, the NICE committee recommend that once the flat area at the back of the head is relieved of pressure with changing position, and the child is spending more time sitting, natural growth of the head will reduce the flattening. The committee does not recommend referral for investigations or management for a condition that has an excellent prognosis over time. The committee recommends referral for assessment of developmental disorders if there is concern that delay in meeting early motor milestones – rolling, sitting – is contributing to degree or maintenance of plagiocephaly. The referral would be for diagnostic assessment as well as assessing the need for therapy and provision of equipment such as adapted seating.

Consider referral to physiotherapy if there is concern of neck muscle pathology.

References

1. NHS: Plagiocephaly and brachycephaly (flat head syndrome) <https://www.nhs.uk/conditions/plagiocephaly-brachycephaly/>
2. NHS: Reduce the risk of sudden infant death syndrome (SIDS) <https://www.nhs.uk/conditions/pregnancy-and-baby/reducing-risk-cot-death/>
3. NICE guidance NG127 Suspected neurological conditions: recognition and referral <https://www.nice.org.uk/guidance/ng127>
4. Wilbrand J-F et al. Complications of Helmet Therapy. Journal of Cranio-Maxillofacial Surgery Volume 40, Issue 4, June 2012, Pages 341-346
5. Expensive helmets do not correct skull flattening in babies. BMJ. 2014 May 1;348:g3066. PMID: 24791750. <https://www.bmj.com/content/348/bmj.g3066>
6. Tamber MS, et al. Congress of Neurological Surgeons Systematic Review and Evidence-Based Guideline on the Role of Cranial Molding Orthosis (Helmet) Therapy for Patients With Positional Plagiocephaly. Neurosurgery. 2016 Nov;79(5):E632-E633. PMID: 27776089. https://www.cns.org/sites/default/files/guideline-chapter-pdf/plagiocephalygl_ch_5_orthotic_tx.pdf
7. van Wijk RM, et al. Helmet therapy in infants with positional skull deformation: Randomised controlled trial. BMJ. 2014 May 1;348:g2741. PMID: 24784879. <https://www.bmj.com/content/348/bmj.g2741>
8. Choosing Wisely UK: Helmet therapy is not effective in the treatment of positional Plagiocephaly in children, other treatment options should be considered and discussed with your patient.
9. Choosing Wisely Canada. <https://choosingwiselycanada.org/pediatric-neurosurgery/>
10. PURLs: Helmets for positional skull deformities: A good idea, or not? <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4294410/>

1.1.27 AA - Pre-operative chest x-ray

Summary of intervention

Chest radiographs in the pre-operative assessment of adult, elective surgical patients prior to routine surgery is not recommended.

Number of interventions in 2018/19

Data are not currently available

Proposal

Pre-operative chest radiographs should not be routinely performed in adult elective surgical patients. However, they may be appropriate in specific cohorts of patients, including when the following criteria apply:

- Patients undergoing cardiac or thoracic surgery
- Patients undergoing organ transplantation or live organ donation
- At the request of the anaesthetist in:
 - Those with suspected or established cardio-respiratory disease, who have not had a chest radiograph in the previous 12 months, and who are likely to go to critical care after surgery
 - Those with a recent history of chest trauma
 - Patients with a significant smoking history who have not had a chest radiograph in the previous 12 months, or those with malignancy and possible lung metastases

- Those undergoing a major abdominal operation, who are at high risk of respiratory complications

Rationale for Recommendation

In the UK, most patients are seen up to 12 weeks before surgery in preoperative assessment clinics, where a structured history and examination is performed by a nurse. Relevant preoperative investigations may also be taken according to locally developed protocols.

Routine preoperative investigations are expensive, labour intensive, and of questionable value. Excessive pre-operative testing may cause anxiety for patients, delays in treatment due to spurious results, and further unnecessary investigation or treatment, without changing outcomes or influencing perioperative management of the patient. In addition, some investigations can be associated with increased patient morbidity, for example the small dose of ionising radiation (0.2mSv) that every patient is subjected to during a chest radiograph. A more structured approach is therefore required.

In general, patients who are healthy or having relatively non-invasive surgery may require few, if any, pre-operative tests.

In the case of imaging, national guidelines agree that routine use of pre-operative chest radiographs is not indicated in adult elective surgical patients, but that it may be appropriate in specific cohorts of patients. NICE recommend that chest radiographs should not be routinely offered before elective surgery.

References

1. O'Neill F, Carter E, Pink N, Smith I. Routine preoperative tests for elective surgery: summary of updated NICE guidance. BMJ 2016; 354: doi: <https://www.bmj.com/content/354/bmj.i3292>
2. NICE Guidelines. Routine preoperative tests for elective surgery. NICE Guidelines (NG45); 2016. <https://www.nice.org.uk/guidance/NG45>
3. RCR iRefer: Making the best use of clinical radiology. Eighth edition. 2017. Royal College of Radiologists. <http://guidelines.irefer.org.uk/adult/#Tpc90>
4. Puddy E, Hill C. Interpretation of the chest radiograph. CEACCP 2007; 7: 71-75.
5. Klein AA, Arrowsmith JE. Should routine preoperative testing be abandoned? Anaesthesia 2010; 65: 974-76.
6. Association of Anaesthetists of Great Britain and Ireland. Pre-operative assessment and patient preparation: the role of the anaesthetist 2. AAGBI 2010. www.aagbi.org/sites/default/files/preop2010.pdf

1.1.28 BB - Pre-operative ECG

Summary of intervention

Performance of a resting electrocardiogram (ECG) in asymptomatic adult patients undergoing low-risk, non-cardiac elective surgery during the pre-operative assessment is not necessary.

Number of interventions in 2018/19

Data are not currently available

Proposal

Pre-operative electrocardiograms should not be routinely performed in low-risk, non-cardiac, adult elective surgical patients.

Where pre-operative tests are completed outside the centre in which surgery will be completed, avoid unnecessarily repeating these tests on admission and ensure appropriate transfer of images takes place.

However, they may be appropriately performed when the following criteria apply:

- Patients with an American Society of Anaesthesiologists (ASA) physical classification status of 3 or greater and no ECG results available for review in the last 12 months.
- Patients with a history of cardiovascular or renal disease, or diabetes.
- Patients with any history of potential cardiac symptoms [e.g. cardiac chest pain, palpitations, unexplained syncope or breathlessness] or a new murmur, that has not previously been investigated.
- Patients over the age of 65 attending for major surgery.

Rationale for Recommendation

In the UK, most patients are seen in preoperative assessment clinics within 12 weeks of elective surgery, where a structured history and examination is performed by a nurse. Relevant preoperative investigations may also be taken according to locally developed protocols.

Routine preoperative investigations are expensive, labour intensive, and of questionable value unless shown to affect quality of care or clinical outcomes. Tests which have not been shown to change outcomes or influence perioperative management may cause anxiety for patients, delays in treatment due to results of uncertain relevance, and referral for further investigations or treatment. In addition, some investigations can be associated with increased patient morbidity. A more structured approach is therefore required.

In general, patients who are otherwise healthy or having relatively non-invasive surgery may require few, if any, pre-operative tests.

NICE recommend that ECGs should not be routinely offered before low risk, non-cardiac elective surgery. Low risk surgery includes minor or intermediate procedures, such as excision of skin lesions, abscess drainage, knee arthroscopy or hernia repair.

However, some patient groups should have ECG pre-operatively. This can include patients who have a history of cardiovascular disease [such as heart attack, stroke, heart failure, peripheral arterial disease], palpitations or co-morbidities that would predispose them to cardiovascular disease such as diabetes or renal disease. In addition, patients who are assessed as higher risk, and therefore scored as an ASA physical classification status of 3 or more [patient has severe systemic disease], with no ECG in the preceding 12 months, would benefit from further investigation.

Finally, an ECG would be prudent in patients over the age of 65 attending for major surgery with no ECG in the preceding 12 months.

References

1. O'Neill F, Carter E, Pink N, Smith I. Routine preoperative tests for elective surgery: summary of updated NICE guidance. BMJ 2016; 354: doi: <https://doi.org/10.1136/bmj.i3292>.

2. NICE Guidelines. Routine preoperative tests for elective surgery. NICE Guidelines [NG45]; 2016. <https://www.nice.org.uk/guidance/NG45>
3. Klein AA, Arrowsmith JE. Should routine preoperative testing be abandoned? *Anaesthesia* 2010; 65: 974-76.
4. Association of Anaesthetists of Great Britain and Ireland. Pre-operative assessment and patient preparation: the role of the anaesthetist 2. AAGBI 2010. www.aagbi.org/sites/default/files/preop2010.pdf
5. ASA Physical Status Classification System. <https://www.asahq.org/standards-and-guidelines/asa-physical-status-classification-system>

1.1.29 CC - Prostate-specific antigen (PSA) test

Summary of intervention
<p>Prostate-specific antigen (PSA) is a protein produced by the prostate gland. Blood PSA levels can be elevated in prostate cancer as well as a number of other conditions including benign prostatic hypertrophy, prostatitis and urinary tract infection. Whilst there is no formal prostate cancer screening programme in the UK, PSA levels can be used as a test. However, many men have raised PSA levels without having prostate cancer and many men with prostate cancer don't have raised PSA levels.</p> <p>Typically, men with persistently raised PSA levels are referred on for further evaluation and may be offered histological assessment by trans-rectal or trans-perineal biopsy. Some centres are now using multi-parametric MRI scans to further assess people before taking biopsies. MRI is less likely than biopsy to detect clinically insignificant cancers and therefore reduces over-diagnosis. MRI also enables a more accurate diagnosis of clinically significant cancers because the MRI image can be used to target the biopsy.</p> <p>Biopsies help to confirm the presence of cancer and allows an assessment of the cancer grade and stage. It is possible that biopsies not guided by MRI imaging can miss smaller areas of cancer or detect indolent disease of unclear clinical significance [which may subsequently require further investigation or treatment]. There are a number of potential adverse effects of biopsies including pain, bleeding, urinary retention, infection [which may become serious sepsis] and sexual problems. It is also recognised this process has a significant psychological burden.</p>
Number of interventions in 2018/19
Data are not currently available
Proposal
<ul style="list-style-type: none"> • Population based, PSA screening for prostate cancer in asymptomatic men is not recommended. This is because the benefits have not been shown to clearly outweigh the harms. PSA blood testing should be carefully considered due to the high risk of false positive results. • PSA testing for prostate cancer in asymptomatic men when they are expected to live less than 10 years is not recommended. • PSA testing for prostate cancer in asymptomatic men over the age of 70 with no risk factors is not recommended. • PSA testing for prostate cancer should be avoided if the man has:

- An active or recent urinary infection (PSA may remain raised for many months).
 - Had a prostate biopsy in the previous 6 weeks.
 - Exercised vigorously in the last 48 hours.
 - Ejaculated in the last 48 hours.
- all of which are likely to raise PSA and give a false positive result.
- Where PSA testing is clinically indicated, or requested by the man aged 50 and over, he should (ideally) first have a digital rectal examination, and after careful discussion about the potential risks and benefits of PSA testing which allows for shared decision making, a PSA blood test. Various tools are available to assist with shared decision making (see below)
 - PSA testing should be considered (ideally after digital rectal examination) in asymptomatic men over age 40 at higher risk of prostate cancer due to family history of prostate cancer or African descent.
 - PSA testing should be considered (ideally after digital rectal examination and counselling on the potential risks and benefits of testing) in men with the following symptoms, when there is clinical suspicion of prostate cancer:
 - Lower urinary tract symptoms (LUTS), such nocturia, urinary frequency, hesitancy, reduced flow, urgency or retention.
 - Erectile dysfunction.
 - Visible haematuria.
 - Unexplained symptoms that could be due to advanced prostate cancer (for example lower back pain, bone pain, weight loss).

Relevant Resources

Public Health England (PHE) patient information sheet - [PSA testing and prostate cancer: advice for well men aged 50 and over](#)

Prostate Cancer Research Foundation - [SWOP Risk Calculator](#)

[Choosing Wisely UK](#) - patient education and shared decision-making resources

[Prostate Cancer UK](#) - patient education and shared decision-making resources

Rationale for Recommendation

PSA testing for prostate cancer in asymptomatic men remains controversial. Testing probably increases the diagnosis of prostate cancer but there is little or no evidence this has an effect on cancer related mortality. Testing is also known to be associated with potential harms including overdiagnosis, infection and complications of treatment for indolent disease. Evidence suggests that people at high risk of prostate cancer may benefit more from PSA testing.

Recently published UK guidance, based on an updated systematic review, made a weak recommendation against offering systematic PSA testing. This was because of the small and uncertain benefits of testing on prostate cancer mortality and the large variability in men's values and preferences. Given the lack of clear benefits, the group highlighted the importance of shared decision making in deciding whether to proceed with PSA testing which, is supported by other evidence.

It is worth considering, that the USA Preventive Services Task Force [USPSTF] has previously recommended against prostate cancer screening using PSA testing in men aged 75 years and above. The European Randomised study of Screening for Prostate Cancer [ERSPC] suggests that screening may reduce the long term risk of prostate cancer-specific mortality by at least 9% [relative reduction].

NICE guidance stresses the importance of considering symptoms when proposing a PSA test and offering PSA to symptomatic men with lower urinary tract symptoms [LUTS], such as nocturia, urinary frequency, hesitancy, urgency or retention, erectile dysfunction, visible haematuria, or symptoms that could be due to advanced prostate cancer [for example lower back pain, bone pain, weight loss]. It also advises on the use of tools to aid shared decision-making between clinician and patient when deciding on PSA testing.

References

1. NHS advice: <https://www.nhs.uk/conditions/prostate-cancer/should-i-have-psa-test/>
2. Tikkinen KAO, Dahm P, Lytvyn L, et al. Prostate cancer screening with prostate-specific antigen (PSA) test: a clinical practice guideline. *BMJ* 2018;362:k3581. doi:10.1136/bmj.k3581.
3. Prostate Cancer UK: <https://prostatecanceruk.org/prostate-information/prostate-tests/prostate-biopsy>
4. Ilic D, Djulbegovic M, Jung JH, et al. Prostate cancer screening with prostate-specific antigen (PSA) test: a systematic review and meta-analysis. *BMJ* 2018;362:k3519. doi:10.1136/bmj.k3519.
5. Vernooij RWM, Lytvyn L, Pardo-Hernandez H, et al. Values and preferences of men for undergoing prostate-specific antigen screening for prostate cancer: a systematic review. *BMJ Open* 2018;0:e025470. doi:10.1136/bmjopen-2018-025470.
6. Martin RM, Donovan JL, Turner EL, et al., CAP Trial Group Effect of a low-intensity PSA-based screening intervention on prostate cancer mortality: The CAP Randomized Clinical Trial. *JAMA* 2018;319:883-95.
7. Young GJ, Harrison S, Turner EL, et al Prostate-specific antigen (PSA) testing of men in UK general practice: a 10-year longitudinal cohort study. *BMJ Open* 2017;7:e017729. doi:10.1136/bmjopen-2017-017729. pmid:29084797.
8. Jemal A, Fedewa SA, Ma J, et al. Prostate cancer incidence and PSA testing patterns in relation to USPSTF screening recommendations. *JAMA* 2015;314:2054-61. doi:10.1001/jama.2015.14905. pmid:26575061.
9. Van der Meer S, Kollen BJ, Hirdes WH, et al. Impact of the European Randomized Study of Screening for Prostate Cancer (ERSPC) on prostate-specific antigen (PSA) testing by Dutch general practitioners. *BJU Int* 2013;112:26-31. doi:10.1111/bju.12029. pmid:2346517
10. NICE Clinical Knowledge Summary Prostate Cancer <https://cks.nice.org.uk/prostate-cancer#!diagnosisSub:2>
11. Schröder FH et al. Screening and prostate-cancer mortality in a randomized European study. *N Engl J Med*. 2009 Mar 26;360(13):1320-8.
12. Thompson IM et al. Prevalence of prostate cancer among men with a prostate-specific antigen level < or =4.0 ng per milliliter. *N Engl J Med*. 2004 May 27;350(22):2239-46.

13. Promis Study: [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(16\)32401-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)32401-1/fulltext)
14. Precision Study: <https://www.nejm.org/doi/full/10.1056/NEJMoa1801993>

1.1.30 DD - Liver function, creatinine kinase and lipid level tests – (Lipid lowering therapy)

Summary of intervention

Lipid modification therapies are a group of medicines which help to lower the level of low-density lipoprotein (LDL) cholesterol in the blood. High levels of LDL cholesterol are linked to the development of cardiovascular disease (CVD) which includes ischaemic heart disease and stroke. There is strong evidence that lipid modification therapy improves the mortality for people at high risk of cardiovascular diseases as well as those with established disease. Clinically significant side effects associated with lipid modification therapy include skeletal muscle and liver and toxicity.

Skeletal muscle toxicity related to lipid modification treatment may result in myopathy, myositis and rhabdomyolysis. Whilst these conditions are potentially serious, they occur rarely. The likelihood of muscle toxicity increases with higher lipid modification therapy doses and in patients with predisposing co-morbidities. Creatine kinase is a blood marker which becomes elevated in various skeletal muscle pathologies and is used, alongside signs and symptoms, to diagnose muscle toxicity related to lipid lowering treatment.

Adverse effects on the liver related to lipid modification treatment are very rare and include transaminitis (raised transaminase liver enzymes in the blood) as well as jaundice and liver failure. Liver function testing is used alongside signs and symptoms to diagnose liver toxicity.

Number of interventions in 2018/19

Data are not currently available

Proposal

Creatine Kinase Testing

- Creatine kinase should not be routinely monitored in asymptomatic people who are taking lipid modification therapy.
- Creatine kinase measurement is indicated:
 - Prior to lipid modification therapy initiation in patients who have experienced generalised, unexplained muscle pains or weakness (whether or not associated with previous lipid-monitoring therapy)
 - If a patient develops muscle pains or weakness whilst on lipid modification therapy.

Liver Function Testing

- Baseline liver function should be measured before starting lipid modification therapy.
- Liver function should be measured within 3 months of starting treatment and at 12 months, but not again unless clinically indicated.
- Routine monitoring of liver function tests in asymptomatic people is not indicated after 12 months of initiating lipid lowering therapy.

Lipid Testing

- Measure full lipid profile by taking at least one lipid sample before starting lipid modification therapy. This should include measurement of total cholesterol, HDL cholesterol, non-HDL cholesterol and triglyceride concentrations. A fasting sample is not needed.
- Total cholesterol, HDL cholesterol and non-HDL cholesterol should be measured in all people who have been started on high-intensity statin treatment (both primary and secondary prevention, including atorvastatin 20 mg for primary prevention) at 3 months of treatment and aim for a greater than 40% reduction in non-HDL cholesterol.
- Consider an annual non-fasting blood test for non-HDL cholesterol to inform discussion at annual medication reviews.

Further details on creatine kinase, liver function and lipid testing during lipid lowering treatment are outlined in NICE guidance.

Rationale for Recommendation

Creatine Kinase

In order to identify people with pre-existing skeletal muscle disorders, NICE guidance recommends that people are asked about symptoms of persistent, generalised, unexplained muscle pain prior to lipid lowering therapy initiation. If these symptoms are present, creatine kinase levels should be measured before starting treatment.

People taking lipid lowering therapy have an increased incidence of develop muscle disorders and there is consensus that patients should be advised to seek medical advice if they develop significant muscle symptoms (such as pain, tenderness or weakness) so that creatine kinase levels can be measured.

There is no evidence to support routine monitoring of creatine kinase in asymptomatic people on lipid lowering treatment.

Liver Function Testing

Baseline liver function testing is performed before lipid lowering treatment initiation to identify patients with pre-existing liver dysfunction or secondary causes of dyslipidaemia.

Product literature states that lipid lowering treatment is contraindicated in people with active liver disease or persistently raised serum transaminases [>3 times the upper limit of normal, ULN]. It also states that lipid modification therapy should be initiated with caution for people with known hepatic impairment.

NICE guidance suggests that liver function is measured within 3 months of starting treatment and at 12 months. This is consistent with product literature which states that moderate elevations of serum transaminases [$< 3 \times$ ULN] have been reported following therapy with simvastatin. These changes appeared soon after initiation of therapy, were often transient, were not accompanied by any symptoms and interruption of treatment was not required.

There is no evidence to support routine monitoring of liver function testing in asymptomatic people after 12 months on lipid lowering treatment.

Lipid Testing

There is no evidence to support routine monitoring of lipid levels in asymptomatic people after 3 months on lipid lowering treatment. Consider an annual non-fasting blood test for non-HDL cholesterol to inform the discussion in annual medication reviews.

References

1. NHS Digital. Statins. Available at: <https://www.nhs.uk/conditions/statins/>
2. Collins R, Reith C, Emberson J, Armitage J, Baigent C, Blackwell L, Blumenthal R, Danesh J, Davey Smith G, DeMets D, et al. Interpretation of the evidence for the efficacy and safety of statin therapy. *Lancet*. 2016 Sep 8 : S0140-6736(16)31357-5. Published online 2016 Sep 8. doi: 10.1016/S0140-6736(16)31357-5
3. Yusuf S, Bosch J, Dagenais G, Zhu J, Xavier D, Liu L, Pais P, López-Jaramillo P, Leiter L, Dans A, et al. Cholesterol Lowering in Intermediate-Risk Persons without Cardiovascular Disease. *N Engl J Med*. 2016 May 26; 374(21): 2021–2031. Published online 2016 Apr 2. doi: 10.1056/NEJMoa1600176
4. Joint Formulary Committee. British National Formulary [online] London: BMJ Group and Pharmaceutical Press. Atorvastatin. Available at: <https://bnf.nice.org.uk/drug/atorvastatin.html> [Accessed on 7 Aug 19]
5. C Cooper A, Nherera L, Calvert N, O'Flynn N, Turnbull N, Robson J, Camosso-Stefinovic J, Rule C, Browne N, Ritchie G, Stokes T, Mannan R, Brindle P, Gill P, Gujral R, Hogg M, Marshall T, Minhas R, Pavitt L, Reckless J, Rutherford A, Thorogood M, Wood D(2008) Clinical Guidelines and Evidence Review for Lipid Modification: cardiovascular risk assessment and the primary and secondary prevention of cardiovascular disease London: National Collaborating Centre for Primary Care and Royal College of General Practitioners.
6. NICE [2013]. Cardiovascular disease: risk assessment and reduction, including lipid modification Clinical guideline [CG181]. Published date: July 2014 Last updated: September 2016 . Available at: <https://www.nice.org.uk/guidance/cg18>
7. Electronic Medicines Compendium [2014] Simvastatin 40 mg tablets: summary of product characteristics, <https://www.medicines.org.uk/emc/medicine/24536>.
8. Electronic Medicines Compendium [2013] Atorvastatin 10 mg film-coated tablets: summary of product characteristics, <https://www.medicines.org.uk/emc/medicine/26431> [accessed 17 Jan 2017].
9. Smith CC, Bernstein LI, Davis RB, Rind DM, Shmerling RH. Screening for statin-related toxicity: the yield of transaminase and creatine kinase measurements in a primary care setting. *Arch Intern Med*. Mar 24 2003;163(6):688-692.
10. Sniderman AD. Is there value in liver function test and creatine phosphokinase monitoring with statin use? *Am J Cardiol*. Nov 4 2004;94(9A):30F-34F.

1.1.31 EE - Blood transfusion

Summary of intervention

A blood transfusion may be indicated if a patient has a shortage of red blood cells (RBC) causing haemodynamic instability or impeding oxygen delivery to tissues and organs. This can be for a variety of reasons including severe bleeding, cancer or a blood disorder. However, blood transfusion carries risks and only the minimum number of units should be transfused to avoid harm. It is recommended to use restrictive

thresholds for transfusion, and to give only a single unit at a time, except where the patient has active bleeding.

Number of interventions in 2018/19

Data are not currently available

Proposal

This guidance focuses on RBC transfusions for adults (or equivalent based on body weight for children or adults with low body weight) only.

Do not give RBC transfusions to patients with B12, folate or iron deficiency anaemia unless there is haemodynamic instability. If haemodynamic instability is present, treat this with transfusion of appropriate blood components (do not delay emergency transfusions).

Where, however, severe acute anaemia (Hb <70g/litre) exists that is symptomatic and prevents rehabilitation or mobilisation, those patients may benefit from a single unit of blood.

For adult patients (or equivalent based on body weight for children or adults with low body weight) needing RBC transfusion, suggest restrictive thresholds and giving a single unit at a time except in case of exceptions below.

Restrictive RBC transfusion thresholds are for patients who need RBC transfusions and who do not:

- Have major haemorrhage or
- Have acute coronary syndrome or
- Need regular blood transfusions for chronic anaemia.

While transfusions are given to replace deficient red blood cells, they will not correct the underlying cause of the anaemia. RBC transfusions will only provide temporary improvement. It is important to investigate why patients are anaemic and treat the cause as well as the symptoms.

Note: Consider whether a dramatic fall in haemoglobin could be due to a severe haemolytic episode and not associated with any of the 3 exceptions. This would also be a possible indication to transfuse more than one unit at a time.

When using a restrictive RBC transfusion threshold, consider a threshold of 70 g/litre and a haemoglobin concentration target of 70–90 g/litre after transfusion.

For patients with acute coronary syndrome, a RBC transfusion threshold of 80 g/litre should be considered and a haemoglobin concentration target of 80–100 g/litre after transfusion.

For patients requiring regular transfusion for chronic anaemia, NICE advise defining thresholds and haemoglobin concentration targets for each individual.

Rationale for Recommendation

NICE guidelines recommend single-unit RBC transfusion for adults (or equivalent based on body weight for children or adults with low body weight) who are not actively bleeding, do not have acute coronary syndrome or need regular blood transfusions for chronic anaemia. This decision should be based on a clinical assessment of each

individual patient including their underlying cause of anaemia. They also recommend that after each single-unit RBC transfusion the patient should be reassessed clinically, and have their haemoglobin levels checked and be given further transfusions if required.

Several randomised control trials (RCTs) have proven that it is safe to give single-unit RBC transfusions with a restrictive transfusion trigger (pre-transfusion haemoglobin level or symptoms of anaemia). After receiving a single-unit RBC transfusion, symptoms may be alleviated enough to make it possible to give alternative anaemia treatment and postpone the need for further blood transfusions.

There is high quality evidence that demonstrates a lack of benefit and, in some cases, harm to patients transfused to achieve an arbitrary transfusion level. If necessary, transfuse only the minimum number of units required instead of a liberal transfusion strategy. Potential risks and harms associated with RBC transfusions include:

- Pulmonary complications: transfusion of two or more RBC units in succession is associated with an increase in pulmonary oedema or transfusion-associated circulatory overload
- Volume overload
- Haemolysis, in particular for those with sickle cell disease
- Acute transfusion reaction due to allergy
- Transmission of infection

To monitor for transfusion reactions, observe and monitor the patient's condition and vital signs before, during and after blood transfusions.

This guidance is in line with the work of the Serious Hazards of Transfusion organisation.

References

1. NICE guidance: Blood transfusion [NG24]
<https://www.nice.org.uk/guidance/ng24>
2. NICE 2016 Blood transfusion Quality Standard [QS138]
3. Cochrane Review: Transfusion thresholds and other strategies for guiding allogenic red blood cell transfusion
4. NHS Advice: <https://www.nhs.uk/conditions/blood-transfusion/>
5. Choosing Wisely UK – Recommendations for blood transfusion:
<https://www.choosingwisely.co.uk/i-am-a-clinician/recommendations/#1528715344800-ce240876-45ec>
6. British Blood Transfusion Society:
[https://www.bbts.org.uk/blog/choosingwisely time to act /](https://www.bbts.org.uk/blog/choosingwisely%20time%20to%20act/)
7. Choosing Wisely Canada <https://choosingwiselycanada.org/transfusion-medicine/>
8. Choosing Wisely Canada Toolkit: Why give two when one will do
<https://choosingwiselycanada.org/perspective/transfusion-toolkit/>
9. JPAC Transfusion in surgery:
<https://www.transfusionsguidelines.org/transfusion-handbook/7-effective-transfusion-in-surgery-and-critical-care/7-1-transfusion-in-surgery>
10. International Society of Blood Transfusion: Single unit transfusion
<https://www.isbtweb.org/working-parties/clinical-transfusion/6-single-unit-transfusion/>

11. NHS Blood and Transplant – Single unit blood transfusions (pilot study King's College hospital): <https://hospital.blood.co.uk/patient-services/patient-blood-management/single-unit-blood-transfusions/>
12. Markus M Mueller, MS; Hans Van Remoortel, PhD; Patrick Meybhn, MS, PhD; et al. Recommendations from the 2018 Frankfurt Consensus Conference.<https://jamanetwork.com/journals/jama/article-abstract/2727453>
13. Jeffrey L Carson; Simon J Stanworth; John H Alexander; Nareg Roubinian; Dean A Fergusson; Darrell J Triulzi; Shaun G Goodman; Sunil V. Rao; Carolyn Doree; Paul C Hebert. Clinical trials evaluating red blood cell transfusion thresholds: An updated systematic review and with additional focus on patients with cardiovascular disease
<https://www.sciencedirect.com/science/article/abs/pii/S0002870318301169?via%3Dihub>
14. <https://www.shotuk.org/>

Appendix 1 includes a glossary of the clinical terms used in this document.

Appendix 3

Independent Expert Advisory Committee

Terms of Reference [as of May 2019]

Introduction

1. The Expert Advisory Committee for Evidence-based interventions makes recommendations on interventions provided by the NHS in England that evidence shows to be inappropriate for routine commissioning or inappropriate except in specific circumstances and as such do not represent good stewardship of finite resources.
2. The expert committee is an independent, expert committee comprising clinicians, guideline producers, commissioners, patients and academics.
3. The expert committee, established in 2019, is intended to provide independent advice and guidance to the Evidence-Based Interventions Programme (EBI), a joint enterprise between five national partners: the Academy of Medical Royal Colleges, NHS Clinical Commissioners (NHSCC), the National Institute for Health and Care Excellence (NICE) as well as NHS England and Improvement. The objectives of the EBI Programme are to prevent avoidable harm to patients, to avoid unnecessary operations, and to free up clinical time by only offering interventions on the NHS that are evidence-based and appropriate. The EBI Programme builds on previous and existing, local and national efforts to reach these objectives. It runs alongside the NHS England and NHS Clinical Commissioners' programme focused on items that should not be routinely prescribed in primary care. Both programmes follow similar principles, while one focuses on medicines and the other on interventions.
4. The terms of reference, reporting arrangements, and objectives of the committee may be subject to change. Should there be substantial changes, a new version of the terms of reference will be issued.

Role of the Expert Committee

5. The purpose of the committee is to provide expert advice to the Evidence Based Interventions Programme. In particular to:
 - Recommend a list of interventions in the NHS that are proven to be inappropriate that should not be routinely commissioned or should only be commissioned in specific circumstances to reduce patient harm, unnecessary intervention and to free up clinical time.
 - Draft clinical guidance based on rigorous evidence and balanced consensus amongst patients, clinicians and commissioners.

- Facilitate a public and system consultation on the guidance and incorporate feedback from the consultation to produce EBI guidance on specific interventions that should not be routinely commissioned and/or the criteria for when interventions should be commissioned.
 - Maximise the implementation of evidence-based guidance to reduce unnecessary and inappropriate interventions. The committee should seek to provide an ambitious number of recommended procedures in time for implementation at the start of the NHS financial year [i.e. complete its task by the end of each calendar year].
 - Advocate publicly for the EBI programme on a range of platforms and at events as appropriate.
6. The objectives of the committee are set by the EBI Programme's Senior Sponsors as well as the Board with members including but not limited to representation from patients, the Academy of Medical Royal Colleges, NICE, NHSCC, NHS England and Improvement.
 7. The committee's recommendations should be based on the best available evidence and be clear when judgements have necessarily been made where the available data and/or evidence are limited.

Accountability

8. The expert committee is an independent advisory group authorised by the EBI Programme Board. Annex A gives a summary of the reporting arrangement.
9. The committee's work programme is authorised through a remit from the EBI Programme Board. The committee submits all recommendations the Senior Sponsors at NHS England and Improvement and to the EBI Programme Board.

Membership

10. The co-chairs of the committee are appointed by the EBI Programme Board.
11. The EBI Programme Board shall discuss and agree the balance of expertise required for the group. The committee shall broadly consist of representatives such as GPs, physician and surgical specialties, patients, commissioners, academics and guideline producers.
12. The membership shall be regularly reviewed to ensure the balance of expertise is adequate to achieve the aim and objectives of the committee and the current work programme. The balance of expertise may therefore change over time.
13. Members shall be invited to join the committee by the National Medical Director and the National Director for Strategy and Innovation. The EBI Programme Board shall be consulted on new members.
14. Membership of the committee is offered in a personal capacity to individual experts to ensure continuity and balance of expertise.

15. The current membership is set out below.

Sub-groups

16. The expert committee will be supported by the Secretariat. Further, The committee Chairs and members may agree to form sub-groups on a permanent or ad hoc basis for specific work areas. Terms of reference for such groups shall be agreed by the committee.

Communication and transparency

17. The committee shall strive to be as transparent and open as it can be by publishing documents on the appropriate websites as and when appropriate.

18. All external communications shall be carried out through existing NHS England and Improvement, NHSCC, AoMRC and NICE channels.

19. Arrangements shall be made to draw the attention of key stakeholders when new items have been published on the website and superseded documents shall be appropriately achieved.

Performance review

20. It is important to review the relative effectiveness of the committee and identify any performance and progress gaps on a regular basis in light of these terms of reference. Reviews will be undertaken by the EBI Programme Board and the committee chairs. The reviews may include but are not limited to feedback from stakeholders, commissioners, sub-groups, or individuals.

21. The findings of the reviews shall be shared with the committee members.

Confidentiality and information legislation

22. Due to the sensitivity of the recommendations on inappropriate interventions, the committee members shall agree not to discuss or share any unpublished documents external to the group, nor shall any work be replicated in any form. All correspondence will only be via the secretariat and the Chairs of the committee.

23. Some discussion may take place with peers external to the committee members who can provide additional expertise on issues and data, however members must make it clear that the discussion must be kept confidential.

24. The committee members may be subject to “Freedom of Information” legislation and therefor under a statutory requirement to disclose certain information on request on and to abide by commitments set out in the Freedom of Information publication scheme²⁸. Those that are not subject to Freedom of Information legislation are expected to abide by the spirit of Freedom of Information legislation.

25. The committee members shall abide by the Data Protection Act 2018²⁹.

²⁸ <https://www.england.nhs.uk/contact-us/pub-scheme/>

²⁹ <http://www.legislation.gov.uk/ukpga/2018/12/contents/enacted>

Proceedings of meetings

Agenda

26. The Chairs with support from the Secretariat shall set the agenda for each meeting.

Management of the work programme

27. The Chairs and the Secretariat shall have an overview of all the work being undertaken by the committee and its sub-groups to ensure there is no duplication of work and that the work programme is successfully completed.

28. Agendas, minutes and all papers of the committee and all sub-groups will be shared with all the chairs so that there is no duplication of work. The Chairs of the committee shall have a standing invitation to all sub-groups.

Early identification of issues and risks

29. In order to ensure successful completion of this work, the committee shall keep under review current and potential issues and opportunities, internal and external risks together with mitigation strategies. An up-to-date register of issues and risks shall be maintained by the Secretariat.

Frequency of meetings

30. The frequency of meetings is for the committee to determine to achieve its objectives and work programme.

Format of meetings

31. It is for the committee to decide the format of the meetings. It will be for the committee itself to decide if, for instance, their discussions can be effectively facilitated by telephone or videoconference.

Quorum and decision making

32. Each member shall have the right to be fully heard as equal partners. There should be genuine dialogue.

33. Whilst achieving consensus should be the aim, the committee should not seek unanimity at the risk of failing to recognise different views or approaches on an issue. Once a position (or major/minor positions) is established by the committee, the members shall support that decision and recognise their responsibility not to undermine the authority of the group.

34. The quorum for the meeting shall be a third of members. If a quorum is not achieved the meeting may still proceed but a balance of viewpoints, for example between commissioners and clinicians should be maintained.

Communication with members

35. The main communication route will be via agendas, minutes of meetings, and meeting papers. These will be circulated to all members and copied to various key personnel working with the EBI Programme Board.

Responsibilities of Chairs, members and Secretariat

Declaration of interest

36. The Chairs and members shall declare any interests³⁰ that are relevant to the overall work of the committee and the specific agenda item under discussion. The Secretariat shall review and maintain such declarations and publish details as part of routine progress updates. Members shall withdraw from discussion of matters in which they feel that they cannot act impartially. Where this occurs, it shall be recorded in the minutes of the meeting.

Responsibilities of the Chairs

37. The Co-Chairs shall be responsible for:

- i. Reporting the committee's recommendations to the EBI Programme Board.
- ii. Effectively chairing meetings.
- iii. Ensuring the committee operates effectively and that recommendations are informed by the highest quality and/or latest applicable evidence.
- iv. The management and output of the committee.
- v. Ensuring every member has a fair opportunity to be heard and that no views are ignored or overlooked.
- vi. Allowing genuine dialogue to take place and diversity fully explored and discussed.
- vii. Endeavouring to achieve a consensus of opinion.
- viii. Ensuring the Secretariat accurately documents the proceedings and there is a clear audit trail showing how decisions were made.
- ix. Ensuring there is the right balance of the underlying subject matter, expertise and if necessary arranging training to enable members to fulfil their roles and ensuring records are kept of member's performance as necessary.
- x. Ensuring good knowledge management principles are adhered to.

Members' roles and responsibilities

38. Members will be expected to abide by the "Seven Principles of Public Life"³¹.

39. Members will ensure they understand why they have been appointed and in what capacity, and the role they are expected to play in the committee. Members shall understand the nature of any expertise that they are asked to contribute. Members with a particular expertise have a responsibility to make the committee aware of the full range of opinion within the discipline.

40. A member's role shall not be constrained by the expertise or perspective they were asked to bring to the committee. Members shall regard themselves as free to question and comment on the information provided or the views expressed by any of the other members, notwithstanding that the views or information do not relate to their own area of expertise.

41. If members believe the group's method of working is not rigorous or thorough enough they shall raise this initially with the Chairs and subsequently the Senior Responsible Officers at NHS England and Improvement. They have the right to ask that any remaining concerns be put on the record.

³⁰ <https://www.nice.org.uk/Media/Default/About/Who-we-are/Policies-and-procedures/declaration-of-interests-policy.pdf>

³¹ <https://www.gov.uk/government/publications/the-7-principles-of-public-life>

42. Members will be expected to attend at least 75% of the meetings and missing three consecutive meetings will be brought to the attention of the Chairs.
43. Substitutes during meetings will only be allowed at the discretion of the Chairs. Members shall advise the Chairs/Secretariat if they are not able to attend a meeting. Members are encouraged to submit written views/comments on agenda items when they are not able to attend a meeting.
44. Members will be expected to read papers and other material in advance to enable full participation. Some email communication will be required.

Role of the Secretariat

45. The Secretariat shall:
 - i. Support members by assembling and analysing clinical and numerical information to support the selection of procedures
 - ii. Support members with drafting and agreeing proposed clinical criteria.
 - iii. Advise members on relevant process and procedure and record conclusions of meetings.
 - iv. Bring to the attention of the Chairs and members, emerging issues of concern to the EBI Programme Board, so as to inform the committee's deliberations.
 - v. Arrange regular briefing meetings with the Chairs.
 - vi. Be an impartial facilitator and guard against introducing bias during the preparation of papers, during meetings, or in the reporting of the committee's deliberations.
 - vii. Ensure that the proceedings of meetings are documented in sufficient detail and within a reasonable period after meetings so that there is an audit trail showing how the group reached its decisions.
 - viii. Project manage the work to ensure success completion.
 - ix. Maintain an updated register of issues and risks.

Liabilities and indemnities of members

46. Legal proceedings by a third party against individual members of advisory groups are very exceptional. An advisory group member may be personally liable if he or she makes a fraudulent or negligent statement which results in a loss to a third party; or may commit a breach of confidence under common law or criminal offence under insider dealing legislation, if he or she misuses information gained through their position.
47. If legal proceedings are brought against any member by a third party, NHS England and Improvement will meet any personal civil liability that is incurred in the execution of their functions, unless they acted recklessly and provided that they have acted honestly, in good faith and without negligence³².

Remuneration of expenses

48. Members will be eligible to claim the cost of travel and subsistence expenses in line with NHS England and Improvement's policies. Members are entitled to fair and

³² <https://www.gov.uk/government/publications/governance-code-for-public-appointments>

prompt repayment provided they follow the rules governing the submission of claims and their timing.

Expert Advisory Committee Membership [as of January 2020]

Chair(s)	
Professor Martin Marshall – Co-Chair	Chair of the Royal College of General Practitioners
Professor Sir Terence Stephenson – Co-Chair	Chair of the Health Research Authority and Nuffield Professor of Child Health
Members	
Professor Derek Alderson	Royal College of Surgeons of England
Paul Chrisp	National Institute for Health and Care Excellence
Dr Sarah Clarke	Royal College of Physicians
Professor Adam Elshaug	University of Sydney
Pam Essler	Patient representative
Dr Sarah Markham	Patient representative
Dr Ash Paul	Public Health Consultant
Dr Josephine Sauvage	Clinical Commissioner
Catherine Thompson	Clinical Commissioner
April Wareham	Patient representative, Strategic Co-production Group, NHS England and NHS Improvement
Dr Tim Wilson	Managing Director Oxford Centre for Triple Value Healthcare and Honorary Clinical Fellow University of Oxford
Danny Keenan	Healthcare Quality Improvement Partnership
Secretariat	
Johannes Wolff	Head of EBI Programme
Dr Aoife Molloy	Head of Secretariat
Jodie Gallagher	Secretariat

Expert Advisory Committee – Guidance Development Methodology [as of May 2019]

Aim

1. Considering the challenges of reducing low value care the Expert Advisory Committee aims to develop lists of interventions that should not be commissioned on a routine basis because evidence shows them to be inappropriate or of low value to patients and the healthcare system. After developing a shortlist of interventions, guidance will be developed on each of the interventions in collaboration with clinical experts and patients. The guidance will be provided to the Evidence Based Interventions Programme for implementation using levers such as contract changes, tariff adjustments, support for patient engagement and behaviour change of clinicians, activity and variation monitoring and benchmarking of activity within Clinical Commissioning Groups (CCGs) and Sustainability and Transformation Partnerships (STPs). Providing national guidance on inappropriate procedures will help to address equity of priority setting decisions at local levels, improve quality of care through reducing low value care, and reduce duplication of work within the NHS.

Methods

Identifying interventions

2. A long list of interventions are identified using targeted database searching from various sources including:
 - National Institute of Health and Care Excellence (NICE) Do Not Do database
 - NICE Cost Savings Guidance recommendations
 - Academy of Medical Royal Colleges (AOMRC) Choosing Wisely UK recommendations
 - Choosing Wisely programmes in other countries (US, Canada, Australia)
 - Organisation for Economic Co-operation and Development (OECD) recommendations on wasteful spending in health
 - Peer-reviewed literature
 - Local CCG guidance on Procedures of Low Clinical Effectiveness
 - GIRFT reports
3. Suggestions of interventions that may be offered inappropriately in the NHS are sought from National Clinical Directors, experts at NICE, AOMRC, Royal Colleges, Specialist Societies, and CCGs as well as feedback from the consultation on the first EBI guidance. A short list of interventions that are proven in the literature to be inappropriate or of low value will be selected based on criteria below through collaboration of patients, clinicians and commissioners.
4. All Interventions identified via the above sources were included on the master list before applying exclusion criteria based on work by Professor Adam Elshaug³³.

Exclusion criteria

5. The following exclusion criteria are to be applied:

³³ Elshaug AG, Watt AM, Mundy L, Willis CD. Over 150 potentially low-value health care practices: an Australian study. *Med J Aust.* 2012;197(10):556–560. doi:10.5694/mja12.11083

- a) No procedure identified in the report
 - b) Pharmaceutical technology or codependent technology (intervention dependent on pharmaceutical)
 - c) Non-clinically defined intervention (e.g. public health or health promotion intervention)
 - d) Reports without clinically meaningful outcome measures
 - e) Cosmetic procedures, dental procedures
6. After the exclusion criteria are applied, interventions need to be examined further for feasibility of implementation. The interventions are checked by data analysts, against ICD10 and intervention codes, to ensure measurement of activity in the NHS in England, is possible. Volume of activity of the intervention in CCGs is examined and the variation between CCGs is explored. The list is shaped further using the following feasibility criteria.

Feasibility Criteria

7. The following feasibility criteria are to be applied:
- a) Reports for procedures that cannot be mapped to costing codes
 - b) Recommendations that have already been widely implemented through national programme (e.g. venous thromboembolism [VTE] prophylaxis)
 - c) Procedures of low activity (e.g. where CCG POLCE is effective at national level and activity <300 interventions annually in England)
8. Once the feasibility criteria have been applied an evidence summary is developed for each intervention including the strength and sources of evidence, the activity data for CCGs and the cost of the intervention to the commissioners calculated using RightCare methodology. The list of interventions is prioritised by the Expert Advisory Committee and also by patients and clinicians, through workshops. The evidence summaries should inform prioritisation and the challenges of implementation, measurement, and equity of the recommendations should be considered.

Categories of Interventions

9. To assist implementation, the list of procedures is categorised in terms of how CCGs should reduce commissioning of the interventions. Categories for implementation of recommendations from EBI programme:

Category 1: Procedures that have evidence of being clinically ineffective and/or exposing patients to unnecessary risk of harm and should not routinely be commissioned

Category 2: Procedures where evidence only shows a benefit in certain cases and should not be routinely commissioned unless standardised criteria are met

10. The Expert Advisory Committee will define the final list of interventions to be included in the EBI guidance by taking in to consideration:
- Clinical consensus (i.e. academic & specialty buy-in)
 - Action-ability and balance of portfolio (i.e. within CCG's control)

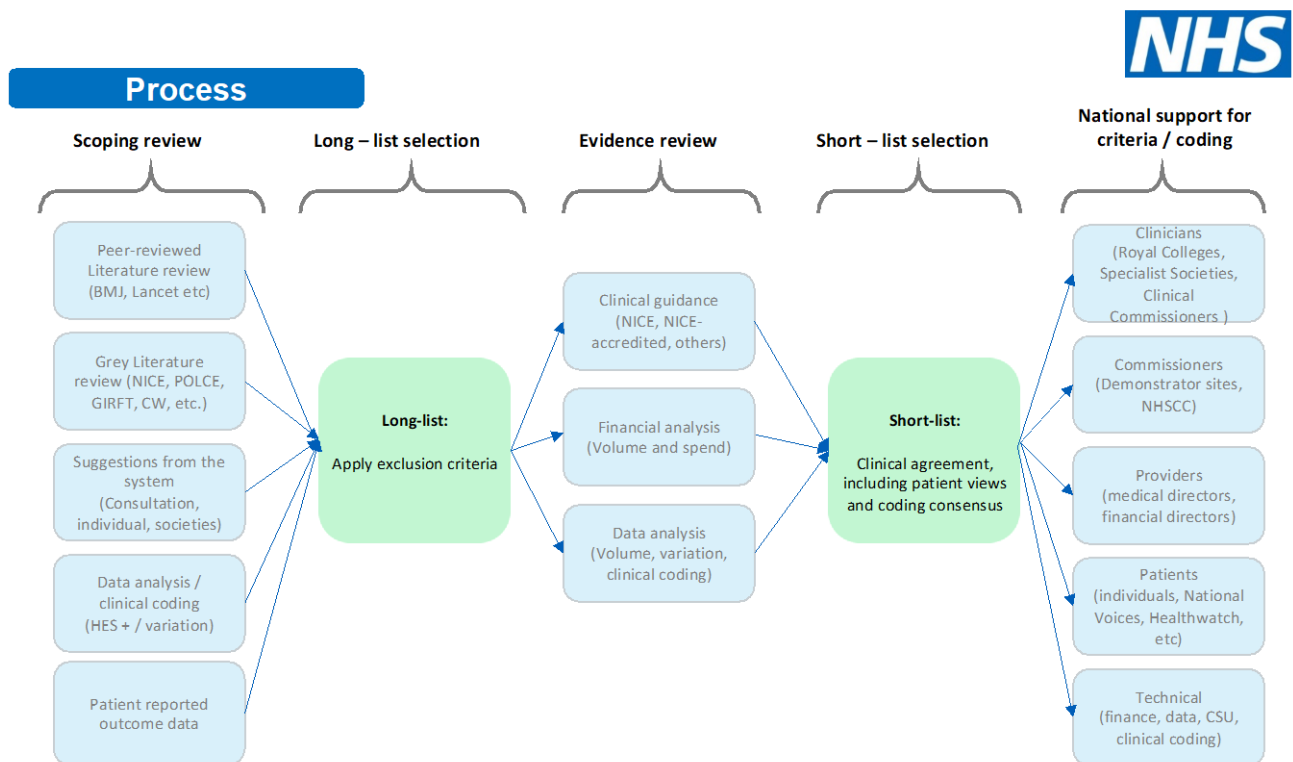
- Volume and high variation [i.e. variation of CCGs with policy]
- Inappropriate spend [cost saving opportunity]

Development of Recommendations

11. For each intervention a recommendation will be developed for the EBI programme guidance. The recommendations will be informed by the evidence gathered for the evidence summaries and based on NICE or NICE-accredited guidance where possible. Recommendations will be written collaboratively with the relevant specialist societies and colleges. Every effort will be made to collaborate with all specialists involved with a particular intervention. The final recommendations will be agreed with the relevant specialists and submitted to the EBI programme for national consultation.

Incorporating Feedback from the Consultation

12. Feedback received through the national consultation and associated engagement events will be reviewed and incorporated in to the recommendations by the Expert Advisory Committee through collaboration with the relevant specialists. Final versions of the recommendations will be developed and submitted to the EBI Programme for publication as EBI statutory guidance.



EBI Expert Advisory Committee Meeting June 2019

Appendix 4

Equality Impact Assessment

1. Throughout the development of the policies and processes cited in this document, we have:
 - Given due regard to the need to eliminate discrimination, harassment and victimisation, to advance equality of opportunity, and to foster good relations between people who share a relevant protected characteristic (as cited under the Equality Act 2010) and those who do not share it; and
 - Given regard to the need to reduce inequalities between patients in access to, and outcomes from healthcare services and to ensure services are provided in an integrated way where this might reduce health inequalities
2. We are completing a full Equality and Health Inequalities Assessment (EHIA) as part of this engagement which we will publish alongside the engagement response and other guidance documents. As part of the EHIA we will be engaging with representatives from relevant protected characteristics and asking specific questions in the engagement:

Engagement Questions
<p><i>Question 2: What positive and negative impact will these changes make to improving access, experience and outcomes for the following groups and how can any risks be mitigated to ensure the changes do not worsen health inequalities for:</i></p> <ul style="list-style-type: none">• <i>groups protected under the Equality Act 2010: age; disability; gender reassignment; marriage and civil partnership; pregnancy and maternity; race; religion or belief; sex; sexual orientation?</i>• <i>those individuals who experience health inequalities such as people who are homeless or insecurely housed, former prisoners, gypsy, Roma, traveller veterans and carers?</i>

Appendix 5

Coding methodology summary tables

Interventions where data are sufficiently robust³⁴ to determine rates of variation and set national activity goals using the same methodology as in the initial list of 17.³⁵

A – Diagnostic coronary angiography for low risk, stable chest pain	
Analysis	
What are we counting?	The number of invasive coronary angiographies in patients who did not have Acute Coronary Syndrome.
Limitations of data / coding	<p>The procedure and diagnostic codes have been identified, however it is not possible to code the specific indications due to both poor quality data and some of the required data not being included within existing datasets (e.g. whether the patient is low risk).</p> <p>However, it is possible to identify and exclude patients with diagnoses where this procedure would be appropriate (e.g. acute myocardial infarction).</p> <p>We therefore consider the data sufficiently robust to set a goal but exploring options to improve data on CT coronary angiography through diagnostic imaging datasets (DID), expected to be available later this year.</p>
Estimated activity	<ul style="list-style-type: none"> • 26,629 episodes during 2018/19 • Age/sex std rate per 100,000 – 44.8 • Reduction opportunity: 9,529 [36%] based on 25th percentile of activity across CCGs. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 3.2 ○ 10th percentile – 22.0 ○ 25th percentile – 30.1 ○ 50th percentile – 41.4

³⁴ In general, the procedure and diagnostic codes have been identified and therefore deemed robust enough to determine rates and goals. However, there are certain limitations unique to each intervention which are set out for each intervention in the 'limitations of data/coding' section in these tables (Appendix 5).

³⁵ For category 1 interventions, those that should not be routinely performed or commissioned unless accompanied by an IFR, the anticipated figure is zero. Whereas for category 2 interventions, an anticipated activity level should be reduced to the 25th percentile.

	○ 90 th percentile – 71.3
Coding summary	
Summary	Coding is available for the procedure, and partial coding is available for the indications.
Procedure	Invasive coronary angiography
Can the procedure be coded?	Yes
Were there any ambiguities/ queries relating to the procedure coding?	No
Indication(s)/patient group(s)	Patients may be offered invasive coronary angiography if they have low risk, stable cardiac pain (i.e. chest pain that is not an Acute Coronary Syndrome) but there is concern that it is due to an ischaemic cause, they have already had CT coronary angiography which was inconclusive, and may also have had other non-invasive imaging which was inconclusive.
Can the indication be coded?	Partial coding is available. Specific indications for invasive coronary angiography cannot be coded. Low risk stable cardiac pain cannot be coded. Other causes of cardiac pain such as unstable angina and MI can be coded and excluded.
Were there any ambiguities/ queries relating to the indication coding?	Yes Cardiac imaging can be coded in other datasets for example DIDs, but not the findings or the time relationship between the different imaging procedures and invasive coronary angiography.
Codes identified	
Procedure codes	K63.1 Angiocardiography of combination of right and left side of heart K63.2 Angiocardiography of right side of heart NEC K63.3 Angiocardiography of left side of heart NEC K63.4 Coronary arteriography using two catheters K63.5 Coronary arteriography using single catheter K63.6 Coronary arteriography NEC K63.8 Other specified K63.9 Unspecified
Diagnosis codes	Low risk stable cardiac pain is not codable Exclude patients with: I20.0 – unstable angina I20.1 – angina with spasm I21.0-21.9 – acute MI I22.0-9 – subsequent MI I23.0-8 – complications after MI

	I24.0-9 – other acute ischaemic heart disease I25.0-9 – chronic ischaemic heart disease [Note – cancer diagnoses are a global exclusion]
Any other criteria [e.g. patient age]	No
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Where the procedure code in dominant position is: K63.1 OR K63.2 OR K63.3 OR K63.4 OR K63.5 OR K63.6 OR K63.8 OR K63.9 AND Diagnosis code in any position IS NOT: I20.0 OR I20.1 OR I21.0-21.9 OR I22.0-9 OR I23.0-8 OR I24.0-9 OR I25.0-9
SQL code	<code>left(der.Spell_Dominant_Procedure, 4) like '%K63[12345689]%' and (apcs.der_diagnosis_all not like '%I20[01]%' and apcs.der_diagnosis_all not like '%I2[12345]%')</code>

B – Repair of minimally symptomatic inguinal hernia

Analysis

What are we counting?	The number of patients with primary inguinal hernia repair in people who had unilateral or bilateral inguinal hernia without obstruction or gangrene, irrespective of whether there was any period of watchful waiting.
Limitations of data / coding	The clinical criteria can only be partially coded. The procedure and diagnostic codes have been identified, however it is not possible to code the specific indications, including previous periods of watchful waiting and its duration. However, we consider data sufficiently robust to set a goal.
Estimated annual volume	<ul style="list-style-type: none"> • 56,457 episodes during 2018/19 • Age/sex std rate per 100,000 – 95.0

	<ul style="list-style-type: none"> • Reduction opportunity: 7,891 [14%] based on 25th percentile of activity across CCGs. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 1.6 ○ 10th percentile – 75.2 ○ 25th percentile – 84.1 ○ 50th percentile – 94.3 ○ 75th percentile – 117.2
Coding summary	
Summary	Coding is available for the procedure, and partial coding is available for the indications.
Procedure	Surgical repair of inguinal hernia
Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	It was confirmed that this relates only to primary repair, not recurrent hernias.
Indication(s)/patient group(s)	People with minimally symptomatic inguinal hernia can be managed safely with watchful waiting for up to 2 years after assessment. Conservative management should therefore be considered in appropriately selected patients. The policy does not identify specific criteria for surgical intervention.
Can the indication be coded?	Partial coding is available.
Were there any ambiguities/ queries relating to the indication coding?	Less severe inguinal hernia 'without obstruction or gangrene' can be coded, but a previous period of watchful waiting and its duration cannot be coded.
Codes identified	
Procedure codes	T20.1 Primary repair of inguinal hernia using insert of natural material T20.2 Primary repair of inguinal hernia using insert of prosthetic material T20.3 Primary repair of inguinal hernia using sutures T20.4 Primary repair of inguinal hernia and reduction of sliding hernia T20.8 Other specified T20.9 Unspecified
Diagnosis codes	K40.2 Bilateral inguinal hernia, without obstruction or gangrene K40.9 Unilateral or unspecified inguinal hernia, without obstruction or gangrene [Note – cancer diagnoses are a global exclusion]

Any other criteria (e.g. patient age)	No
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Where procedure code in dominant position is: T20.1 OR T20.2 OR T20.3 OR T20.4 OR T20.8 OR T20.9 AND Primary diagnosis code is: K402 OR K409
SQL code	<code>left(der.Spell_Dominant_Procedure,3)='T20' and der.Spell_Primary_Diagnosis like 'K40[29]%'</code>

C – Surgical intervention for chronic sinusitis

Analysis

What are we counting?	The number of endoscopic sinus surgeries in patients diagnosed with chronic sinusitis.
Limitations of data / coding	The procedure and diagnostic codes have been identified and therefore data are sufficiently robust to set a goal.
Activity	<ul style="list-style-type: none"> • 3,914 episodes during 2018/19 • Age/sex std rate per 100,000 – 6.6 • Reduction opportunity: 1,568 (40%) based on 25th percentile of activity across CCGs. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 3.9 ○ 10th percentile – 2.7 ○ 25th percentile – 4.2 ○ 50th percentile – 5.9 ○ 90th percentile – 10.4
Coding summary	
Summary	Coding is available for the procedure and partial coding is available for the indications
Procedure	Functional endoscopic sinus surgery
Can the procedure be coded?	Yes

Were there any ambiguities/queries relating to the procedure coding?	No
Indication(s)/patient group(s)	Patients with chronic rhinosinusitis, with moderate to severe symptoms, who have tried appropriate treatments in primary care, the diagnosis has been confirmed and a shared decision has been made. Surgery is also appropriate in patients with a number of other conditions who do not meet these criteria [e.g. suspected neoplasia, complications of sinusitis, immunodeficiency and some other underlying conditions].
Can the indication be coded?	Partial coding is available.
Were there any ambiguities/ queries relating to the indication coding?	We are able to identify diagnostic and procedure codes, however we do not have codes to identify specific indications or previous treatments [e.g. recurrent acute sinusitis]. The coding includes chronic sinusitis only.
Coding identified	
Procedure codes	Y76.1 Functional endoscopic sinus surgery
Diagnosis codes	J32.0 Chronic maxillary sinusitis J32.1 Chronic frontal sinusitis J32.2 Chronic ethmoidal sinusitis J32.3 Chronic sphenoidal sinusitis J32.4 Chronic pansinusitis J32.8 Other chronic sinusitis J32.9 Chronic sinusitis, unspecified [Note – cancer diagnoses are a global exclusion]
Any other criteria [e.g. patient age]	No
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Where the procedure code in any position: Y76.1 AND Primary diagnosis code is: J32.0 OR J32.1 OR J32.2 OR J32.3 OR J32.4 OR J32.8 OR

	J32.9
SQL code	apcs.der_procedure_all like '%Y761%' and der.Spell_Primary_Diagnosis like 'J32%'

D – Removal of adenoids	
Analysis	
What are we counting?	Adenoidectomies carried out in the same spells as insertion of grommets in children (age<19 years) with chronic otitis media with effusion and without another condition (e.g. cleft lip) where adenoidectomy may be appropriate.
Limitations of data / coding	The procedure and diagnostic codes have been identified however, the clinical criteria are only partially identifiable within the data. The specific indications for adjuvant adenoidectomy cannot be identified. The data are sufficiently robust to set a goal.
Activity	<ul style="list-style-type: none"> • 1,921 episodes during 2018/19 • Age/sex std rate per 100,000 – 3.2 • Reduction opportunity: 1,131 (59%) based on 25th percentile of activity across CCGs. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 8.0 ○ 10th percentile – 0.9 ○ 25th percentile – 1.5 ○ 50th percentile – 2.9 ○ 90th percentile – 7.0
Coding summary	
Summary	Coding is available for the procedure and partial coding is available for the indications
Procedure	Adenoidectomy performed at the same time as insertion of grommets
Can the procedure be coded?	Yes
Were there any ambiguities/ queries relating to the procedure coding?	No
Indication(s)/ patient group(s)	Children undergoing grommet insertion for treatment of otitis media with effusion (OME) may also be offered adjuvant adenoidectomy if they have persistent and / or frequent upper respiratory tract symptoms, or they are undergoing surgery for re-insertion of

	<p>grommets due to recurrence of previously surgically treated OME, or they are undergoing grommet surgery for treatment of recurrent acute otitis media.</p> <p>This guidance does not cover other conditions where adenoidectomy may be indicated, such as in the treatment for obstructive sleep apnoea or sleep disordered breathing in children, in the treatment of chronic rhinosinusitis in children, or in preparation for speech surgery in conjunction with the cleft surgery team.</p>
Can the indication be coded?	Partial coding is available
Were there any ambiguities/queries relating to the indication coding?	<p>Chronic mucoid otitis media [glue ear] can be coded, but not the specific indications for adjuvant adenoidectomy. Other conditions that may be treated with adenoidectomy can be coded and excluded.</p> <p>NICE guidance on grommets refers to <12s only, but EBI guidance to children <19 years. This coding therefore includes children <19 years.</p>
Coding identified	
Procedure codes	<p>E20.1 Total adenoidectomy E20.4 Suction diathermy adenoidectomy E20.8 Other specified operations on adenoid E20.9 Unspecified operations on adenoid</p> <p>With: D15.1 Myringotomy with insertion of ventilation tube through tympanic membrane</p>
Diagnosis codes	<p>H65.3 Chronic mucoid otitis media</p> <p>Exclusions:</p> <ul style="list-style-type: none"> G47.3 Sleep apnoea J32.0 Chronic maxillary sinusitis J32.1 Chronic frontal sinusitis J32.2 Chronic ethmoidal sinusitis J32.3 Chronic sphenoidal sinusitis J32.4 Chronic pansinusitis J32.8 Other chronic sinusitis J32.9 Chronic sinusitis, unspecified <ul style="list-style-type: none"> Q35.1 Cleft hard palate Q35.3 Cleft soft palate Q35.5 Cleft hard palate with cleft soft palate Q35.7 Cleft uvula Q35.9 Cleft palate, unspecified Q37.0 Cleft hard palate with bilateral cleft lip Q37.1 Cleft hard palate with unilateral cleft lip Q37.2 Cleft soft palate with bilateral cleft lip

	<p>Q37.3 Cleft soft palate with unilateral cleft lip Q37.4 Cleft hard and soft palate with bilateral cleft lip Q37.5 Cleft hard and soft palate with unilateral cleft lip Q37.8 Unspecified cleft palate with bilateral cleft lip Q37.9 Unspecified cleft palate with unilateral cleft lip</p> <p>[Note – cancer diagnoses are a global exclusion]</p>
Any other criteria [e.g. patient age]	Age <19 years
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	<p>Procedure codes in any position are: E20.1 OR E20.4 OR E20.8 OR E20.9 AND D15.1</p> <p>AND Primary diagnosis code is: H65.3</p> <p>AND Diagnosis codes in any position are NOT: G47.3 OR J32.0 OR J32.1 OR J32.2 OR J32.3 OR J32.4 OR J32.8 OR J32.9 OR Q35.1 OR Q35.3 OR Q35.5 OR Q35.7 OR Q35.9 OR Q37.0 OR Q37.1 OR Q37.2 OR Q37.3 OR Q37.4 OR Q37.5 OR Q37.8 OR Q37.9</p>

	AND Patient age <19
SQL code	apcs.der_procedure_all like '%E20[1489]%' and apcs.der_procedure_all like '%D151%' and der.Spell_Primary_Diagnosis like 'H653%' and (apcs.der_diagnosis_all not like '%G473%' and apcs.der_diagnosis_all not like '%J32%' and apcs.der_diagnosis_all not like '%Q3[57]%') and isnull(APCS.Age_At_Start_of_Spell_SUS,APCS.Der_Age_at_CDS_Activity_Date)<19

E – Arthroscopic surgery for meniscal tears

Analysis

What are we counting?	The number of patients who have arthroscopic meniscal surgery for a meniscal tear or other derangement.
Limitations of data / coding	The procedure and diagnostic codes have been identified. Coding is available for meniscal tear but not for all the specific indications (e.g. 3 months of non-operative treatment, or the presence of locking). Data are sufficiently robust to set a goal.
Activity	<ul style="list-style-type: none"> • 38,106 episodes during 2018/19 • Age/sex std rate per 100,000 – 64.1 • Reduction opportunity: 10,597 (28%) based on 25th percentile of activity across CCGs. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 2.7 ○ 10th percentile – 36.8 ○ 25th percentile – 49.7 ○ 50th percentile – 67.0 ○ 90th percentile – 99.0
Coding summary	
Summary	Coding is available for the procedure and partial coding is available for the indications
Procedure	Knee arthroscopy to treat meniscal tear or other derangement
Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	No
Indication(s)/patient group(s)	Arthroscopic surgery may be carried out for patients with meniscal tears who still have symptoms after three months of non-operative treatment. It may also be carried out as first-line treatment in patients who have a locked knee from a

	bucket handle tear, or who have an acute injury and a potentially repairable meniscus shown on MRI.
Can the indication be coded?	Partial coding is available
Were there any ambiguities/ queries relating to the indication coding?	Coding is available for meniscal tear but not for all the specific indications above (e.g. three months of non-operative treatment, or the presence of locking).
Coding identified	
Procedure codes	W82.1 Endoscopic total excision of semilunar cartilage W82.2 Endoscopic resection of semilunar cartilage NEC W82.3 Endoscopic repair of semilunar cartilage W82.8 Other specified W82.9 Unspecified
Diagnosis codes	M23.2 Derangement of meniscus due to old tear or injury M23.3 Other meniscus derangements S83.2 Tear of meniscus, current [Note – cancer diagnoses are a global exclusion]
Any other criteria (e.g. patient age)	No
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Where the dominant procedure code is: W82.1 OR W82.2 OR W82.3 OR W82.8 OR W82.9 AND Diagnosis code in primary position is: M23.2 OR M23.3 OR S83.2
SQL code	<code>left(der.Spell_Dominant_Procedure,3)='W82' and (der.Spell_Primary_Diagnosis like '%M23[23]%' or der.Spell_Primary_Diagnosis like '%S832%')</code>

F – Troponin test

Analysis

What are we counting?	The number of troponin tests carried out in emergency care.
-----------------------	---

Limitations of data / coding?	The procedure and diagnostic codes have been identified, however it is not possible to code the specific indications. Use of the Emergency Care Data Set (ECDS) is still being embedded so reporting may be better at some sites than others and outputs may be skewed by incomplete reporting.
Estimated annual volume and cost of activity, based on SPH coding	<ul style="list-style-type: none"> • 577,538 attendances during 2018/19 • Age/sex std rate per 100,000 – 972.1 • Reduction opportunity: 229,114 (45%) based on 25th percentile of activity across CCGs. This analysis is based on excluding CCGs served by providers with very poor coding. • Variation (age/sex std rates based on adjusted data): <ul style="list-style-type: none"> ○ N-fold – 2.3³⁶ ○ 10th percentile – 357.5 ○ 25th percentile – 733.0 ○ 50th percentile – 1,178.9 ○ 90th percentile – 2,161.5
Coding summary	
Summary	Partial coding is available for the procedure, but coding is not available for the indications
Procedure	Troponin test
Can the procedure be coded?	Coding is available for troponin tests carried out in emergency care.
Were there any ambiguities/queries relating to the procedure coding?	The codes used do not identify the tests as high-sensitivity troponin assays.
Indication(s)/patient group(s)	Troponin blood testing should be used to diagnose acute myocardial infarction only where a clinical diagnosis of acute coronary syndrome (ACS) is suspected or for prognosis in pulmonary embolism. The use of high-sensitivity troponin test should be considered alongside the clinical presentation, patient characteristics and ECG findings.
Can the indication be coded?	No
Were there any ambiguities/queries relating to the indication coding?	Coding is not available for the indications for troponin testing.

³⁶ For two interventions (F – troponin testing and K – radiofrequency facet joint denervation), CCGs with zero activity were excluded in the n-fold (CCG variation calculation).

Coding identified	
Procedure codes	Emergency Care Dataset [ECDS] codes (SNOMED CT Identifier [SCTID]): Troponin measurement: 105000003 Troponin I measurement: 121870001 Plasma troponin I measurement: 313724009 Serum troponin I measurement: 313616005 Troponin T measurement: 121871002 Plasma troponin T measurement: 314068007 Serum troponin T measurement: 166794009 Troponin T cardiac measurement: 105001004 High sensitivity cardiac troponin T measurement: 784261000000103
Diagnosis codes	Not available [Note – cancer diagnoses are a global exclusion]
Any other criteria (e.g. patient age)	No
Will the procedure be carried out in OP or as APC?	Emergency care
Coding logic	Investigation field contains one of the following SCTID codes: 105000003 or 121870001 or 313724009 or 313616005 or 121871002 or 314068007 or 166794009 or 105001004 or 784261000000103
SQL code	<pre>ecds.Der_EC_Investigation_All like '%105000003%' or ecds.Der_EC_Investigation_All like '%12187000[12]%' or ecds.Der_EC_Investigation_All like '%313724009%' or ecds.Der_EC_Investigation_All like '%313616005%' or ecds.Der_EC_Investigation_All like '%314068007%' or ecds.Der_EC_Investigation_All like '%166794009%' or ecds.Der_EC_Investigation_All like '%105001004%' or ecds.Der_EC_Investigation_All like '%784261000000103%'</pre>

G – Surgical removal of kidney stones

Analysis

What are we counting?	The number of procedures for surgical removal of urinary tract stones (all sizes) in adults, not including ESWL.
-----------------------	--

Limitations of data / coding	The procedure and diagnostic codes have been identified, however the analysis cannot indicate the appropriateness of the intervention [e.g. the size of the calculus] or previous treatments undertaken. However, data are sufficiently robust to set a goal.
Activity	<ul style="list-style-type: none"> • 14,457 episodes during 2018/19 • Age/sex std rate per 100,000 – 24.3 • Reduction opportunity:3,220 [22%] based on 25th percentile of activity across CCGs. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 2.1 ○ 10th percentile – 16.2 ○ 25th percentile – 19.7 ○ 50th percentile – 24.1 ○ 90th percentile – 34.7
Coding summary	
Summary	Coding is available for the procedures, and partial coding is available for the indications.
Procedure	Removal of urinary tract stones by surgical interventions such as ureteroscopy or percutaneous stone surgery
Can the procedure be coded?	Coding is available for the removal of urinary tract stones by different surgical interventions
Were there any ambiguities/ queries relating to the procedure coding?	The guidance is called 'surgical removal' and includes ureteroscopy and percutaneous stone surgery. It defines ESWL as a non-surgical technique which should be considered first-line.
Indication(s)/ patient group(s)	Patients with a renal or ureteric calculus. Different management options (watchful waiting, ESWL or surgery) are recommended depending on the location and size of the calculus. ESWL is the first-line in most circumstances when intervention is needed, but in some cases surgery is proposed as the first-line, or may follow ESWL, if appropriate.
Can the indication be coded?	Partial coding is available.
Were there any ambiguities/ queries relating to the	Coding is available for the presence of a urinary tract calculus, but not for the size of the calculus or for other indications such as previous treatment to identify whether the procedure was appropriate for the particular patient.

indication coding?	
Coding identified	
Procedure codes	<p>Surgical treatments</p> <p>M09.4 Endoscopic extraction of calculus of kidney NEC</p> <p>M09.8 Other specified</p> <p>M16.4 Percutaneous nephrolithotomy NEC</p> <p>M26.1 Nephroscopic laser fragmentation of calculus of ureter</p> <p>M26.2 Nephroscopic fragmentation of calculus of ureter NEC</p> <p>M26.3 Nephroscopic extraction of calculus of ureter</p> <p>M27.1 Ureteroscopic laser fragmentation of calculus of ureter</p> <p>M27.2 Ureteroscopic fragmentation of calculus of ureter NEC</p> <p>M27.3 Ureteroscopic extraction of calculus of ureter</p> <p>M27.8 Other specified</p> <p>M28.1 Endoscopic laser fragmentation of calculus of ureter NEC</p> <p>M28.2 Endoscopic fragmentation of calculus of ureter NEC</p> <p>M28.3 Endoscopic extraction of calculus of ureter NEC</p> <p>M28.4 Endoscopic catheter drainage of calculus of ureter</p> <p>M28.5 Endoscopic drainage of calculus of ureter by dilation of ureter</p> <p>M28.8 Other specified</p> <p>M28.9 Unspecified</p>
Diagnosis codes	<p>N20.0 Calculus of kidney</p> <p>N20.1 Calculus of ureter</p> <p>N20.2 Calculus of kidney with calculus of ureter</p> <p>N20.9 Urinary calculus, unspecified</p> <p>[Note – cancer diagnoses are a global exclusion]</p>
Any other criteria [e.g. patient age]	Adult [aged >=19 years]
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	<p>Where procedure code in dominant position is:</p> <p>M09.4 OR</p> <p>M09.8 OR</p> <p>M16.4 OR</p> <p>M26.1 OR</p> <p>M26.2 OR</p> <p>M26.3 OR</p> <p>M27.1 OR</p> <p>M27.2 OR</p> <p>M27.3 OR</p> <p>M27.8 OR</p> <p>M28.1 OR</p> <p>M28.2 OR</p> <p>M28.3 OR</p>

	M28.4 OR M28.5 OR M28.8 OR M28.9 OR AND Primary diagnosis code is: N20.0 OR N20.1 OR N20.2 OR N20.9 AND Patient age >=19 years
SQL coding	<pre>(left(der.Spell_Dominant_Procedure,4) in ('M094','M098','M164','M261','M262','M263','M271', 'M272','M273','M278') OR left(der.Spell_Dominant_Procedure,3)='M28') and der.Spell_Primary_Diagnosis like '%N20[0129]%' and isnull(APCS.Age_At_Start_of_Spell_SUS,APCS.Der_Age at CDS Activity Date) between 19 and 120</pre>

H – Cystoscopy for men with uncomplicated lower urinary tract symptoms

Analysis

What are we counting?	The number of cystoscopy procedures in men.
Limitations of data / coding	The procedure codes have been identified, however data on specific indications and diagnoses is limited.
Activity	<ul style="list-style-type: none"> • 50,685 episodes during 2018/19 • Age/sex std rate per 100,000 – 85.3 • Reduction opportunity: 31,687 [63%] based on 25th percentile of activity across CCGs. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 11.7 ○ 10th percentile – 22.6 ○ 25th percentile – 33.6 ○ 50th percentile – 50.8 ○ 90th percentile – 264.5
Coding summary	
Summary	Coding is available for the procedure; however, no coding is available for the indications or diagnoses. Due to the high rate of intervention at the 90th percentile, the 25th percentile-based reduction opportunity may be inappropriately high.

Procedure	Cystoscopy for men
Can the procedure be coded?	Partial coding is available.
Were there any ambiguities/queries relating to the procedure coding?	Not all indications and diagnoses can be coded.
Indication(s)/patient group(s)	Men with lower urinary tract symptoms (LUTS) should be offered cystoscopy only when clinically indicated, for example due to recurrent infection, sterile pyuria, haematuria, profound symptoms or pain.
Can the indication be coded?	No
Were there any ambiguities/ queries relating to the indication coding?	No
Coding identified	
Procedure codes	M45.1 Diagnostic endoscopic examination of bladder and biopsy of lesion of bladder NEC M45.2 Diagnostic endoscopic examination of bladder and biopsy of lesion of prostate NEC M45.3 Diagnostic endoscopic examination of bladder and biopsy of lesion of bladder using M45.4 Diagnostic endoscopic examination of bladder and biopsy of lesion of prostate using M45.5 Diagnostic endoscopic examination of bladder using rigid cystoscope M45.8 Other specified M45.9 Unspecified
Diagnosis codes	Not available [Note – cancer diagnoses are a global exclusion]
Any other criteria (e.g. patient age)	Male
Will the procedure be carried out in OP or as APC?	Admitted patient care
Coding logic	Where procedure code in dominant position is: M45.1 OR M45.2 OR M45.3 OR M45.4 OR M45.5 OR M45.8 OR

	M45.9 AND Patient gender is male
SQL code	<code>left (der.Spell_Dominant_Procedure, 3)='M45' and apcs.sex=1</code>

I – Surgical intervention for Benign Prostatic Hyperplasia (BPH)

Analysis

What are we counting?	The surgical intervention to remove all or part of the prostate in men with hyperplasia of the prostate without malignant neoplasm of the prostate.
Limitations of data / coding	The procedure and diagnostic codes have been identified, however due to emerging procedures and techniques it cannot be guaranteed all procedures were coded for.
Activity	<ul style="list-style-type: none"> • 14,562 episodes during 2018/19 • Age/sex std rate per 100,000 – 24.5 • Reduction opportunity: 4,096 [28%] based on 25th percentile of activity across CCGs. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 2.4 ○ 10th percentile – 15.0 ○ 25th percentile – 18.7 ○ 50th percentile – 24.4 ○ 90th percentile – 36.0

Coding Summary

Summary	Coding is available for the procedure, and partial coding is available for the indications.
Procedure	Surgical intervention to remove all or part of the prostate
Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	All procedures, including open and endoscopic surgery and other interventions such as Urolift should be included, however for new and emerging procedures coding may not be available.
Indication(s)/patient group(s)	Men with benign prostatic hyperplasia who have severe voiding symptoms, in whom conservative management and drug treatment have been unsuccessful, and who have been counselled about their treatment options may be offered surgical intervention if appropriate.
Can the indication be coded?	Coding is available for identifying a diagnosis of BPH.

	Diagnosis of malignant neoplasm of the prostate was excluded.
Were there any ambiguities/ queries relating to the indication coding?	Specific indications beyond BPH for surgical intervention could not be coded (e.g. drug therapy failed).
Coding identified	
Procedure codes	M61.1 Total excision of prostate and capsule of prostate M61.2 Retropubic prostatectomy M61.3 Transvesical prostatectomy M61.4 Perineal prostatectomy M61.8 Other specified M61.9 Unspecified M64.1 Open resection of outlet of male bladder M65.1 Endoscopic resection of prostate using electrotome M65.2 Endoscopic resection of prostate using punch M65.3 Endoscopic resection of prostate NEC M65.4 Endoscopic resection of prostate using laser M65.5 Endoscopic resection of prostate using vaprode M65.8 Other specified M65.9 Unspecified M66.1 Endoscopic sphincterotomy of external sphincter of male bladder M66.2 Endoscopic incision of outlet of male bladder NEC M68.1 Endoscopic insertion of prostatic stent M68.3 Endoscopic insertion of prosthesis to compress lobe of prostate
Diagnosis codes	N40 Hyperplasia of prostate <i>Exclude:</i> C61 Malignant neoplasm of prostate [Note – cancer diagnoses are a global exclusion]
Any other criteria (e.g. patient age)	Male
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Where the procedure code in dominant is: M61.1 OR M61.2 OR M61.3 OR M61.4 OR M61.8 OR M61.9 OR M64.1 OR

	<p>M65.1 OR M65.2 OR M65.3 OR M65.4 OR M65.5 OR M65.8 OR M65.9 OR M66.1 OR M66.2 OR M68.1 OR M68.3</p> <p>AND Primary diagnosis code is: N40 Hyperplasia of prostate</p> <p>AND of these Diagnosis code in any position is NOT: C61 Malignant neoplasm of prostate</p> <p>AND Patient gender is male</p>
SQL code	<pre>(left(der.Spell_Dominant_Procedure,4) like '%M61[123489]%' or left(der.Spell_Dominant_Procedure,4) like '%M641%' or left(der.Spell_Dominant_Procedure,4) like '%M65[1234589]%' or left(der.Spell_Dominant_Procedure,4) like '%M65[89]%' or left(der.Spell_Dominant_Procedure,4) like '%M66[12]%' or left(der.Spell_Dominant_Procedure,4) like '%M68[13]%') and der.Spell_Primary_Diagnosis like '%N40%' and apcs.sex=1</pre>

J – Discectomy

Analysis

What are we counting?	The number of first (i.e. not revisional) surgical interventions to remove intervertebral disc material in people aged >= 19 years with compressive nerve root symptoms.
Limitations of data / coding	The procedure and diagnostic codes have been identified, however it is not possible to code the specific indications

Activity	<ul style="list-style-type: none"> • 3,488 episodes during 2018/19 • Age/sex std rate per 100,000 – 5.9 • Reduction opportunity: 1,942 [56%] based on 25th percentile of activity across CCGs. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 6.7 ○ 10th percentile – 1.8 ○ 25th percentile – 2.9 ○ 50th percentile – 4.8 ○ 90th percentile – 12.1
Coding summary	
Summary	Coding is available for the procedure, and partial coding is available for the indications.
Procedure	Discectomy
Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	No
Indication(s)/patient group(s)	Discectomy may be offered to patients who: <ul style="list-style-type: none"> • Have compressive nerve root signs and symptoms • Have had the symptoms for > 6 weeks despite best efforts with non-operative management. • Who have had an MRI whose findings support the clinical diagnosis
Can the indication be coded?	Partial coding is available
Were there any ambiguities/queries relating to the indication coding?	Codes are available for compressive nerve root symptoms and for having had an MRI, but not for MRI findings or for duration of symptoms or conservative treatment.
Coding identified	
Procedure codes	V29.1 Primary laminectomy excision of cervical intervertebral disc V29.2 Primary hemilaminectomy excision of cervical intervertebral disc V29.3 Primary fenestration excision of cervical intervertebral disc V29.4 Primary anterior excision of cervical intervertebral disc and interbody fusion of joint of cervical spine V29.5 Primary anterior excision of cervical intervertebral disc NEC

	<p>V29.6 Primary microdiscectomy of cervical intervertebral disc V29.8 Other specified V29.9 Unspecified</p> <p>V33.1 Primary laminectomy excision of lumbar intervertebral disc V33.2 Primary fenestration excision of lumbar intervertebral disc V33.3 Primary anterior excision of lumbar intervertebral disc and interbody fusion of joint of lumbar spine V33.4 Primary anterior excision of lumbar intervertebral disc NEC V33.5 Primary anterior excision of lumbar intervertebral disc and posterior graft fusion of joint of lumbar spine V33.6 Primary anterior excision of lumbar intervertebral disc and posterior instrumentation of lumbar spine V33.7 Primary microdiscectomy of lumbar intervertebral disc V33.8 Other specified V33.9 Unspecified V35 Excision of unspecified intervertebral disc V35.1 Primary excision of intervertebral disc NEC V35.8 Other specified V35.9 Unspecified</p> <p>V51.1 Primary direct lateral excision of lumbar intervertebral disc and interbody fusion of joint of lumbar spine V51.8 Other specified V51.9 Unspecified V52.1 Enzyme destruction of intervertebral disc V52.2 Destruction of intervertebral disc NEC V52.5 Aspiration of intervertebral disc NEC V52.8 Other specified other operations on intervertebral disc V52.9 Unspecified other operations on intervertebral disc Note: Use an additional code to specify levels of spine [V55] V58.1 Primary automated percutaneous mechanical excision of cervical intervertebral disc V58.2 Primary automated percutaneous mechanical excision of thoracic intervertebral disc V58.3 Primary automated percutaneous mechanical excision of lumbar intervertebral disc</p>
--	--

	<p>V58.8 Other specified V58.9 Unspecified</p> <p>V60.1 Primary percutaneous decompression using coblation to cervical intervertebral disc V60.2 Primary percutaneous decompression using coblation to thoracic intervertebral disc V60.3 Primary percutaneous decompression using coblation to lumbar intervertebral disc V60.8 Other specified V60.9 Unspecified</p>
Diagnosis codes	<p>M50.0 Cervical disc disorder with myelopathy [G99.2*] M50.1 Cervical disc disorder with radiculopathy M51.0 Lumbar and other intervertebral disc disorders with myelopathy [G99.2*] M51.1 Lumbar and other intervertebral disc disorders with radiculopathy [G55.1*] M54.1 Radiculopathy M54.2 Cervicalgia M54.3 Sciatica M54.4 Lumbago with sciatica</p> <p>[Note – cancer diagnoses are a global exclusion]</p>
Any other criteria e.g. patient age]	Age >=19 years
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	<p>Where the procedure code in dominant position is:</p> <p>V29.1 OR V29.2 OR V29.3 OR V29.4 OR V29.5 OR V29.6 OR V29.8 OR V29.9 OR V33.1 OR V33.2 OR V33.3 OR V33.4 OR V33.5 OR V33.6 OR V33.7 OR V33.8 OR V33.9 OR V35.1 OR V35.8 OR V35.9 OR V51.1 OR</p>

	<p>V51.8 OR V51.9 OR V52.1 OR V52.2 OR V52.5 OR V52.8 OR V52.9 OR V58.1 OR V58.2 OR V58.3 OR V58.8 OR V58.9 OR V60.1 OR V60.2 OR V60.3 OR V60.8 OR V60.9 OR</p> <p>AND Primary diagnosis code is: M50.0 OR M50.1 OR M51.0 OR M51.1 OR M54.1 OR M54.2 OR M54.3 OR M54.4</p> <p>AND Patient age >=19 years</p>
SQL code	<pre>left(der.Spell_Dominant_Procedure,4) in ('V291','V292','V293','V294','V295','V 296','V298','V299','V331','V332','V333 ','V334','V335','V336','V337','V338',' V339','V351','V358','V359','V511','V51 8','V519','V521','V522','V525', 'V528','V529','V581','V582','V583','V5 88','V589','V601','V602','V603','V608' ,'V609') and (der.Spell_Primary_Diagnosis like '%M5[01][01]%' or der.Spell_Primary_Diagnosis like '%M54[1234]%') and isnull(APCS.Age_At_Start_of_Spell_SUS, APCS.Der_Age_at_CDS_Activity_Date) between 19 and 120</pre>

K – Radiofrequency facet joint denervation

Analysis	
What are we counting?	The number of patients who had radiofrequency facet joint denervation (RFD).
Limitations of data/ coding	The procedure and diagnostic codes have been identified, however it is not possible to code the specific indications.
Activity	<ul style="list-style-type: none"> • 1,618 episodes during 2018/19 • Age/sex std rate per 100,000 – 2.7 • Reduction opportunity: 1,247 (77%) based on 25th percentile of activity across CCGs. • Variation (age/sex std rates): <ul style="list-style-type: none"> ○ N-fold – 21.6³⁷ ○ 10th percentile – 0.4 ○ 25th percentile – 0.8 ○ 50th percentile – 1.9 ○ 90th percentile – 8.4
Coding summary	
Summary	Coding is available for the procedure and diagnosis, and partial coding is available for the indications
Procedure	Radiofrequency denervation of the facet joint
Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	No
Indication(s)/patient group(s)	Patients who have not improved with non-invasive therapy, but who have had a positive response to a Medial Branch Block (MBB) should be considered for RFD.
Can the indication be coded?	Partial coding is available
Were there any ambiguities/queries relating to the indication coding?	Codes for specific indications for the procedure were not available [e.g. response to non-invasive treatment].
Coding identified	
Procedure codes	V481: Radiofrequency controlled thermal denervation of spinal facet joint of cervical vertebra

³⁷ For two interventions (F – troponin testing and K – radiofrequency facet joint denervation), CCGs with zero activity were excluded in the n-fold (CCG variation calculation).

	<p>V483: Radiofrequency controlled thermal denervation of spinal facet joint of thoracic vertebra</p> <p>V485: Radiofrequency controlled thermal denervation of spinal facet joint of lumbar vertebra</p> <p>V487: Radiofrequency controlled thermal denervation of spinal facet joint of vertebra NEC</p> <p>Z674: Thoracic intervertebral joint</p> <p>Z675: Lumbar intervertebral joint</p> <p>Z676: Lumbosacral joint</p> <p>Z677: Sacrococcygeal joint</p> <p>Z993: Intervertebral disc of lumbar spine</p>
Diagnosis codes	<p>M518: Other specified intervertebral disc disorders</p> <p>M519: Intervertebral disc disorder, unspecified</p> <p>M545: Low back pain</p> <p>M459: Ankylosing spondylitis of unspecified sites in spine</p> <p>[Note – cancer diagnoses are a global exclusion]</p>
Any other criteria [e.g. patient age]	No
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	<p>Where procedure code in dominant position is:</p> <p>V48.1 OR</p> <p>V48.3 OR</p> <p>V48.5 OR</p> <p>V48.7</p> <p>AND</p> <p>Procedure code in any position is</p> <p>Z674 OR</p> <p>Z675 OR</p> <p>Z676 OR</p> <p>Z677 OR</p> <p>Z993</p> <p>AND</p> <p>Primary diagnosis code is:</p> <p>M518 OR</p> <p>M519 OR</p> <p>M545 OR</p> <p>M549</p>

SQL code	<pre> when der.Spell_Dominant_Procedure like '%V48[1357]%' and left(der.spell_primary_diagnosis,4) in ('M518', 'M519', 'M545', 'M549') and (apcs.der_procedure_all like '%Z67[4567]%' or apcs.der_procedure_all like '%Z993%') </pre>
----------	---

L – Exercise ECG for screening for coronary heart disease

Analysis

What are we counting?	The number of exercise ECG performed in outpatients for screening for coronary heart disease
Limitations of data / coding	<p>The indications of asymptomatic and low risk cannot be identified through coding at present, for example there is no definition for low risk.</p> <p>Exercise ECG for screening is 'do not do' intervention according to NICE guidelines and activity should be zero. However, outpatient data is not sufficiently robust to code diagnoses and therefore indications for this procedure. As such the activity reduction goal may be inappropriately high.</p>
Estimated annual volume and cost of activity, based on SPH coding	<ul style="list-style-type: none"> • 49,095 outpatient attendances during 2018/19 • Age/sex std rate per 100,000 – 82.6 • Reduction opportunity – 49,095 (100%) • Variation [age/sex std rates per 100,000]: <ul style="list-style-type: none"> ○ N-fold: 14.5 ○ 10th percentile – 12.4 ○ 25th percentile – 30.6 ○ 50th percentile – 57.6 ○ 90th percentile – 179.2

Coding summary

Summary	Coding is available for the procedure, but not for the indications
Procedure	Exercise ECG
Can the procedure be coded?	Yes
Were there any ambiguities/ queries relating to the procedure coding?	No
Indication(s)/patient group(s)	Asymptomatic and low risk patients should not receive exercise ECG testing for screening

Can the indication be coded?	No
Were there any ambiguities/ queries relating to the indication coding?	No coding is available to identify asymptomatic patients or low risk patients. There is no definition/threshold for low risk, and while scoring systems to identify levels of risk are noted, coding is not available for these.
Coding identified	
Procedure codes	U19.4 Exercise electrocardiography
Diagnosis codes	Not available [Note – cancer diagnoses are a global exclusion]
Any other criteria [e.g. patient age]	No
Will the procedure be carried out in OP or as APC?	Outpatient
Coding logic	Select records from outpatient data where: Procedure code is U19.4
SQL code	OPA.Der_Procedure_All LIKE '%U194%'

M – Upper GI endoscopy

Analysis

What are we counting?	The number of upper GI endoscopies performed for any indication.
Limitations for data / coding	The procedure and diagnostic codes have been identified, however it is not possible to code the specific indications and diagnostic codes are not always available in outpatient data.
Estimated annual volume and cost of activity, based on SPH coding	<ul style="list-style-type: none"> • 20,772 episodes during 2018/19 • Age/sex std rate per 100,000 – 35.0 • Reduction opportunity: 6,966 [34%] based on 25th percentile of activity across CCGs. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 2.7 ○ 10th percentile – 19.4 ○ 25th percentile – 24.7 ○ 50th percentile – 31.6 ○ 90th percentile – 52.3
Coding summary	
Summary	Coding is available for the procedure, but not for the indications

Procedure	Endoscopy of oesophagus, stomach, duodenum, jejunum and ileum
Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	All levels of the upper GI tract are included.
Indication(s)/patient group(s)	Varied, including investigation and assessment of a range of symptoms and conditions
Can the indication be coded?	No
Were there any ambiguities/ queries relating to the indication coding?	Various indications, most of which relate to particular clinical circumstances which are not codable
Coding identified	
Procedure codes	G16.1-9: Diagnostic fiberoptic endoscopic examination of oesophagus G19.1-9: Diagnostic endoscopic examination of oesophagus using rigid oesophagoscope G45.1-9: Fiberoptic endoscopic examination of upper gastrointestinal tract G65.1-9: Diagnostic endoscopic examination of jejunum G80.1-9: Diagnostic endoscopic examination of ileum
Diagnosis codes	Not available [Note – cancer diagnoses are a global exclusion]
Any other criteria [e.g. patient age]	No
Will the procedure be carried out in OP or as APC?	Outpatient and Admitted Patient Care
Coding logic	APC and OP Activity where the dominant procedure code is: G16.1-9 OR G19.1-9 OR G45.1-9 OR G65.1-9 OR G80.1-9

SQL code	<p>APC extract</p> <pre>left(der.Spell_Dominant_Procedure,3) in ('G16','G19','G46','G65','G80')</pre> <p>OP extract</p> <pre>OPA.Der_Procedure_All like '%G16%' or OPA.Der_Procedure_All like '%G19%' or OPA.Der_Procedure_All like '%G46%' or OPA.Der_Procedure_All like '%G65%' or OPA.Der_Procedure_All like '%G80%'</pre>
----------	---

Interventions including those in diagnostic and outpatient settings where data are available but further exploration of additional datasets is proposed to improvement robustness and establish national activity goals³⁸.

N – Unnecessary colonoscopy & O – Repeat colonoscopy	
Analysis	
What are we counting?	The number of colonoscopies for all indications, including those with risk factors and/or symptoms.
Limitations of data \ coding	The procedure codes have been identified, however it is not possible to code the diagnoses and therefore specific indications. Diagnostic coding in outpatients is poor, therefore the coding for the unnecessary colonoscopy (N) and repeat colonoscopy (O) is the same and includes patients at risk and/or with symptoms.
Estimated annual volume and cost of activity, based on SPH coding	<ul style="list-style-type: none"> • 445,981³⁹ episodes during 2018/19 • Age/sex std rate per 100,000 – 750.7 • Reduction opportunity based on 25th percentile of activity across CCGs: not calculated. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 1.5 ○ 10th percentile – 598.3 ○ 25th percentile – 657.5 ○ 50th percentile – 758.2 ○ 90th percentile – 927.1
Coding summary	
Summary	Coding is available for the procedure, and no coding is available for the indications
Procedure	Colonoscopy

³⁸ For these intervention data, procedure coding is available however diagnosis and indication coding is either partial or has limitations [see each intervention in these Appendix 5 tables] therefore it was inappropriate to calculate reduction goals for these interventions.

³⁹ This number represents colonoscopies for all indications, including those with symptoms and/or risk factors. This is an estimate of colonoscopies for at risk patients and an estimate of colonoscopies for surveillance, both of which this guidance relates to.

Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	No
Indication(s)/ patient group(s)	A range of indications, relating to surveillance of patients at increased risk due to family history of CRC, familial conditions which increase the risk of CRC, or a personal history of early onset CRC.
Can the indication be coded?	No
Were there any ambiguities/queries relating to the indication coding?	Specific indications cannot be coded. 445,981 represents all colonoscopies for patients at risk and/or with symptoms.
Coding identified	
Procedure codes	H22.1 Diagnostic fiberoptic endoscopic examination of colon and biopsy of lesion of colon H22.8 Other specified diagnostic endoscopic examination of colon H22.9 Unspecified diagnostic endoscopic examination of colon H68.1 Diagnostic endoscopic examination of colonic pouch and biopsy of colonic pouch using colonoscope H68.2 Diagnostic endoscopic examination of colonic pouch using colonoscope NEC H68.3 Diagnostic endoscopic examination of ileoanal pouch and biopsy of ileoanal pouch using colonoscope H68.4 Diagnostic endoscopic examination of ileoanal pouch using colonoscope NEC H68.8 Other specified diagnostic endoscopic examination of enteric pouch using colonoscope H68.9 Unspecified diagnostic endoscopic examination of enteric pouch using colonoscope
Diagnosis codes	Not available [Note – cancer diagnoses are a global exclusion]

Any other criteria [e.g. patient age]	Adult >= 19 years
Will the procedure be carried out in OP or as APC?	Outpatient or Admitted Patient Care
Coding logic	Where procedure code in any position is: H22.1 OR H22.8 OR H22.9 OR H68.1 OR H68.2 OR H68.3 OR H68.4 OR H68.8 OR H68.9 AND The patient age is >= 19 years
SQL code	<code>when (opa.Der_Procedure_All like '%H22[189]%' or opa.Der_Procedure_All like '%H68%') and isnull(opa.der_diagnosis_all, '') not like '%Z121%' and isnull(opa.Age_at_Start_of_Episode_SUS, opa.Der_Age_at_CDS_Activity_Date) between 19 and 120</code>

P – ERCP in acute gallstone pancreatitis without cholangitis

Analysis

What are we counting?	The number of patients admitted with a diagnosis of acute gallstone pancreatitis without cholangitis who had an ERCP within 72 hours of admission
Limitations of data / coding	The procedure and diagnostic codes have been identified, however it is not possible to code the specific indications
Activity and variation	<ul style="list-style-type: none"> • 310 episodes during 2018/19 • Age/sex std rate per 100,000 – 0.5 • Reduction opportunity based on 25th percentile of activity across CCGs: not calculated. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – not calculated⁴⁰ ○ 10th percentile – 0.0

⁴⁰ The n-fold variation calculation is the ratio between the 10th highest (90th percentile) and 10th lowest (10th percentile) age-sex standardised rate between CCGs. For interventions where the age-sex standardised rate in the 10th percentile is zero, the n-fold variation was not calculated. Refer to the activity variation histogram across CCGs to observe the variation visually in Appendix 7.

	<ul style="list-style-type: none"> ○ 25th percentile – 0.0 ○ 50th percentile – 0.4 ○ 90th percentile – 1.3
Coding summary	
Summary	Coding is available for the procedure, and partial coding is available for the indications.
Procedure	ERCP for acute gallstone pancreatitis without cholangitis within 72 hours of admission
Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	'Early' ERCP is defined as within 72 hours of admission.
Indication(s)/patient group(s)	Inpatients with acute gallstone pancreatitis without cholangitis should only have early ERCP if there is evidence of cholangitis or ongoing obstruction of the biliary tract.
Can the indication be coded?	Partial coding is available
Were there any ambiguities/queries relating to the indication coding?	Coding is available for biliary acute pancreatitis (i.e. pancreatitis with cholangitis). Additional analysis should be carried out to exclude those with cholangitis. This procedure includes emergency spells.
Coding identified	
Procedure codes	J43.1 Endoscopic retrograde cholangiopancreatography and biopsy of lesion of ampulla of Vater J43.2 Endoscopic retrograde cholangiopancreatography and biopsy of lesion of biliary or pancreatic system NEC J43.3 Endoscopic retrograde cholangiopancreatography and collection of bile J43.8 Other specified J43.9 Unspecified
Diagnosis codes	K85.1 Biliary acute pancreatitis
Any other criteria (e.g. patient age)	The procedure occurs within the first 3 days of admission

Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	<p>Where the procedure code in any position is: J43.1 OR J43.2 OR J43.3 OR J43.8 OR J43.9</p> <p>AND Diagnosis code in any position is: K85.1</p> <p>AND</p> <p>The procedure date is 3 days or fewer after the admission date.</p>
SQL code	<pre> apcs.[Der_Procedure_All] LIKE '%J43[12389]%' AND (APCs.[Der_Diagnosis_All] LIKE '%K851%') and (case when apcep.[Primary_Procedure_Code] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Primary_Procedure_Date])<=3 then 1 else 0 end+ case when apcep.[Procedure_Code_2] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Procedure_Date_2])<=3 then 1 else 0 end + case when apcep.[Procedure_Code_3] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Procedure_Date_3])<=3 then 1 else 0 end + case when apcep.[Procedure_Code_4] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Procedure_Date_4])<=3 then 1 else 0 end + case when apcep.[Procedure_Code_5] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Procedure_Date_5])<=3 then 1 else 0 end + case when apcep.[Procedure_Code_6] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Procedure_Date_6])<=3 then 1 else 0 end + case when apcep.[Procedure_Code_7] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Procedure_Date_7])<=3 then 1 else 0 end + case when apcep.[Procedure_Code_8] LIKE '%J43[12389]%' and </pre>


```

datediff(dd,apcs.Admission_Date,[Procedure_Date
_8])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_9] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_9])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_10] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_10])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_11] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_11])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_12] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_12])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_13] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_13])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_14] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_14])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_15] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_15])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_16] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_16])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_17] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_17])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_18] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_18])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_19] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_19])<=3 then 1 else 0 end +
case when apcep.[Procedure_Code_20] LIKE
'%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date
_20])<=3 then 1 else 0 end +

```

	<pre> case when apcep.[Procedure_Code_21] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Procedure_Date _21])<=3 then 1 else 0 end + case when apcep.[Procedure_Code_22] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Procedure_Date _22])<=3 then 1 else 0 end + case when apcep.[Procedure_Code_23] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Procedure_Date _23])<=3 then 1 else 0 end + case when apcep.[Procedure_Code_24] LIKE '%J43[12389]%' and datediff(dd,apcs.Admission_Date,[Procedure_Date _24])<=3 then 1 else 0 end)>0 </pre>
--	--

Q – Interval cholecystectomy	
Analysis	
What are we counting?	The number of patients with a diagnosis of gallstone pancreatitis undergoing cholecystectomy as an elective admission.
Limitations of data / coding	The procedures and diagnostic codes have been identified. These have been identified for elective cholecystectomy with a diagnosis of acute gallstone pancreatitis or cholecystitis. This may not represent all cases of elective cholecystectomy following acute admission with these diagnoses.
Activity	<ul style="list-style-type: none"> • 2,085 episodes during 2018/19 • Age/sex std rate per 100,000 – 3.5 • Reduction opportunity based on 25th percentile of activity across CCGs: not calculated. • CCG Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 6.4 ○ 10th percentile – 1.0 ○ 25th percentile – 1.8 ○ 50th percentile – 3.2 ○ 90th percentile – 6.2
Coding summary	
Summary	Coding is available for the procedure and for the indication.
Procedure	Cholecystectomy for acute gallstone pancreatitis
Can the procedure be coded?	Yes
Were there any ambiguities/queries	This coding includes laparoscopic and open cholecystectomy

relating to the procedure coding?	
Indication(s)/patient group(s)	Acute gallstone pancreatitis. For patients admitted with mild pancreatitis, index laparoscopic cholecystectomy should be performed within that admission.
Can the indication be coded?	Yes
Were there any ambiguities/queries relating to the indication coding?	No, although this may not represent all cases of elective cholecystectomy following acute admission with the diagnoses of acute gallstone pancreatitis or cholecystitis.
Coding identified	
Procedure codes	J18.1 Total cholecystectomy and excision of surrounding tissue J18.2 Total cholecystectomy and exploration of common bile duct J18.3 Total cholecystectomy NEC J18.4 Partial cholecystectomy and exploration of common bile duct J18.5 Partial cholecystectomy NEC J18.8 Other specified excision of gall bladder J18.9 Unspecified excision of gall bladder
Diagnosis codes	K85.1 Biliary acute pancreatitis [Note – cancer diagnoses are a global exclusion]
Any other criteria (e.g. patient age)	No
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Where procedure code is J18.1 OR J18.2 OR J18.3 OR J18.4 OR J18.5 OR J18.8 OR J18.9 AND Diagnosis code is K85.1
SQL code	(APCEM.[Der_Procedure_All] LIKE '%J181%' OR APCEM.[Der_Procedure_All] LIKE '%J182%' OR

	<pre> APCEM.[Der_Procedure_All] LIKE '%J183%' OR APCEM.[Der_Procedure_All] LIKE '%J184%' OR APCEM.[Der_Procedure_All] LIKE '%J185%' OR APCEM.[Der_Procedure_All] LIKE '%J188%' OR APCEM.[Der_Procedure_All] LIKE '%J189%') AND APCEM.[Der_Diagnosis_All] LIKE '%K851%' </pre>
--	--

R – Appendicectomy without confirmation of appendicitis

Analysis

What are we counting?	The number of appendicectomies performed.
Limitations of coding / data	These figures are for all appendicectomies and not restricted to those without confirmed diagnosis.
Activity	<ul style="list-style-type: none"> • 47,605 episodes during 2018/19 • Age/sex std rate per 100,000 – 80.1 • Reduction opportunity based on 25th percentile of activity across CCGs: not calculated • CCG Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 1.6 ○ 10th percentile – 63.7 ○ 25th percentile – 71.7 ○ 50th percentile – 80.4 ○ 90th percentile – 100.7
Coding summary	
Summary	Coding is available for the procedure; however, diagnosis codes are not available
Procedure	Appendicectomy
Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	No
Indication(s)/patient group(s)	Appendicitis should be confirmed either by clinical examination, history and blood tests, and if not possible, through imaging before surgery.
Can the indication be coded?	No

Were there any ambiguities/ queries relating to the indication coding?	No
Coding identified	
Procedure codes	H01 Emergency excision of appendix OR H02 Other excision of appendix
Diagnosis codes	Not available [Note – cancer diagnoses are a global exclusion]
Any other criteria [e.g. patient age]	
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	H01 OR H02
SQL code	<code>Der.spell_dominant_procedure like '%H0 [12] %'</code>

S – Low back pain imaging

Analysis

What are we counting?	The number of scans performed for low back pain.
Limitations of data / coding	The procedure codes have been identified, however there is currently no diagnostic data in outpatients so indication for low back pain imaging not clear.
Activity	<ul style="list-style-type: none"> • 253,957 episodes during 2018/19 • Age/sex std rate per 100,000 – 427.5 • Reduction opportunity based on 25th percentile of activity across CCGs: not calculated • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 59.8 ○ 10th percentile – 21.8 ○ 25th percentile – 62.3 ○ 50th percentile – 215.3 ○ 90th percentile – 1,302.8
Initial findings	
Summary	Coding is available for the procedure; however, diagnosis codes are not available.
Procedure	Imaging in patients with low back pain
Can the procedure be coded?	Yes

Were there any ambiguities/queries relating to the procedure coding?	No
Indication(s)/ patient group(s)	Patients with low back pain who do not have any signs or symptoms suggesting serious underlying pathology should not be referred for imaging. For patients in whom more serious pathology is suspected imaging should be requested.
Can the indication be coded?	No
Were there any ambiguities/queries relating to the indication coding?	Coding is available for low back pain, but when imaging is carried out as an outpatient attendance the diagnosis is unlikely to be coded. The presence of signs or symptoms suggesting more serious pathology, or the likelihood of imaging changing management, cannot be coded.
Coding identified	
Procedure codes	U05.4 Computed tomography of spine U05.5 Magnetic resonance imaging of spine U13.2 Ultrasound of bone U13.3 Magnetic resonance imaging of bone U13.5 Plain x-ray of bone U13.6 Computed tomography of bone U21.1 Magnetic resonance imaging NEC U21.2 Computed tomography NEC U21.6 Ultrasound scan NEC U21.7 Plain x-ray NEC With: Z66.5 Lumbar vertebra O16.2 Spine NEC
Diagnosis codes	No [Note – cancer diagnoses are a global exclusion]
Any other criteria (e.g. patient age)	Age >=19
Will the procedure be carried out in OP or as APC?	Outpatient

Coding logic	<p>Where any procedure is:</p> <p>U05.4 OR U05.5 OR</p> <p>U13.2 OR U13.3 OR U13.5 OR U13.6 OR U21.1 OR U21.2 OR U21.6 OR U21.7</p> <p>WITH: Z66.5 (in any position) OR O16.2 (in any position)</p> <p>AND Patient age >=19 years</p>
SQL code	<pre>(opa.Der_Procedure_All like '%U05[45]%' or ((opa.Der_Procedure_All like '%U13[2356]%' or opa.Der_Procedure_All like '%U21[1267]%') and (opa.Der_Procedure_All like '%Z665%' or opa.Der_Procedure_All like '%O162%'))) and isnull(opa.Age_at_Start_of_Episode_SUS, opa.Der_Age_at_CDS_Activity_Date) between 19 and 120</pre>

T – Knee MRI when symptoms are suggestive of osteoarthritis & U – Suspected degenerative meniscal tears

Analysis

What are we counting?	The number knee MRIs performed for suspected osteoarthritis and/or meniscal tear.
Limitations of data / coding	The procedure codes have been identified, however it is not possible to identify diagnostic codes for specific indications.
Activity	<ul style="list-style-type: none"> • 80,808 episodes during 2018/19 • Age/sex std rate per 100,000 – 136.0 • Reduction opportunity based on 25th percentile of activity across CCGs: not calculated • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 105.9 ○ 10th percentile – 4.3 ○ 25th percentile – 15.3 ○ 50th percentile – 50.3

	○ 90 th percentile – 451.0
Coding summary	
Summary	Coding is available for the procedure; however, it is not possible to code the diagnoses or indications.
Procedure	MRI scan of the knee for suspected osteoarthritis and/or meniscal tear.
Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	No
Indication(s)/patient group(s)	Patients with suspected osteoarthritis or meniscal tear of the knee may require MRI.
Can the indication be coded?	No.
Were there any ambiguities/queries relating to the indication coding?	Knee osteoarthritis can be coded and some conditions in which MRI might be appropriate (to be excluded) can be coded. However very little diagnosis coding is available in the data extracts and as such these are not included in the analysis.
Coding identified	
Procedure codes	U133: MRI bone/joint: With site codes – Z84.6 Knee joint O13.2 Knee NEC
Diagnosis codes	Note – these diagnosis codes have been provided, but not reflected in the coding logic and example SQL code below, as the sparseness of OP diagnosis data means that this is less helpful in an OP setting. It is included here for information. <i>M170: Primary gonarthrosis, bilateral</i> <i>M171 Other primary gonarthrosis, incl:</i> <i>Primary gonarthrosis:</i>

	<ul style="list-style-type: none"> • <i>NOS</i> • <i>Unilateral</i> <p><i>M179: Gonarthrosis, unspecified</i></p> <p><i>Exclusions</i></p> <p><i>M000, 1,2, 8 &9 infection</i></p> <p><i>M050-9 rheumatoid</i></p> <p><i>M060-9 inflammatory</i></p> <p><i>M070-9 reactive</i></p> <p><i>M020-9 arthropathies</i></p> <p><i>M030-9 post infection</i></p> <p><i>M100-9 gout</i></p> <p><i>M120-9 other arthropathies</i></p> <p><i>M130-9 other arthritis</i></p> <p><i>M140-9 diabetic/ neuropathic</i></p> <p><i>M150-9 polyarthrosis</i></p> <p><i>M172, 3, 4 & 5: gonarthrosis resulting from trauma or other secondary</i></p> <p><i>C402, 408, 409 neoplasm</i></p> <p><i>D162 neoplasm</i></p> <p><i>C765 neoplasm</i></p> <p>[Note - cancer diagnoses are a global exclusion]</p>
Any other criteria [e.g. patient age]	>= 19 years
Will the procedure be carried out in OP or as APC?	Outpatient
Coding logic	<p>Primary procedure code is: U133</p> <p>With procedure in any position: Z84.6 OR O13.2</p>
SQL code	<pre>opa.Der_Procedure_All like '%U133%' and (opa.Der_Procedure_All like '%Z846%' or opa.Der_Procedure_All like '%O132%') and isnull(opa.Age_at_Start_of_Episode_SUS,opa.Der_Age_at_CDS_Activity_Date) between 19 and 120</pre>

V – Vertebroplasty for painful osteoporotic vertebral fractures

Analysis

What are we counting?	The number of vertebroplasty procedures for patients with osteoporotic fractures
-----------------------	--

Limitations of data / coding	The procedure and diagnostic codes have been identified, however it is not possible to code the specific indications (e.g. pain).
Activity	<ul style="list-style-type: none"> • 304 episodes during 2018/19 • Age/sex std rate per 100,000 – 0.5 • Reduction opportunity based on 25th percentile of activity across CCGs: not calculated. • Variation [age/sex std rates]: not calculated⁴¹.
Coding summary	
Summary	Coding is available for the procedure, and partial coding is available for the indication
Procedure	Vertebroplasty
Can the procedure be coded?	Yes
Were there any ambiguities/queries relating to the procedure coding?	No
Indication(s)/ patient group(s)	Patients with painful osteoporotic fractures which have been proven on imaging and who have severe ongoing pain despite optimal pain management.
Can the indication be coded?	Partial coding is available
Were there any ambiguities/queries relating to the indication coding?	Coding is available for pathological fracture due to osteoporosis of various causes. Coding is not available for severe pain, or for other treatment.
Coding identified	

⁴¹ The n-fold variation calculation is the ratio between the 10th highest (90th percentile) and 10th lowest (10th percentile) age-sex standardised rate between CCGs. For interventions where the age-sex standardised rate in the 10th percentile is zero, the n-fold variation was not calculated. Refer to the activity variation histogram across CCGs to observe the variation visually in Appendix 7.

Procedure codes	V44.4 Vertebroplasty of fracture of spine
Diagnosis codes	M80.0 Postmenopausal osteoporosis with pathological fracture M80.1 Postmenopausal osteoporosis with pathological fracture M80.2 Osteoporosis of disuse with pathological fracture M80.3 Postsurgical malabsorption osteoporosis with pathological fracture M80.4 Drug-induced osteoporosis with pathological fracture M80.5 Idiopathic osteoporosis with pathological fracture M80.8 Other osteoporosis with pathological fracture M80.9 Unspecified osteoporosis with pathological fracture [Note – cancer diagnoses are a global exclusion]
Any other criteria [e.g. patient age]	>= 19 years
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Procedure code in dominant position is: V444 AND Primary diagnosis code is: M80.0 OR M80.1 OR M80.2 OR M80.3 OR M80.4 OR M80.5 OR M80.8 OR M80.9 AND Patient age >= 19 years
SQL code	<code>left(der.Spell_Dominant_Procedure,4)='V444' and der.Spell_Primary_Diagnosis like '%M80%' and isnull(APCS.Age_At_Start_of_Spell_SUS,APCS.Der_Age_at_CDS_Activity_Date) between 19 and 120</code>

W – Imaging for shoulder pain

What are we counting?	The number of scans for imaging shoulder pain.
Limitations of data / coding	The procedure codes have been identified, however it is not possible to code the diagnostic codes or specific indications
Activity	<ul style="list-style-type: none"> • 75,388 attendances during 2018/19 • Age/sex std rate per 100,000 – 126.9 • Reduction opportunity based on 25th percentile of activity across CCGs: not calculated. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 84.2 ○ 10th percentile – 4.8 ○ 25th percentile – 16.5 ○ 50th percentile – 52.6 ○ 90th percentile – 405.3
Coding summary	
Summary	Coding is available for the procedure, and is not available for the diagnosis or indication
Procedure	Imaging of the shoulder – ultrasound, MRI or CT scan
Can the procedure be coded?	Yes
Were there any ambiguities/ queries relating to the procedure coding?	No
Indication(s)/ patient group(s)	Imaging may be requested for patients with shoulder pain which has persisted for 3 or 4 months despite initial treatment and for whom referral for surgical repair is being considered.
Can the indication be coded?	No
Were there any ambiguities/ queries relating to the indication coding?	Coding may be available for shoulder diagnoses, but when imaging is carried out for primary care as an outpatient attendance the diagnosis is unlikely to be coded. The presence of signs or symptoms suggesting more serious pathology, or the likelihood of imaging changing management, cannot be coded.
Coding identified	

Procedure codes	<p>U13.2 Ultrasound of bone U13.3 Magnetic resonance imaging of bone U13.6 Computed tomography of bone U21.1 Magnetic resonance imaging NEC U21.2 Computed tomography NEC U21.6 Ultrasound scan NEC</p> <p>With site code: Z81.4 Shoulder joint Z81.8 Specified joint of shoulder girdle or arm NEC Z81.9 Joint of shoulder girdle or arm NEC Z89.1 Shoulder NEC</p>
Diagnosis codes	<p>Not available</p> <p>[Note – cancer diagnoses are a global exclusion]</p>
Any other criteria [e.g. patient age]	Adult >= 19 years
Will the procedure be carried out in OP or as APC?0	Outpatient
Coding logic	<p>Where the procedure code in any position is:</p> <p>U13.2 OR U13.3 OR U13.6 OR U21.1 OR U21.2 OR U21.6</p> <p>AND</p> <p>The procedure code in any position is:</p> <p>Z81.4 OR Z81.8 OR Z81.9 OR Z89.1</p> <p>And the patient age was >= 19 years</p>
SQL code	<pre>(opa.Der_Procedure_All like '%U13[236]%' or opa.Der_Procedure_All like '%U21[126]%') and (opa.Der_Procedure_All like '%Z81[489]%' or opa.Der_Procedure_All like '%Z891%') and</pre>

	<code>isnull(opa.Age_at_Start_of_Episode_SUS, opa.Der_Age_at_CDS_Activity_Date) between 19 and 120</code>
--	---

X – MRI scan of the hip for arthritis

Analysis

What are we counting?	The number of hip MRI scans which are carried out in outpatients.
Limitations of data / coding	The procedure codes have been identified, however it is not possible to code the diagnoses or specific indications
Activity	<ul style="list-style-type: none"> • 15,286 attendances during 2018/19 • Age/sex std rate per 100,000 – 25.7 • Reduction opportunity based on 25th percentile of activity across CCGs: not calculated. • Variation [age/sex std rates]: <ul style="list-style-type: none"> ○ N-fold – 46.1 ○ 10th percentile – 1.6 ○ 25th percentile – 5.6 ○ 50th percentile – 13.7 ○ 90th percentile – 71.6

Coding summary

Rationale for category	Coding is available for the procedure; however, it is not available for the diagnoses or indication.
Procedure	MRI scan of the hip
Can the procedure be coded?	Yes
Were there any ambiguities/ queries relating to the procedure coding?	The use of MRI as described in the guidance would primarily be in an outpatient setting and there may be limited coding of diagnosis and/or on site.
Indication(s)/ patient group(s)	<p>Patients in whom the clinical presentation and X-rays demonstrate typical features of osteoarthritis of the hip do not require an MRI scan.</p> <p>An MRI scan or urgent onward referral may be warranted if there is indication of infection, trauma, history or family history of inflammatory arthropathy, mechanical impingement type symptoms, prolonged and morning stiffness, or history or risk factors for neoplasm.</p>

Can the indication be coded?	Partial coding is available.
Were there any ambiguities/queries relating to the indication coding?	Coding is available for hip osteoarthritis, but when imaging is carried out in an outpatient setting the diagnosis is unlikely to be coded. Coding is available for some conditions in which MRI might be appropriate [to be excluded].
Coding identified	
Procedure codes	U13.3 Magnetic resonance imaging of bone U21.1 Magnetic resonance imaging NEC With site codes: Z84.3 Hip joint or Z84.8 Specified joint of pelvis or upper leg NEC or Z84.9 Joint of pelvis or upper leg NEC or Z90.2 Hip NEC
Diagnosis codes	<i>Note – these diagnosis codes have been provided, but not reflected in the coding logic and example SQL code below, as the sparseness of OP diagnosis data means that this is less helpful in an OP setting. It is included here for information.</i> <i>M160: primary coxarthrosis</i> <i>M161: other primary coxarthrosis, incl:</i> <i>Primary coxarthrosis:</i> <ul style="list-style-type: none"> • NOS • Unilateral <i>M169: Coxarthrosis, unspecified</i> <i>Exclusions</i> <i>M00 Pyogenic arthritis</i> <i>M02 Reactive arthropathies</i> <i>M03* Postinfective and reactive arthropathies in diseases classified elsewhere</i> <i>M05 Seropositive rheumatoid arthritis</i> <i>M06 Other rheumatoid arthritis</i> <i>M07* Psoriatic and enteropathic arthropathies</i> <i>M10 Gout</i> <i>M11 Other crystal arthropathies</i> <i>M12 Other specific arthropathies</i> <i>M13 Other arthritis</i> <i>M14* Arthropathies in other diseases classified elsewhere</i> <i>M15 Polyarthrosis</i> <i>Incl.:</i>

	<p><i>arthrosis with mention of more than one site</i></p> <p><i>Excl.:</i></p> <p><i>bilateral involvement of single joint (M16-M19)</i></p> <p><i>M16.2 Coxarthrosis resulting from dysplasia, bilateral</i></p> <p><i>M16.3 Other dysplastic coxarthrosis</i></p> <p><i>Incl.:</i></p> <p><i>Dysplastic coxarthrosis:</i></p> <p><i>* NOS</i></p> <p><i>* unilateral</i></p> <p><i>M16.4 Post-traumatic coxarthrosis, bilateral</i></p> <p><i>M16.5 Other post-traumatic coxarthrosis</i></p> <p><i>Incl.:</i></p> <p><i>Post-traumatic coxarthrosis:</i></p> <p><i>* NOS</i></p> <p><i>* unilateral</i></p> <p><i>C40.2 Long bones of lower limb</i></p> <p><i>C40.8 Overlapping lesion of bone and articular cartilage of limbs</i></p> <p><i>C40.9 Bone and articular cartilage of limb, unspecified</i></p> <p><i>D16.2 Long bones of lower limb – benign neoplasm</i></p> <p><i>C76.5 Lower limb – malignant neoplasm</i></p> <p>[Note – cancer diagnoses are a global exclusion]</p>
Any other criteria [e.g. patient age]	Adult >= 19 years
Will the procedure be carried out in OP or as APC?	Outpatients
Coding logic	<p>Where the primary procedure is:</p> <p>U13.3</p> <p>U21.1</p> <p>With procedure in any position:</p> <p>Z84.3 OR</p> <p>Z84.8 OR</p> <p>Z84.9 OR</p> <p>Z90.2</p>
SQL code	<pre>(opa.Der_Procedure_All like '%U133%' or opa.Der_Procedure_All like '%U211%') and (opa.Der_Procedure_All like '%Z84[389]%' or opa.Der_Procedure_All like '%Z902%') and isnull(opa.Age_at_Start_of_Episode_SUS,opa.Der_Age_at_CDS_Activity_Date) between 19 and 120</pre>

Y – Fusion surgery for mechanical axial low back pain

Analysis	
What are we counting?	The number first lumbar spine fusion surgery (without spinal decompression), in people aged ≥ 19 years with low back pain who did not have other conditions such as spinal deformity or spinal instability.
Limitations of data / coding	The procedure and diagnosis codes have been identified, however coding of the indication relies on excluding indications for which spinal fusion could be appropriate and there may be some which have not been explicitly noted.
Activity	<ul style="list-style-type: none"> • 41 episodes during 2018/19 • Age/sex std rate per 100,000 – 0.1 • Reduction opportunity based on 25th percentile of activity across CCGs: not calculated. • Variation [age/sex std rates]: not calculated⁴².
Coding summary	
Summary	Coding is available for the procedure, and partial coding is available for the diagnoses and indications.
Procedure	Spinal fusion surgery
Can the procedure be coded?	Yes
Were there any ambiguities/ queries relating to the procedure coding?	Revision surgery is excluded
Indication(s)/ patient group(s)	Spinal fusion surgery should not be used for people with non-specific mechanical low back pain. It may be used for patients with a symptomatic spinal deformity or instability, or as an adjunct during spinal decompression surgery.
Can the indication be coded?	Yes

⁴² The n-fold variation calculation is the ratio between the 10th highest (90th percentile) and 10th lowest (10th percentile) age-sex standardised rate between CCGs. For interventions where the age-sex standardised rate in the 10th percentile is zero, the n-fold variation was not calculated. Refer to the activity variation histogram across CCGs to observe the variation visually in Appendix 7.

Were there any ambiguities/queries relating to the indication coding?	Coding of the indication relies on excluding indications for which spinal fusion could be appropriate. There may be some which have not been explicitly noted.
Coding identified	
Procedure codes	V38.2 Primary posterior interlaminar fusion of joint of lumbar spine V38.3 Primary posterior fusion of joint of lumbar spine NEC Includes: Primary posterior interspinous fusion of lumbar spine V38.4 Primary intertransverse fusion of joint of lumbar spine NEC V38.5 Primary posterior interbody fusion of joint of lumbar spine V38.6 Primary transforaminal interbody fusion of joint of lumbar spine V40.4 Posterior instrumented fusion of lumbar spine NEC
Diagnosis codes	Back pain M54.5 Low back pain M54.9 Dorsalgia, unspecified Exclusion codes: M87.2 Osteonecrosis due to previous trauma M40.0 Postural kyphosis M40.1 Other secondary kyphosis M40.2 Other and unspecified kyphosis M41.0 Infantile idiopathic scoliosis M41.1 Juvenile idiopathic scoliosis M41.2 Other idiopathic scoliosis M41.3 Thoracogenic scoliosis M41.4 Neuromuscular scoliosis M41.5 Other secondary scoliosis M41.8 Other forms of scoliosis M41.9 Scoliosis, unspecified M42.0 Juvenile osteochondrosis of spine M42.1 Adult osteochondrosis of spine M42.9 Spinal osteochondrosis, unspecified M43.0 Spondylolysis M43.1 Spondylolisthesis M43.5 Other recurrent vertebral subluxation M43.8 Other specified deforming dorsopathies M43.9 Deforming dorsopathy, unspecified [Note – cancer diagnoses are a global exclusion]
Any other criteria [e.g. patient age]	Age >= 19 years
Will the procedure be	Admitted Patient Care

carried out in OP or as APC?	
Coding logic	<p>Where the procedure code in dominant position is: V38.2 OR V38.3 OR V38.4 OR V38.5 OR V38.6 OR V40.4</p> <p>AND The diagnosis code in primary position is: M54.5 OR M54.9</p> <p>EXCEPT WHERE Any diagnosis code is: M40.0 M40.1 M40.2 OR M41.0 OR M41.1 OR M41.2 OR M41.3 OR M41.4 OR M41.5 OR M41.8 OR M41.9 OR M42.0 OR M42.1 OR M42.9 OR M43.0 OR M43.1 OR M43.5 OR M43.8 OR M43.9 OR M87.2</p> <p>AND Patient age >= 19 years</p>
SQL code	<pre>left(der.Spell_Dominant_Procedure,4) like '%V38[23456]%' or left(der.Spell_Dominant_Procedure,4) like '%V404%') and der.Spell_Primary_Diagnosis like '%M54[59]%' and apcs.der_diagnosis_all not like '%M40[012]%' and apcs.der_diagnosis_all not like '%M41[01234589]%' and apcs.der_diagnosis_all not like '%M42[019]%' and apcs.der_diagnosis_all not like '%M43[01589]%' and</pre>

	<code>isnull(APCS.Age_At_Start_of_Spell_SUS,APCS.Der_Age_at_CDS_Activity_Date) between 19 and 120</code>
--	--

Interventions where data are not currently available but propose including because best available evidence suggests interventions are clinically ineffective unless performed in certain circumstances. We will continue to explore additional datasets and collaborate with the wider system to identify opportunities to measure activity.

Z – Helmet therapy for treatment of non-synostotic/positional plagiocephaly and/or brachycephaly in children	
Analysis	
What analysis shows	The number of children aged under 2 with non-synostotic /positional plagiocephaly and/or brachycephaly who received helmet therapy for reshaping of the cranium.
Limitations of data / coding	The procedure and diagnostic codes have been identified, however it is not possible to code the specific indications
Activity	<ul style="list-style-type: none"> • For interventions with fewer than 10 episodes during 2018/19, the number has not been included. • Age/sex std rate per 100,000 – NA [due to low numbers] • Reduction opportunity based on 25th percentile of activity across CCGs– NA [due to low numbers] • Variation [age/sex std rates]: NA [due to low numbers]
Coding summary	
Summary	Coding is available for the procedure, and diagnoses, however codes are not available for the indications.
Procedure	Helmet therapy for treatment of non-synostotic/positional plagiocephaly and/or brachycephaly in children
Can the procedure be coded?	Yes
Were there any ambiguities/ queries relating to the procedure coding?	Codes available relate to shaping of the cranium, and not specifically to helmet therapy
Indication(s)/patient group(s)	Non-synostotic /positional plagiocephaly and/or brachycephaly in children aged <2 year.

Can the indication be coded?	Partial coding is available.
Were there any ambiguities/ queries relating to the procedure coding?	The codes available relate to plagiocephaly, not specifically positional plagiocephaly.
Coding identified	
Procedure codes	V04.8 Other specified reshaping of cranium V04.9 Unspecified reshaping of cranium
Diagnosis codes	Q67.3 Plagiocephaly [Note – cancer diagnoses are a global exclusion]
Any other criteria [e.g. patient age]	Children <2 years
Will the procedure be carried out in OP or as APC?	Outpatient
Coding logic	Select records from APC data where: Procedure code is: V04.8 OR V049 AND Diagnosis code is: Q67.3 AND Patient age is: Aged 2 year or under
SQL code	APCEM.[Der_Procedure_All] LIKE '%V049%' OR APCEM.[Der_Procedure_All] LIKE '%V048%') AND (APCEM.[Der_Diagnosis_All] LIKE '%Q673%') AND APCEM.Age_at_CDS_Activity_Date)<=2

AA – Pre-operative chest X-ray

Analysis

What are we counting?

We have been unable to accurately identify diagnostic and procedure codes and produce activity figures. Exploring the option of using linked Diagnostic Imaging Dataset (DIDs) data, available later this year.

Coding summary

Summary	No coding is available for the procedure.
Procedure	Routine chest X-ray before elective surgery
Can the procedure be coded?	No
Indication(s)/patient group(s)	Adult patients undergoing pre-operative assessment before elective surgery. Routine pre-operative chest X-rays should not be carried out except for: <ul style="list-style-type: none"> • Patients undergoing cardiac or thoracic surgery • Patients undergoing organ transplantation or live organ donation • In some other conditions at the request of the anaesthetist
Can the indication be coded?	No

BB – Pre-operative ECG

Analysis

What are we counting?	We have been unable to accurately identify diagnostic and procedure codes and produce activity figures. Exploring the option of using linked Diagnostic Imaging Dataset (DIDs) data, available later this year.
-----------------------	---

Coding summary

Summary	No coding is available for the procedure.
Procedure	Routine ECG before elective surgery
Can the procedure be coded?	No
Indication(s)/patient group(s)	Adult patients undergoing pre-operative assessment before elective surgery. Routine pre-operative ECGs should not be carried out except for: Patients undergoing cardiac surgery Patients with an ASA physical classification status of 3 or greater and no ECG in the last 12 months Patients with a history of cardiovascular or renal disease, or diabetes Patients with any history of potential cardiac symptoms Patients aged over 65 attending for major surgery
Can the indication be coded?	No

CC – Prostate specific antigen (PSA) test

Analysis

What are we counting?	The number of PSA blood tests carried out.
-----------------------	--

Coding summary

Summary	No coding is available for the procedure, diagnoses or indications.
Procedure	Prostate-specific antigen blood test
Can the procedure be coded?	No
Indication(s)/patient group(s)	PSA testing may be carried out if clinically indicated in specified circumstances, or if requested by the man after discussion of risks and benefits.
Can the indication be coded?	No

DD – Liver function, creatinine kinase and lipid level tests for monitoring lipid lowering therapy

Analysis

What are we counting?	The number of blood tests for monitoring lipid lowering therapy.
-----------------------	--

Coding summary

Category	No coding is available for the procedure or indications
Procedure	Liver function testing (LFT), creatinine kinase (CK) and lipid level tests
Can the procedure be coded?	No
Indication(s)/patient group(s)	In people taking lipid lowering therapy: CK measurement should be carried out for specified clinical indications LFTs should be carried out at baseline and at 3 months and 12 months after starting treatment, but not again unless clinically indicated HDL should be considered to be discussed at annual review
Can the indication be coded?	No

EE – Unnecessary blood transfusion

Analysis

What are we counting?	The number of blood transfusions.
Coding summary	
Summary	No coding is available for the procedure or indications
Procedure	Red blood cell (RBC) transfusion
Can the procedure be coded?	No
Indication(s)/patient group(s)	People should be considered for restrictive thresholds for blood transfusion in specified clinical circumstances
Can the indication be coded?	No

Appendix 6

Technical appendix

1. For each of the 31 interventions the clinical definitions have been converted into draft combinations of one or more OPCS procedure codes and ICD-10 diagnosis codes. This process was informed by the Data, Analysis and Intelligence Service at NHS England and NHS Improvement, GIRFT, Expert Working Group (EWG)/ NHS Digital, Royal Colleges and Specialist Societies and CCGs/ Trusts. Data was examined to establish the codes used in practice across the NHS in England for diagnoses and associated procedures. Best practice clinical coding methods were applied to review the proposed codes to ensure clinical and data accuracy. The proposed codes are subject to further changes.
2. Our analysis is based on SUS+ data of spells completing in 2018/19. The following descriptors use Microsoft SQL Server structure but are easily adaptable to other systems. For reference:
 - A “%” symbol represents a wildcard for zero or more characters.
 - Values in square brackets mean “one of these characters”. E.g. [03] mean 0 or 3 and [0-3] means 0 or 1 or 2 or 3.
 - The field “der_diagnosis_all” is a concatenation of all diagnosis fields in all episodes within the spell.
3. We have included a blanket cancer diagnosis exclusion within the codes to ensure that no activity with a cancer diagnosis mention falls in-scope of EBI guidance. The code for this is:

```
apcs.der_diagnosis_all not like '%C[0-9][0-9]%' and apcs.der_diagnosis_all not like '%D0%' and apcs.der_diagnosis_all not like '%D3[789]%' and apcs.der_diagnosis_all not like '%D4[012345678]%'
```

Interventions where data are sufficiently robust⁴³ to determine rates of variation and set national activity goals using the same methodology as used in the initial list of 17 interventions.⁴⁴

⁴³ In general, the procedure and diagnostic codes have been identified and therefore deemed robust enough to determine rates and goals. However, there are certain limitations unique to each intervention which are set out for each intervention in the 'limitations of data/coding' section in Appendix 5 tables.

⁴⁴ For category 1 interventions, those that should not be routinely performed or commissioned unless accompanied by an IFR, the anticipated figure is zero. Whereas for category 2 interventions, an anticipated activity level should be reduced to the 25th percentile.

A - Diagnostic angiogram for low risk, stable chest pain

```
left(der.Spell_Dominant_Procedure,4) like '%K63[12345689]%'
and (apcs.der_diagnosis_all not like '%I20[01]%' and
apcs.der_diagnosis_all not like '%I2[12345]%' )
```

B - Repair of minimally symptomatic inguinal hernia

```
left(der.Spell_Dominant_Procedure,3)='T20' and
der.Spell_Primary_Diagnosis like 'K40[29]%'
```

C - Surgical intervention for chronic sinusitis

```
apcs.der_procedure_all like '%Y761%' and
der.Spell_Primary_Diagnosis like 'J32%'
```

D - Removal of adenoids

```
apcs.der_procedure_all like '%E20[1489]%' and
apcs.der_procedure_all like '%D151%' and
der.Spell_Primary_Diagnosis like 'H653%' and
(apcs.der_diagnosis_all not like '%G473%' and
apcs.der_diagnosis_all not like '%J32%' and
apcs.der_diagnosis_all not like '%Q3[57]%' ) and
isnull(APCS.Age_At_Start_of_Spell_SUS,APCS.Der_Age_at_CDS_Acti
vity_Date)<19
```

E - Arthroscopic surgery for meniscal tears

```
left(der.Spell_Dominant_Procedure,3)='W82' and
(der.Spell_Primary_Diagnosis like '%M23[23]%' or
der.Spell_Primary_Diagnosis like '%S832%' )
```

F - Troponin test

```
ecds.Der_EC_Investigation_All like '%105000003%' or
ecds.Der_EC_Investigation_All like '%12187000[12]%' or
ecds.Der_EC_Investigation_All like '%313724009%' or
ecds.Der_EC_Investigation_All like '%313616005%' or
ecds.Der_EC_Investigation_All like '%314068007%' or
ecds.Der_EC_Investigation_All like '%166794009%' or
ecds.Der_EC_Investigation_All like '%105001004%' or
ecds.Der_EC_Investigation_All like '%784261000000103%'
```

G - Surgical removal of kidney stones

```
(left(der.Spell_Dominant_Procedure,4) in
('M094','M098','M164','M261','M262','M263','M271','M272','M273
','M278') OR left(der.Spell_Dominant_Procedure,3)='M28') and
der.Spell_Primary_Diagnosis like '%N20[0129]%' and
```

```
isnull(APCS.Age_At_Start_of_Spell_SUS,APCS.Der_Age_at_CDS_Acti
vity_Date) between 19 and 120
```

H - Cystoscopy for men with uncomplicated lower urinary tract symptoms

```
left(der.Spell_Dominant_Procedure,3)='M45' and apcs.sex=1
```

I - Surgical intervention for benign prostatic hypertrophy

```
(left(der.Spell_Dominant_Procedure,4) like '%M61[123489]%' or
left(der.Spell_Dominant_Procedure,4) like '%M641%' or
left(der.Spell_Dominant_Procedure,4) like '%M65[1234589]%' or
left(der.Spell_Dominant_Procedure,4) like '%M65[89]%' or
left(der.Spell_Dominant_Procedure,4) like '%M66[12]%' or
left(der.Spell_Dominant_Procedure,4) like '%M68[13]%' and
der.Spell_Primary_Diagnosis like '%N40%' and apcs.sex=1
```

J - Discectomy

```
left(der.Spell_Dominant_Procedure,4) in
('V291','V292','V293','V294','V295','V296','V298','V299','V331
','V332','V333','V334','V335','V336','V337','V338','V339','V35
1','V358','V359','V511','V518','V519','V521','V522','V525',
'V528','V529','V581','V582','V583','V588','V589','V601','V602'
,'V603','V608','V609') and (der.Spell_Primary_Diagnosis like
'%M5[01][01]%' or der.Spell_Primary_Diagnosis like
'%M54[1234]%' and
isnull(APCS.Age_At_Start_of_Spell_SUS,APCS.Der_Age_at_CDS_Acti
vity_Date) between 19 and 120
```

K - Radiofrequency facet joint denervation

```
when der.Spell_Dominant_Procedure like '%V48[1357]%' and
left(der.spell_primary_diagnosis,4) in
('M518','M519','M545','M549') and (apcs.der_procedure_all like
'%Z67[4567]%' or apcs.der_procedure_all like '%Z993%')
```

L - Exercise ECG for screening for coronary artery disease

```
OPA.Der_Procedure_All LIKE '%U194%'
```

Interventions including those in diagnostic and outpatient settings where data are available but further exploration of additional datasets is proposed to improvement robustness and establish national activity goals⁴⁵.

APC extract

⁴⁵ For these intervention data, procedure coding is available however diagnosis and indication coding is either partial or has limitations [see Appendix 5 tables for each intervention] therefore it was inappropriate to calculate goals for these interventions.

```
left(der.Spell_Dominant_Procedure,3) in
('G16','G19','G46','G65','G80')
```

OP extract

```
OPA.Der_Procedure_All like '%G16%' or OPA.Der_Procedure_All
like '%G19%' or OPA.Der_Procedure_All like '%G46%' or
OPA.Der_Procedure_All like '%G65%' or OPA.Der_Procedure_All
like '%G80%'
```

N - Appropriate colonoscopy & O - Repeat colonoscopy

```
when (opa.Der_Procedure_All like '%H22[189]%' or
opa.Der_Procedure_All like '%H68%') and
isnull(opa.der_diagnosis_all,'') not like '%Z121%' and
isnull(opa.Age_at_Start_of_Episode_SUS,opa.Der_Age_at_CDS_Acti
vity_Date) between 19 and 120
```

P - ERCP in acute gallstone pancreatitis without cholangitis

```
apcs.[Der_Procedure_All] LIKE '%J43[12389]%'
AND (APCs.[Der_Diagnosis_All] LIKE '%K851%') and (case when
apcep.[Primary_Procedure_Code] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Primary_Procedure_Date])<=3
then 1 else 0 end+
case when apcep.[Procedure_Code_2] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_2])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_3] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_3])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_4] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_4])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_5] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_5])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_6] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_6])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_7] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_7])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_8] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_8])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_9] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_9])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_10] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_10])<=3 then 1
else 0 end +
```

```

case when apcep.[Procedure_Code_11] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_11])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_12] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_12])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_13] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_13])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_14] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_14])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_15] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_15])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_16] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_16])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_17] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_17])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_18] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_18])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_19] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_19])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_20] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_20])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_21] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_21])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_22] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_22])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_23] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_23])<=3 then 1
else 0 end +
case when apcep.[Procedure_Code_24] LIKE '%J43[12389]%' and
datediff(dd,apcs.Admission_Date,[Procedure_Date_24])<=3 then 1
else 0 end)>0

```

Q - Cholecystectomy

```

(
APCEM.[Der_Procedure_All] LIKE '%J181%' OR
APCEM.[Der_Procedure_All] LIKE '%J182%' OR
APCEM.[Der_Procedure_All] LIKE '%J183%' OR
APCEM.[Der_Procedure_All] LIKE '%J184%' OR

```

```

APCEM.[Der_Procedure_All] LIKE '%J185%' OR
APCEM.[Der_Procedure_All] LIKE '%J188%' OR
APCEM.[Der_Procedure_All] LIKE '%J189%'
)
AND
APCEM.[Der_Diagnosis_All] LIKE '%K851%'

```

R – Appendectomy without diagnosis of appendicitis

```

Der.spell_dominant_procedure like '%H0[12]%'

```

S - Low back pain imaging

```

(opa.Der_Procedure_All like '%U05[45]%' or
  ((opa.Der_Procedure_All like '%U13[2356]%' or
  opa.Der_Procedure_All like '%U21[1267]%' )
  and (opa.Der_Procedure_All like '%Z665%' or
  opa.Der_Procedure_All like '%O162%'))))
and
isnull(opa.Age_at_Start_of_Episode_SUS,opa.Der_Age_at_CDS_Acti
vity_Date) between 19 and 120

```

T - Knee MRI when symptoms are suggestive of osteoarthritis & U – Knee MRI for suspected meniscal tears

```

opa.Der_Procedure_All like '%U133%' and (opa.Der_Procedure_All
like '%Z846%' or opa.Der_Procedure_All like '%O132%') and
isnull(opa.Age_at_Start_of_Episode_SUS,opa.Der_Age_at_CDS_Acti
vity_Date) between 19 and 120

```

V - Vertebroplasty for painful osteoporotic vertebral fractures

```

left(der.Spell_Dominant_Procedure,4)='V444' and
der.Spell_Primary_Diagnosis like '%M80%' and
isnull(APCS.Age_At_Start_of_Spell_SUS,APCS.Der_Age_at_CDS_Acti
vity_Date) between 19 and 120

```

W - Imaging for shoulder pain

```

(opa.Der_Procedure_All like '%U13[236]%' or
opa.Der_Procedure_All like '%U21[126]%' ) and
  (opa.Der_Procedure_All like '%Z81[489]%' or
opa.Der_Procedure_All like '%Z891%') and
isnull(opa.Age_at_Start_of_Episode_SUS,opa.Der_Age_at_CDS_Acti
vity_Date) between 19 and 120

```

X - MRI scan of the hip for arthritis

```
(opa.Der_Procedure_All like '%U133%' or opa.Der_Procedure_All like '%U211%') and (opa.Der_Procedure_All like '%Z84[389]%' or opa.Der_Procedure_All like '%Z902%') and isnull(opa.Age_at_Start_of_Episode_SUS,opa.Der_Age_at_CDS_Activity_Date) between 19 and 120
```

Y - Fusion surgery for mechanical axial low back pain

```
left(der.Spell_Dominant_Procedure,4) like '%V38[23456]%' or left(der.Spell_Dominant_Procedure,4) like '%V404%') and der.Spell_Primary_Diagnosis like '%M54[59]%' and apcs.der_diagnosis_all not like '%M40[012]%' and apcs.der_diagnosis_all not like '%M41[01234589]%' and apcs.der_diagnosis_all not like '%M42[019]%' and apcs.der_diagnosis_all not like '%M43[01589]%' and isnull(APCS.Age_At_Start_of_Spell_SUS,APCS.Der_Age_at_CDS_Activity_Date) between 19 and 120
```

Interventions where data are not currently available but propose including because best available evidence suggests interventions are clinically ineffective unless performed in certain circumstances. We will continue to explore additional datasets and collaborate with the wider system to identify opportunities to measure activity.

Z - Helmet therapy for treatment of positional plagiocephaly and brachycephaly in children

```
APCEM.[Der_Procedure_All] LIKE '%V049%' OR  
APCEM.[Der_Procedure_All] LIKE '%V048%'  
)  
AND  
(  
APCEM.[Der_Diagnosis_All] LIKE '%Q673%'  
)  
AND APCEM.Age_at_CDS_Activity_Date)<=2
```

AA - Pre-operative chest x-ray

We have been unable to identify clinical codes or produce activity figures for this intervention.

BB - Preoperative ECG

We have been unable to identify clinical codes or produce activity figures for this intervention.

CC - Prostate-specific antigen (PSA) test

We have been unable to identify clinical codes or produce activity figures for this intervention.

DD - Liver function, creatinine kinase, and lipid level tests – (Lipid lowering therapy)

We have been unable to identify clinical codes or produce activity figures for this intervention.

EE - Blood transfusion

We have been unable to identify clinical codes or produce activity figures for this intervention.

Appendix 7

Variation in activity

This appendix sets out draft analysis of variation in activity. We have segmented the graphs between:

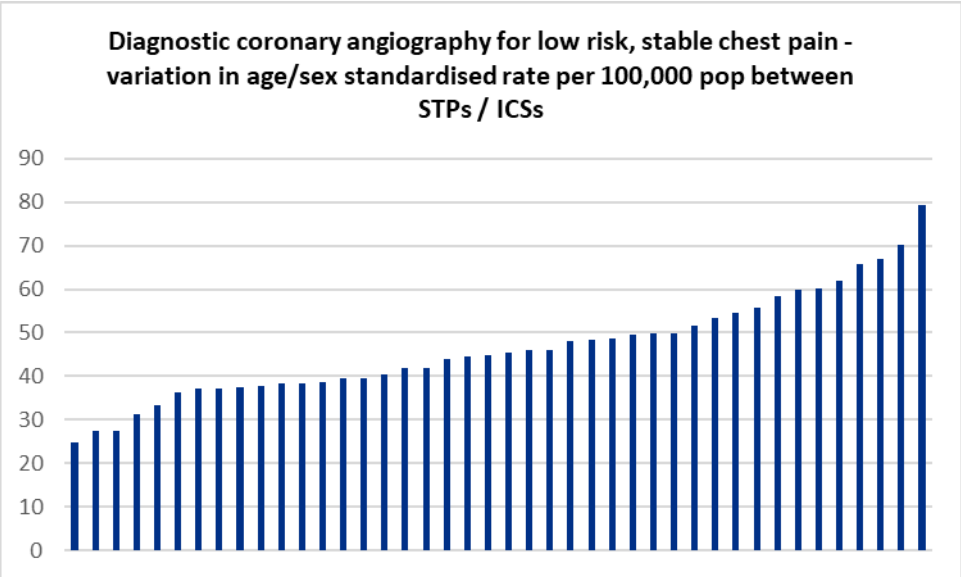
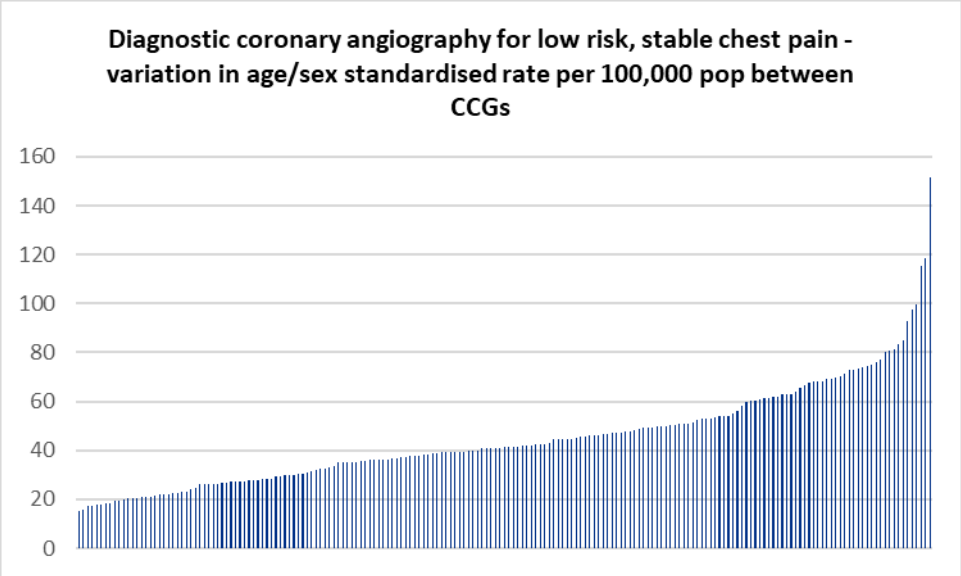
- Those interventions that should not be routinely commissioned by CCGs or performed, unless a successful Individual Funding Request (IFR) is made [Category 1] either because they are a) ineffective or b) have been superseded by a less invasive or more effective alternative;
- Those interventions that should only be commissioned by CCGs or performed when specific clinical criteria are met [Category 2] – this is because they have only been shown to be effective in certain circumstances.

The following pages include charts outlining:

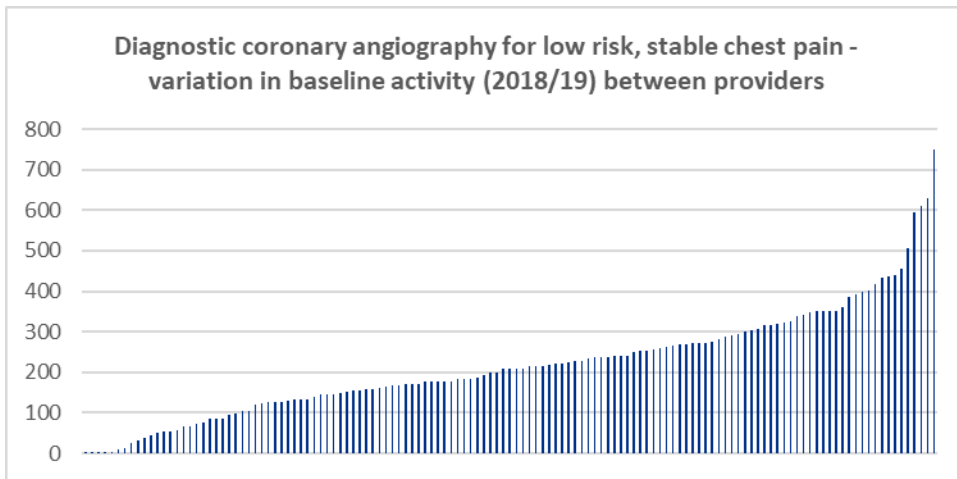
- Intervention variation by CCG: CCG level variation in the age-sex standardised rate per 100,000 population in 2018/19 for each intervention.
- Intervention variation by STP: STP level variation in the age-sex standardised rate per 100,000 population in 2018/19 for each intervention.
- Intervention variation by provider: provider level variation in the baseline activity in 2018/19 for each intervention (age-sex standardised rates are not available for providers).

Interventions where data are sufficiently robust⁴⁶ to determine rates of variation and set national activity goals using the same methodology as used in the initial list of 17 interventions.

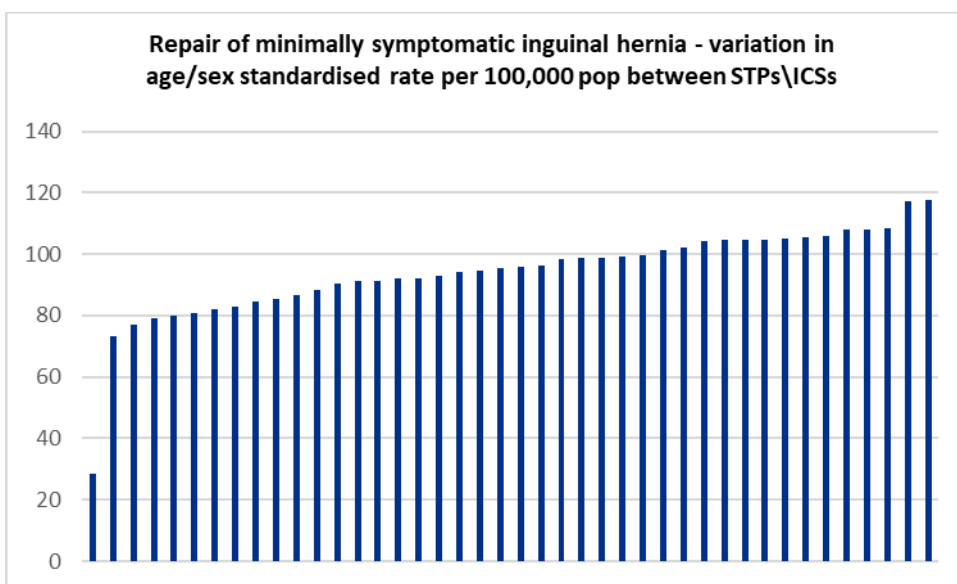
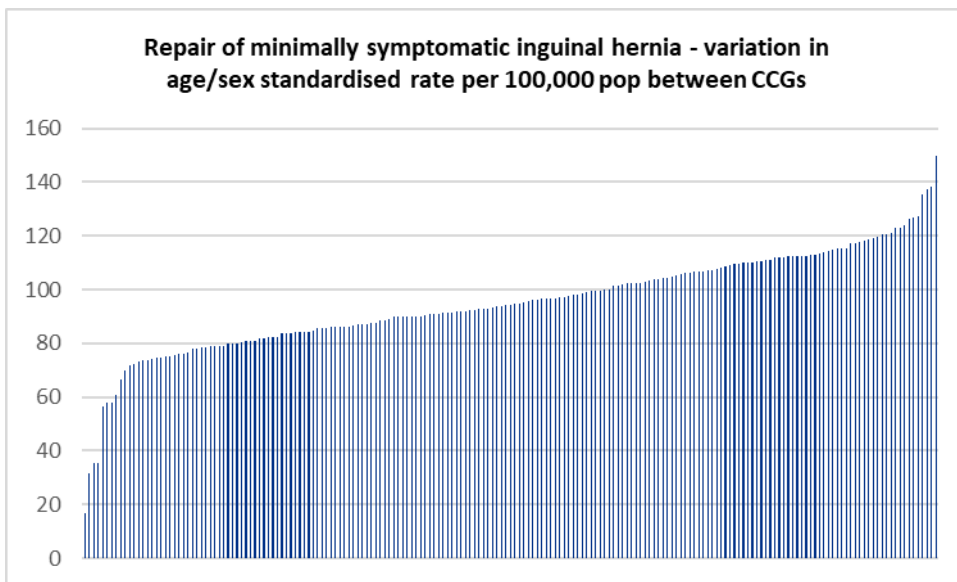
A - Diagnostic angiogram for low risk, stable chest pain

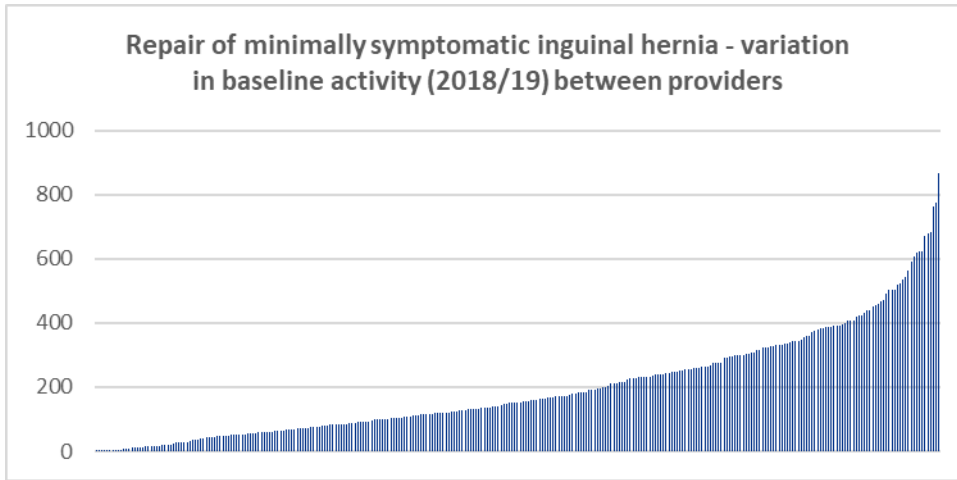


⁴⁶ In general, the procedure and diagnostic codes have been identified and therefore deemed robust enough to determine rates and goals. However, there are certain limitations unique to each intervention which are set out for each intervention in the 'limitations of data/coding' section in Appendix 5 tables.

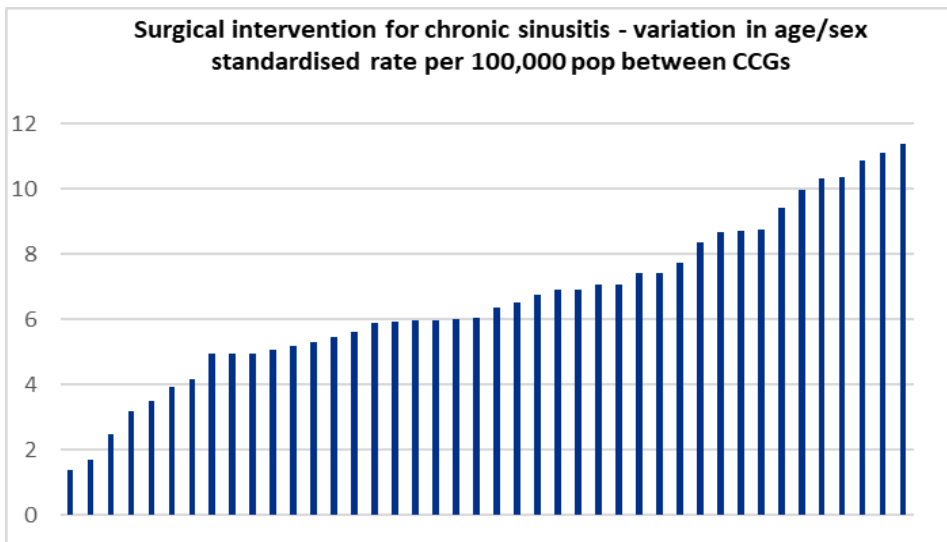
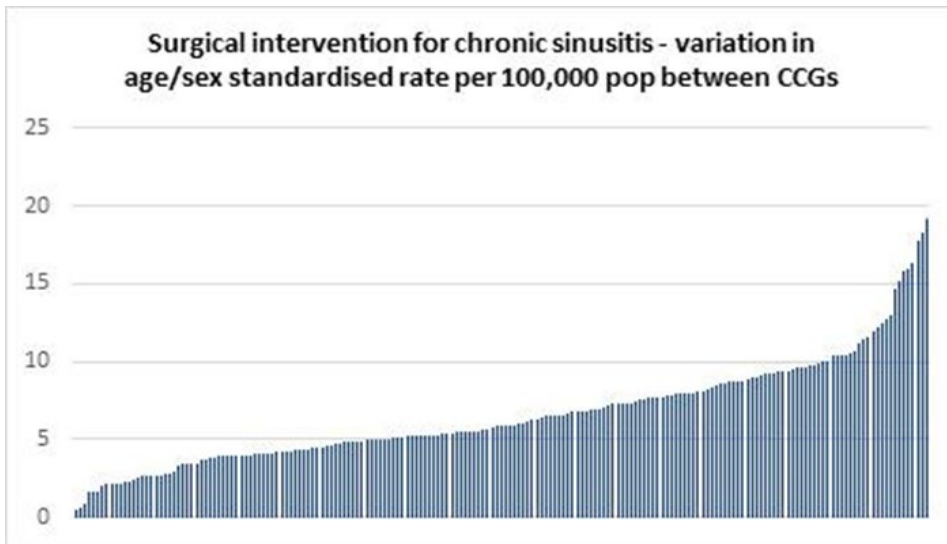


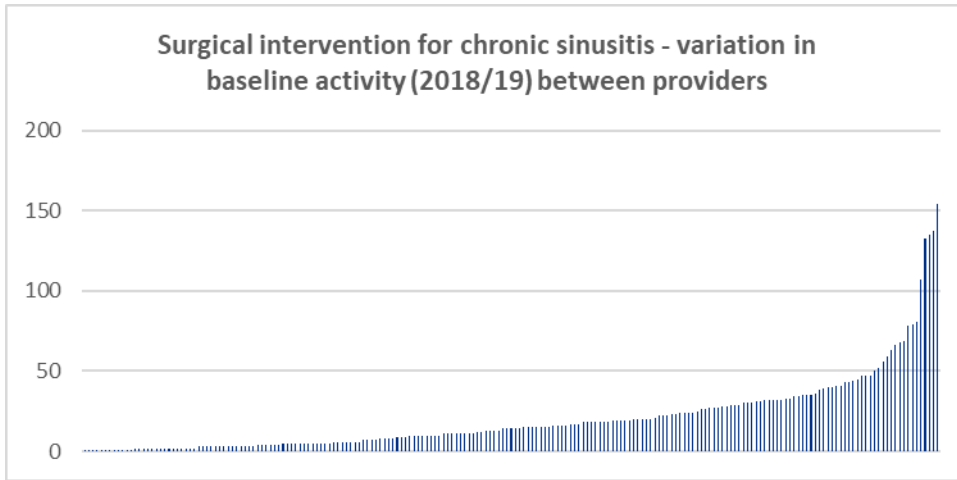
B - Repair of minimally symptomatic inguinal hernia



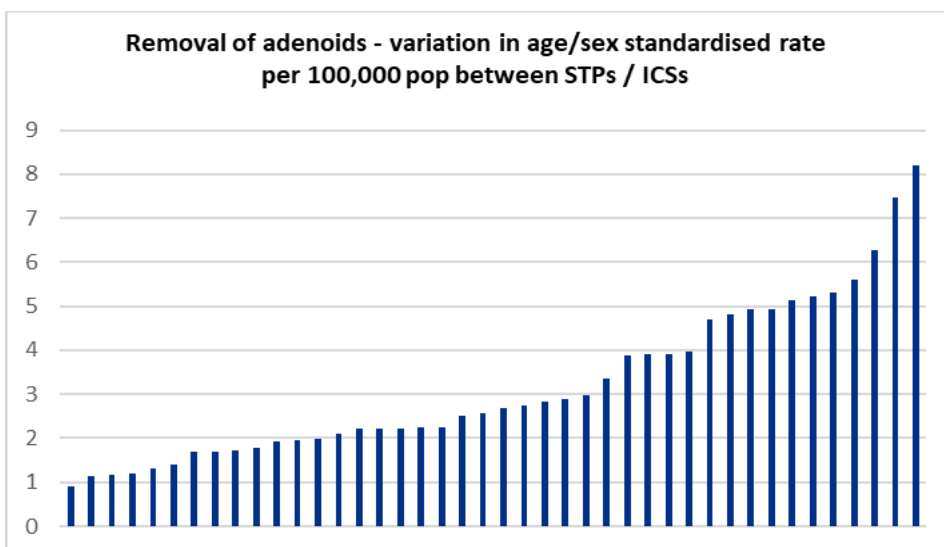
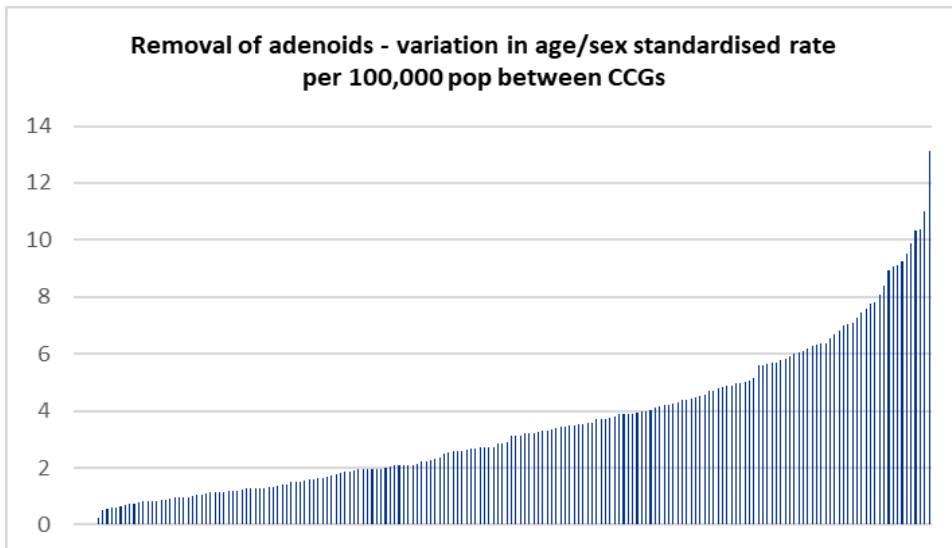


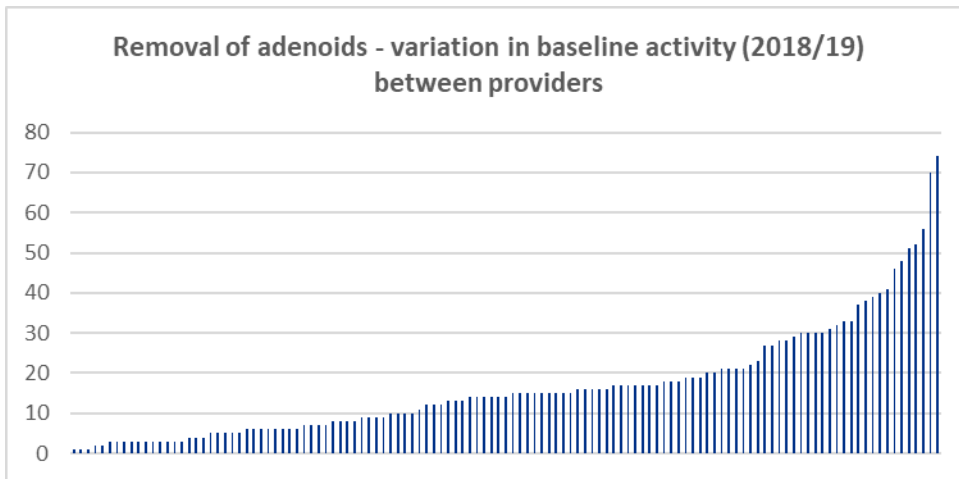
C - Surgical intervention for chronic sinusitis



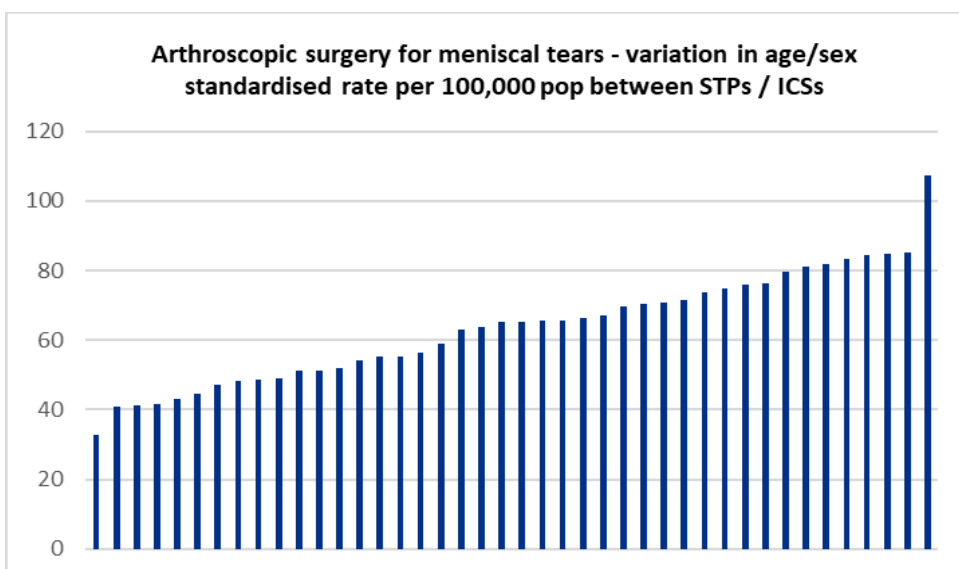
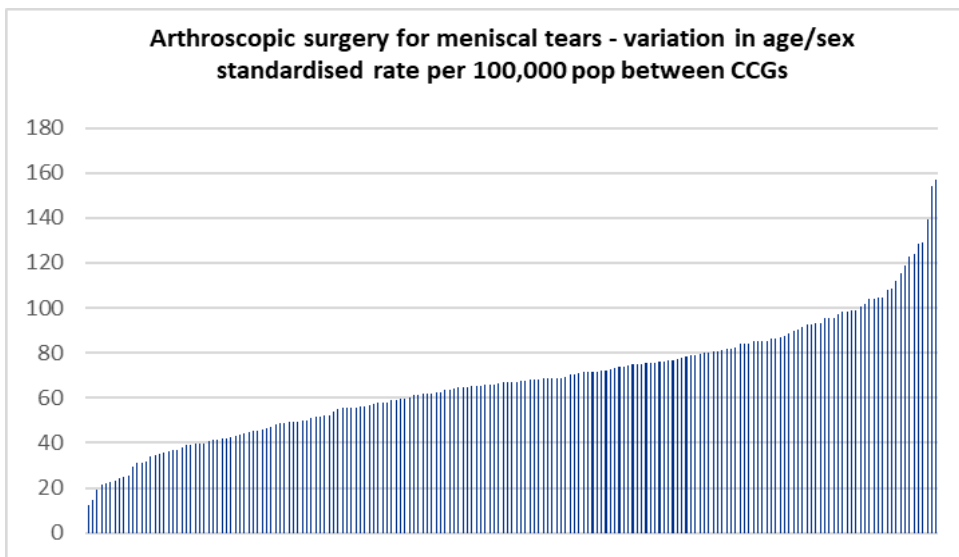


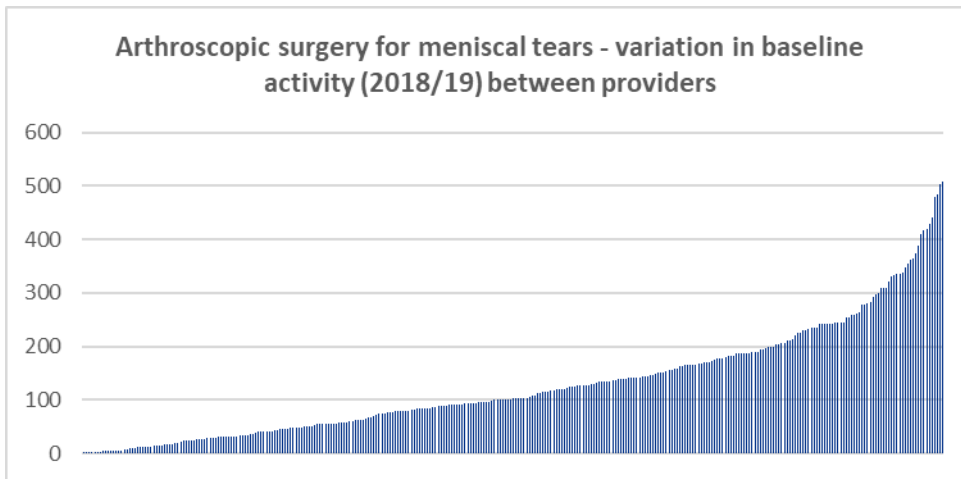
D - Removal of adenoids



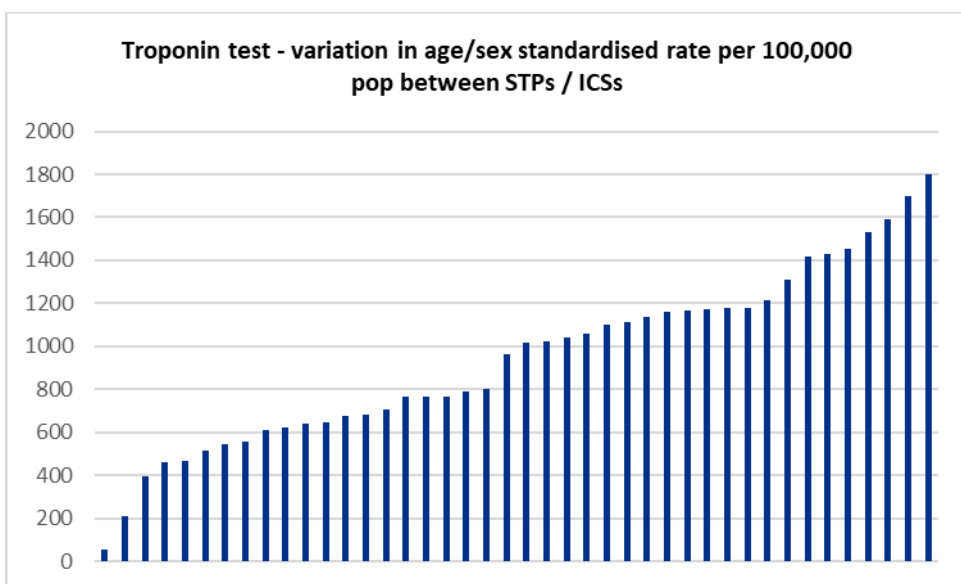
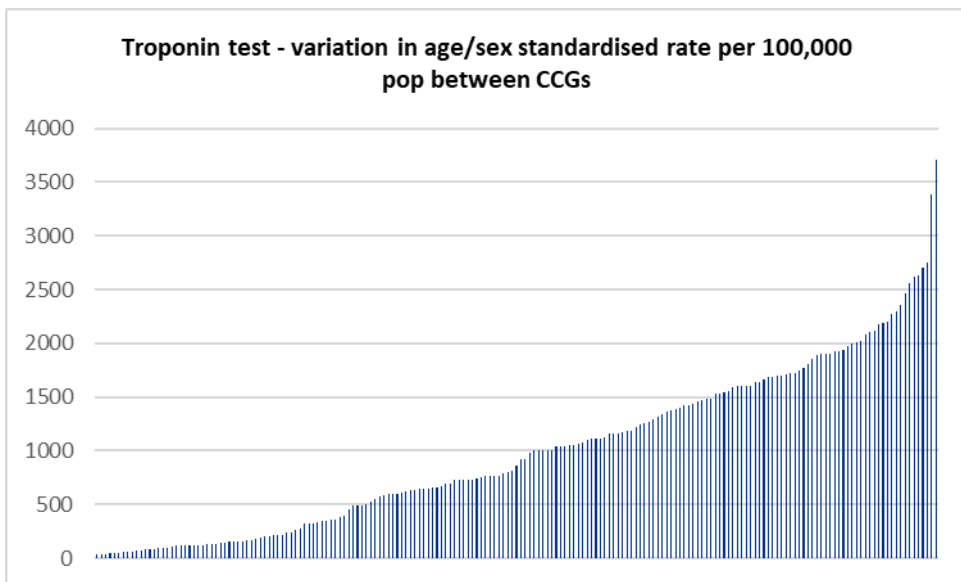


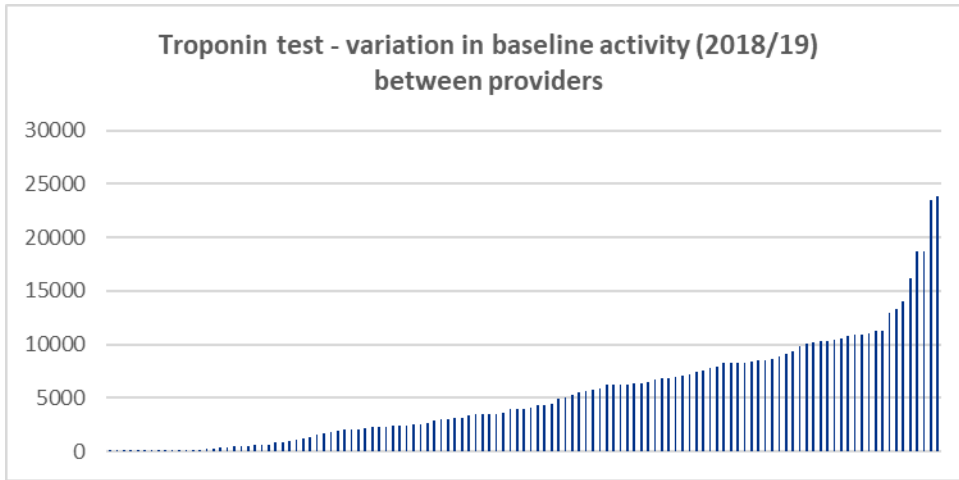
E - Arthroscopic surgery for meniscal tears



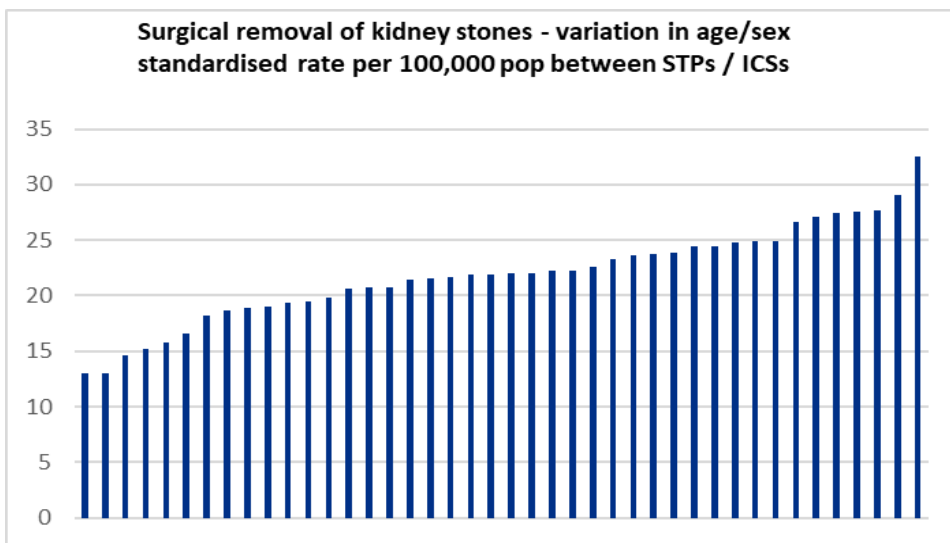
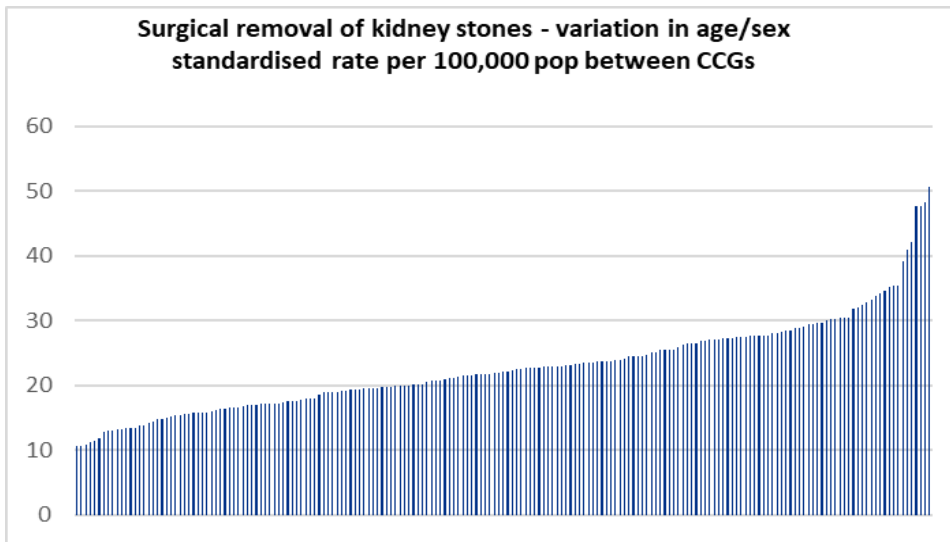


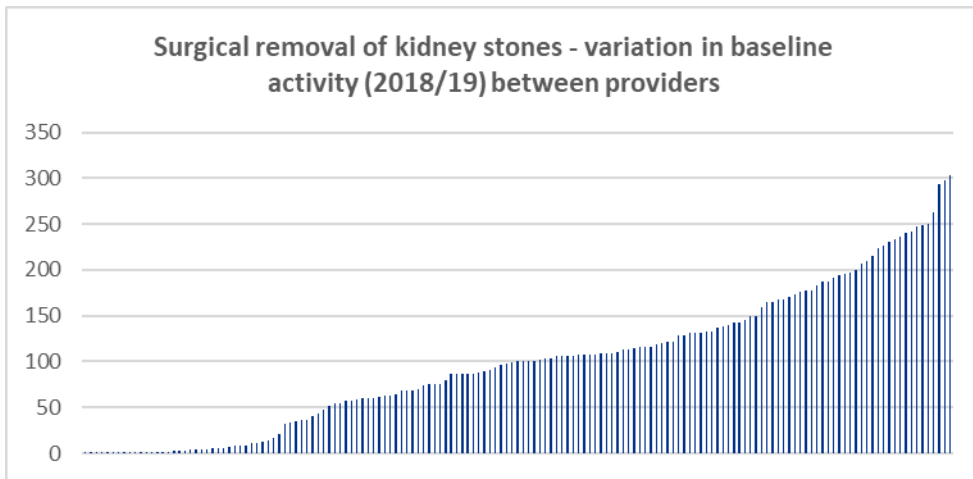
F - Troponin test



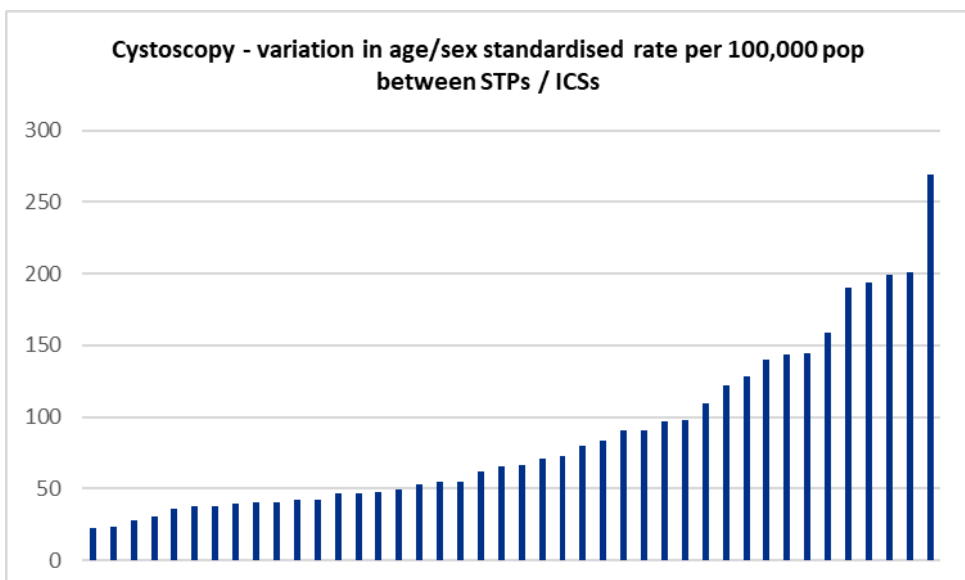
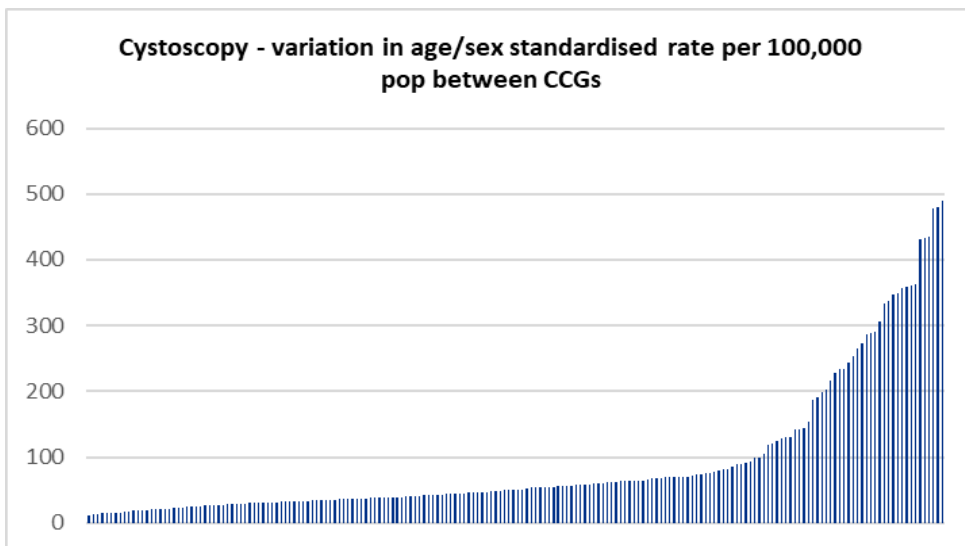


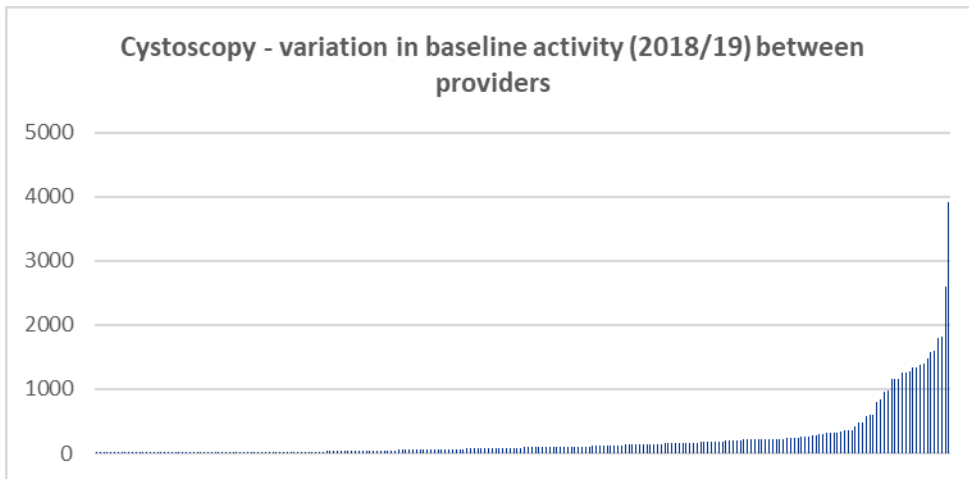
G - Surgical removal of kidney stones



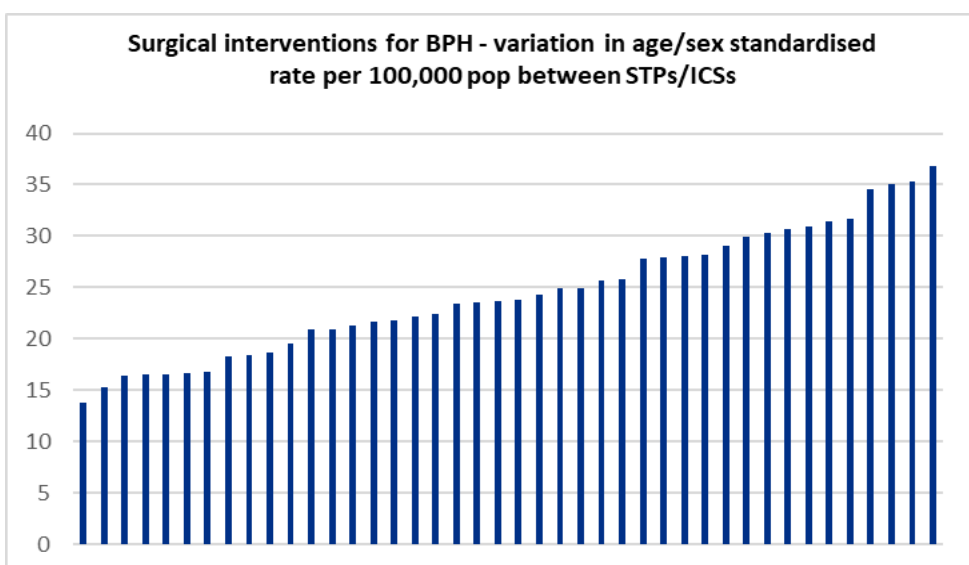
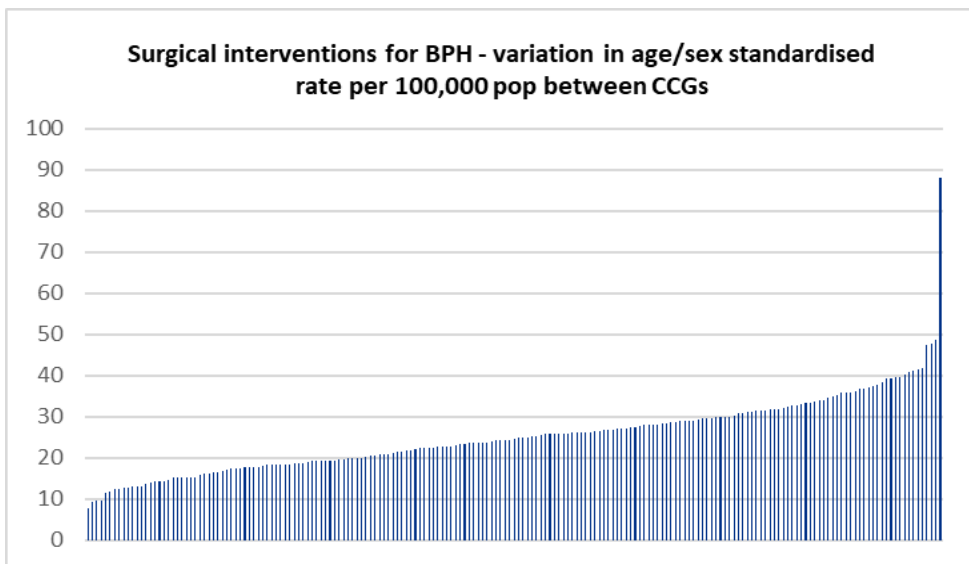


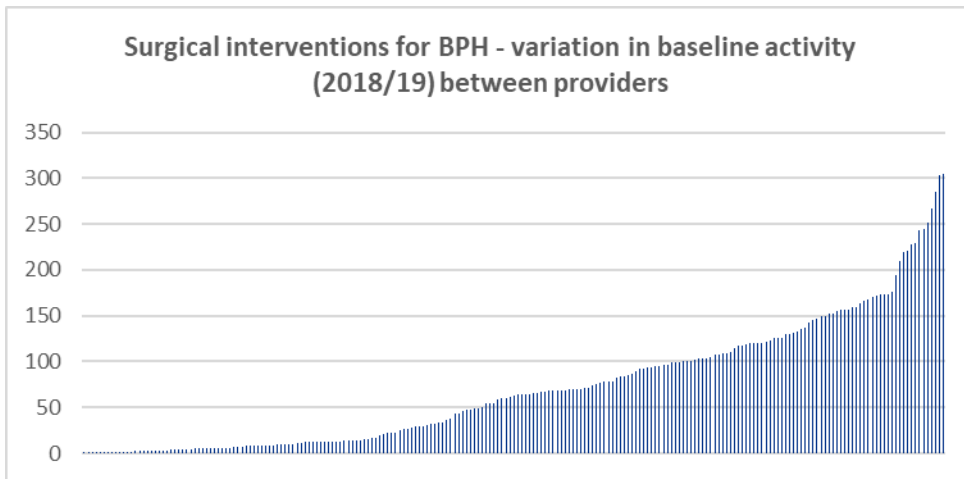
H - Cystoscopy for men with uncomplicated lower urinary tract symptoms



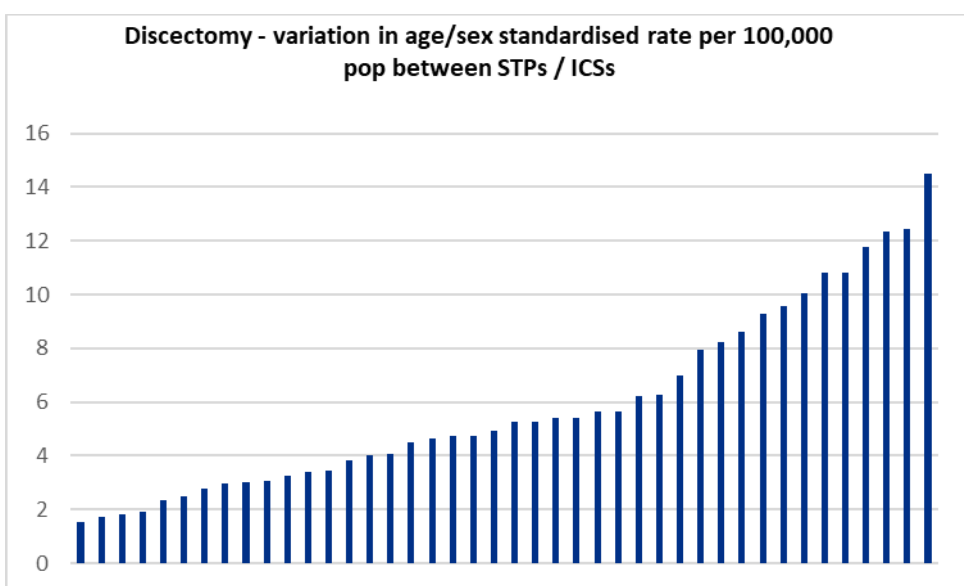
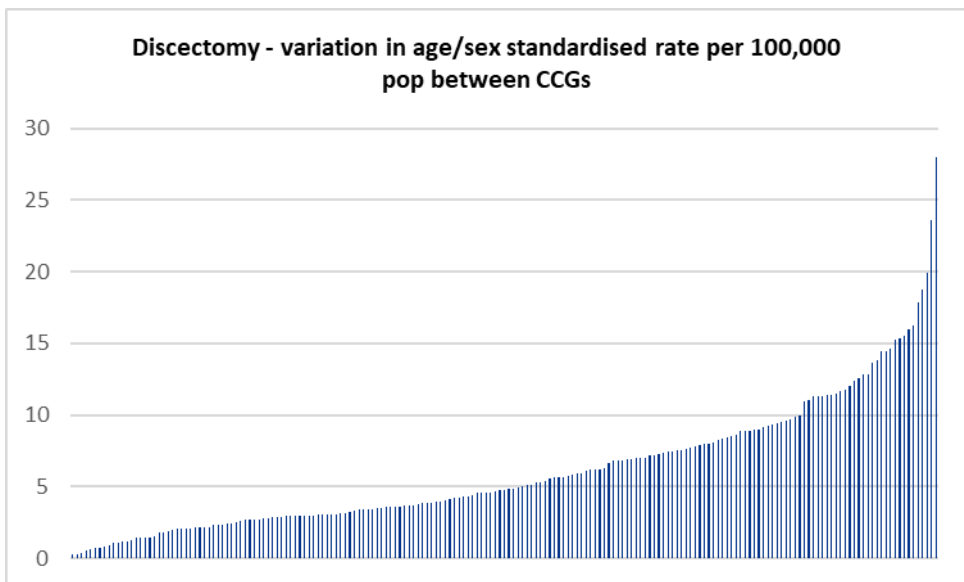


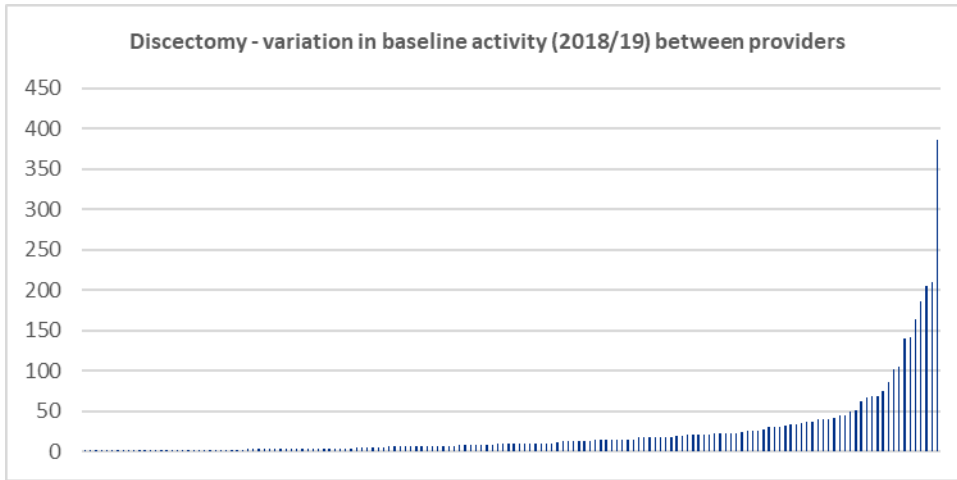
I - Surgical intervention for benign prostatic hypertrophy



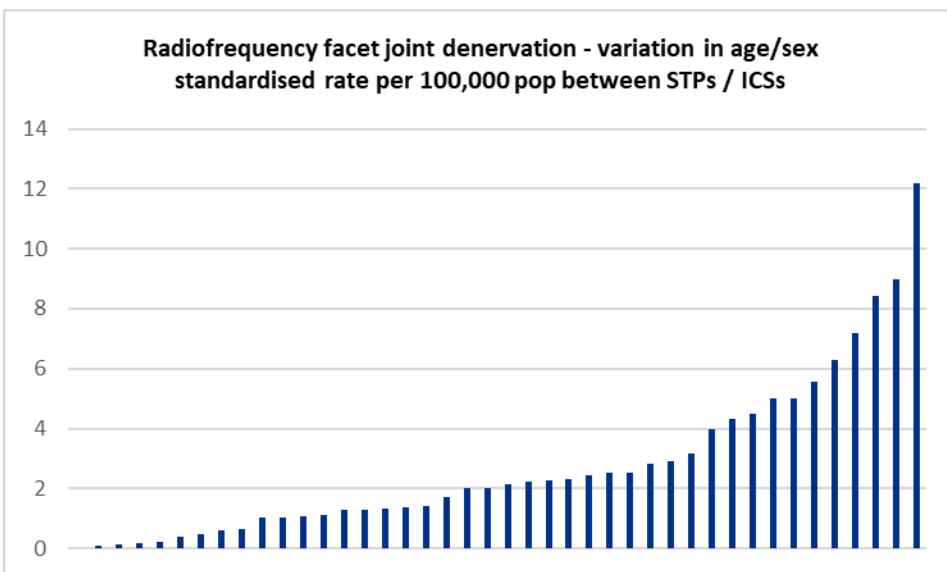
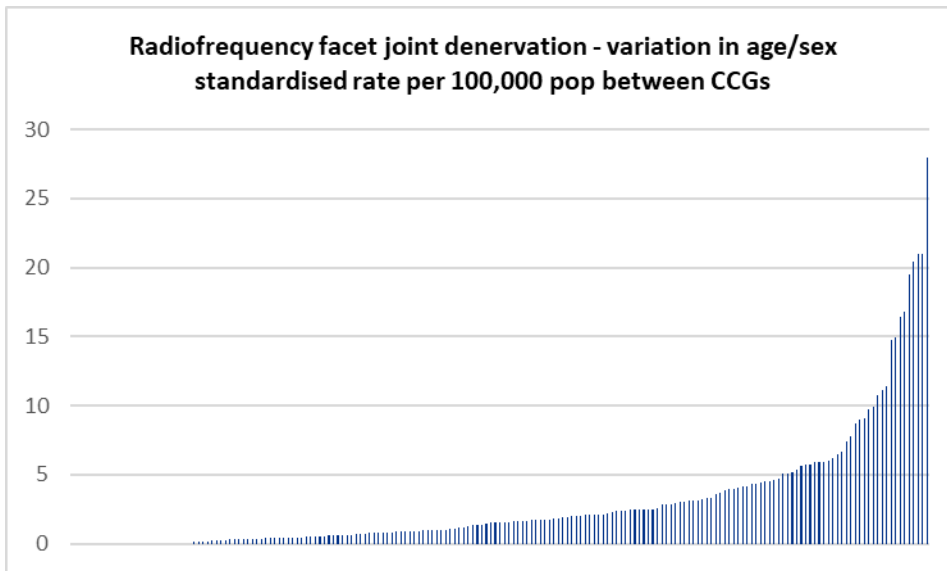


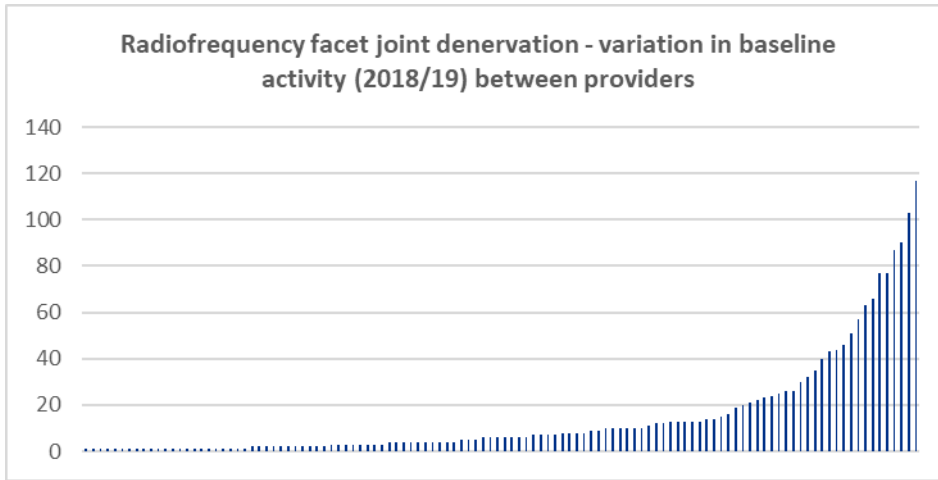
J – Discectomy



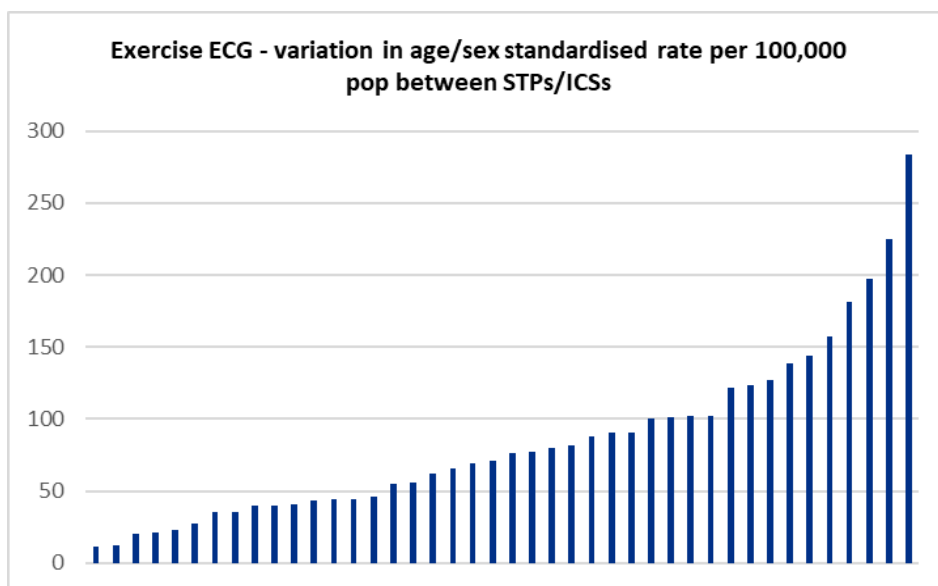
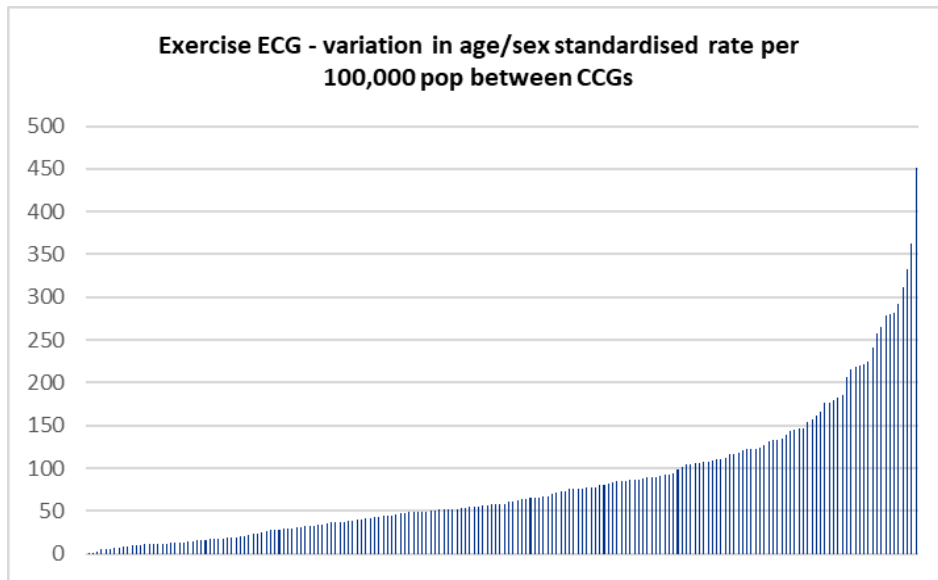


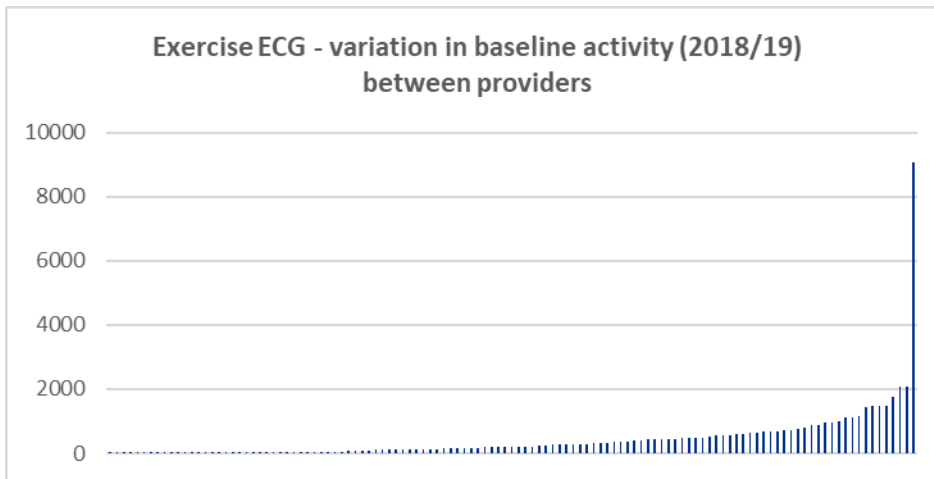
K - Radiofrequency facet joint denervation



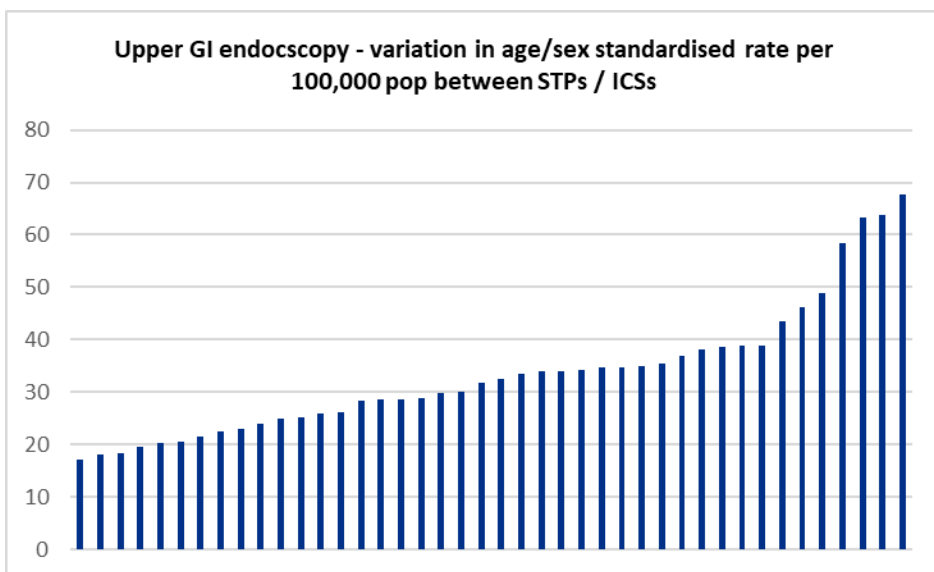
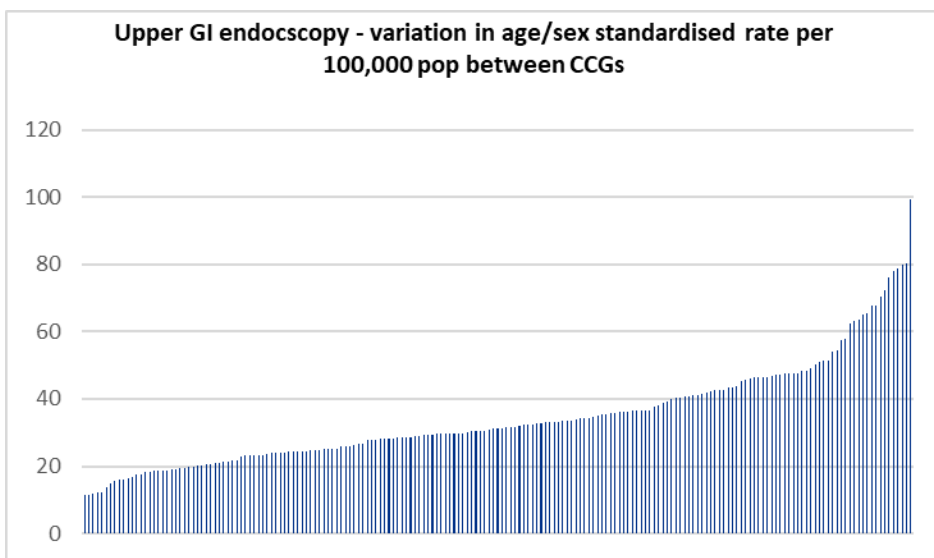


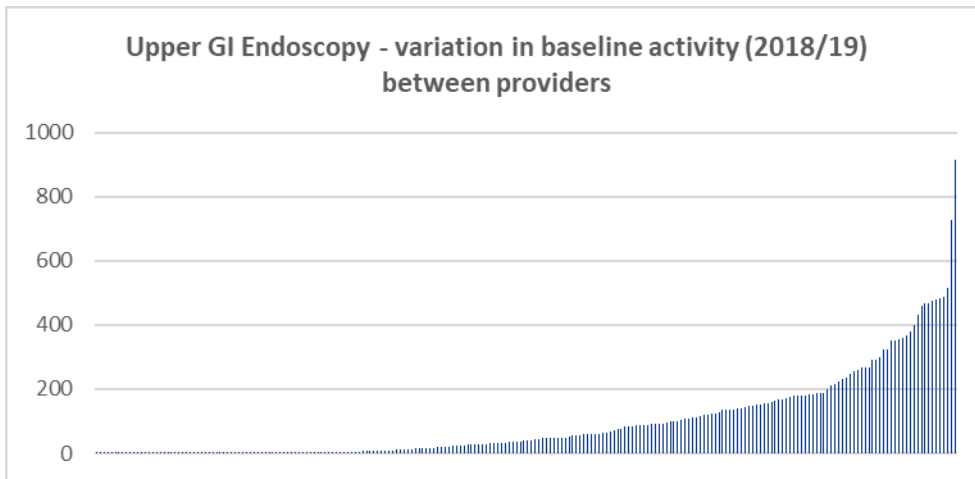
L - Exercise ECG for screening for coronary heart disease





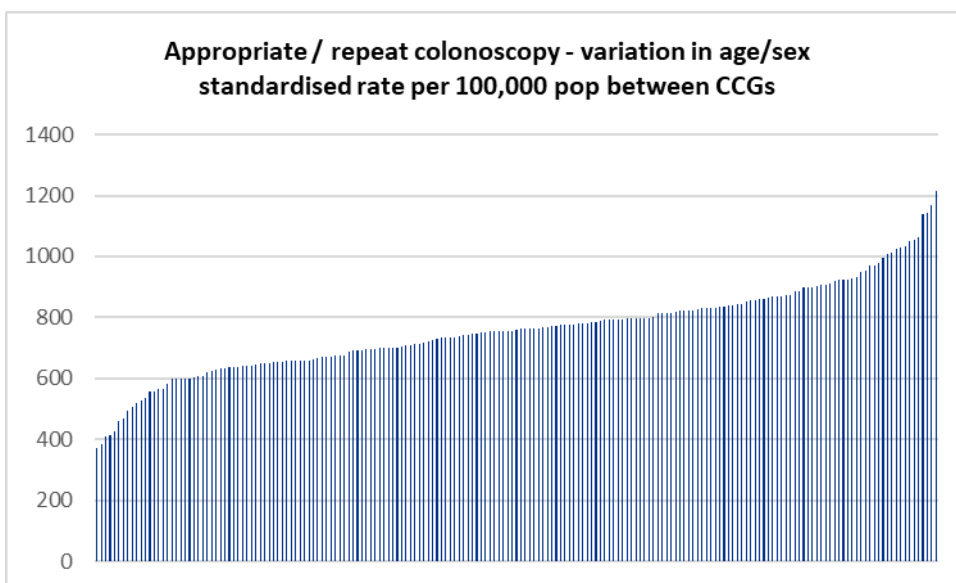
M - Upper GI endoscopy



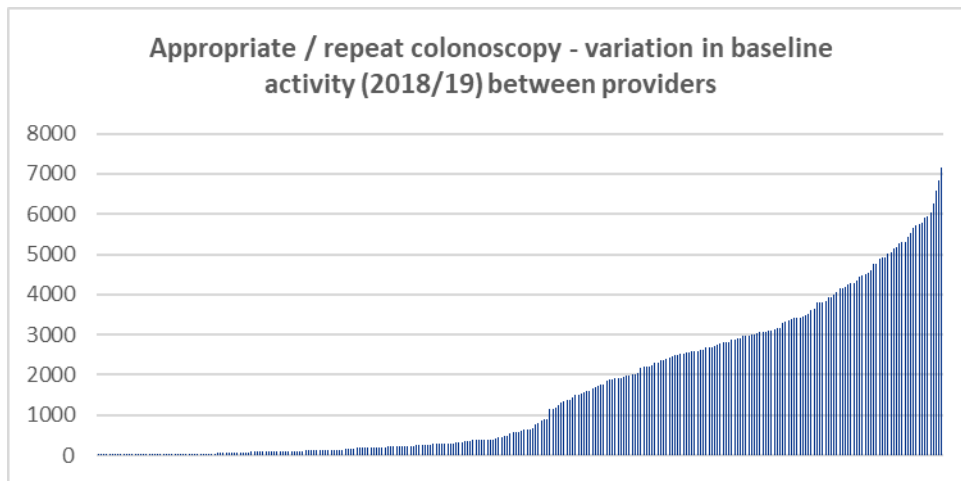
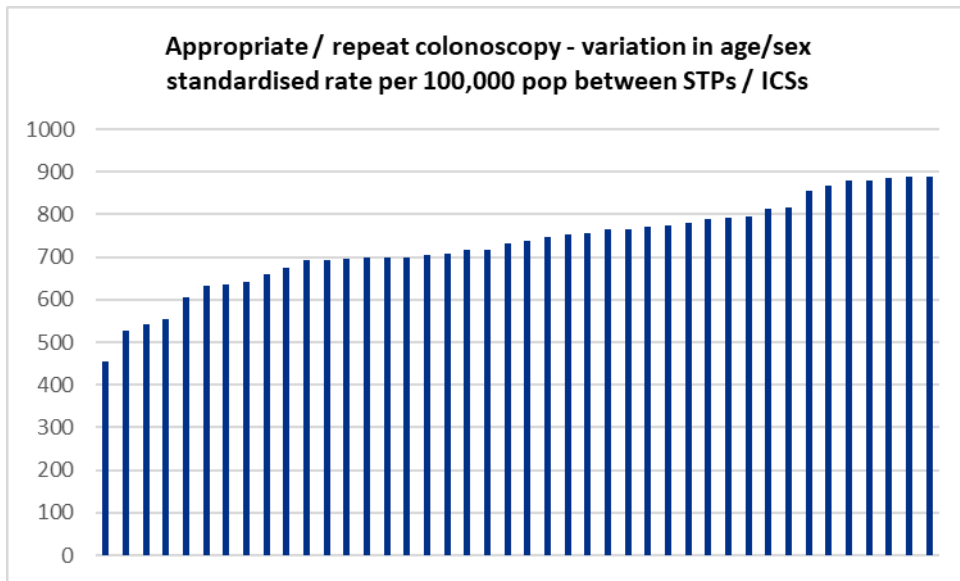


Interventions including those in diagnostic and outpatient settings where data are available but further exploration of additional datasets is proposed to improvement robustness and establish national activity goals⁴⁷.

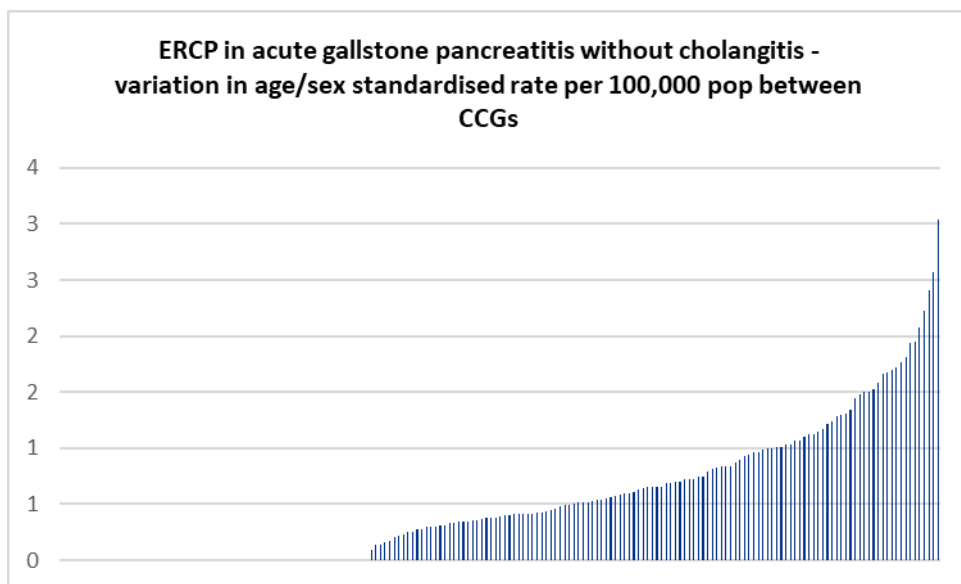
N - Appropriate colonoscopy & 0 - Repeat colonoscopy

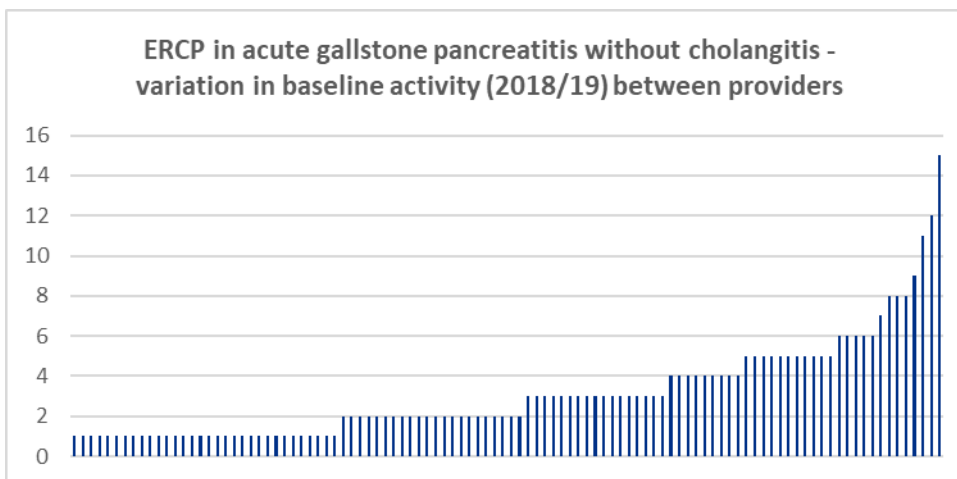
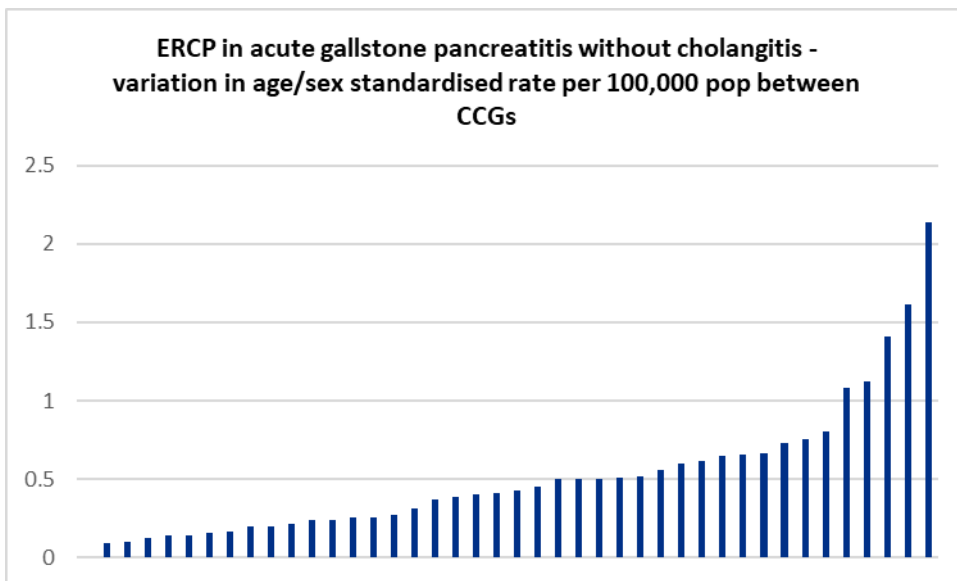


⁴⁷ For these intervention data, procedure coding is available however diagnosis and indication coding is either partial or has limitations [see Appendix 5 tables for each intervention] therefore it was inappropriate to calculate goals for these interventions.

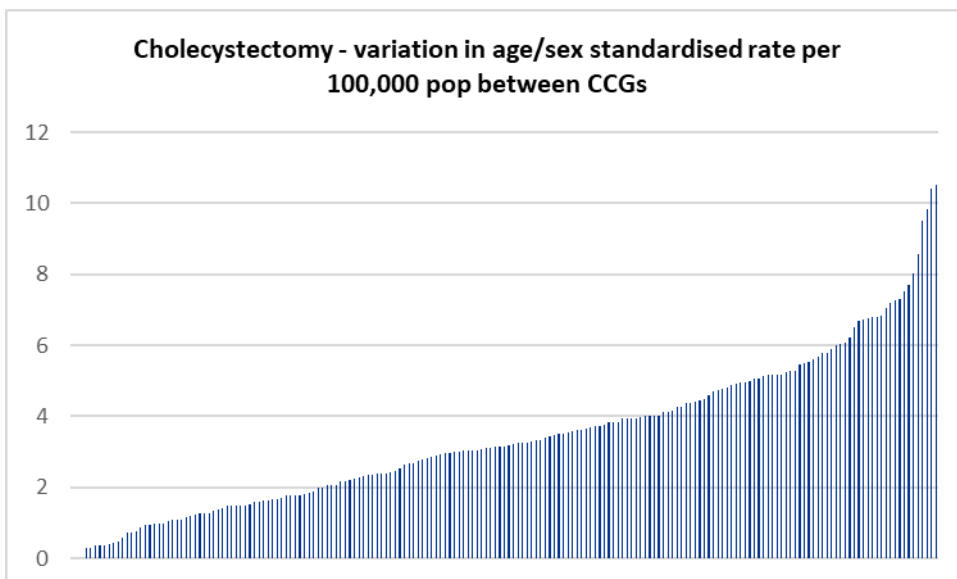


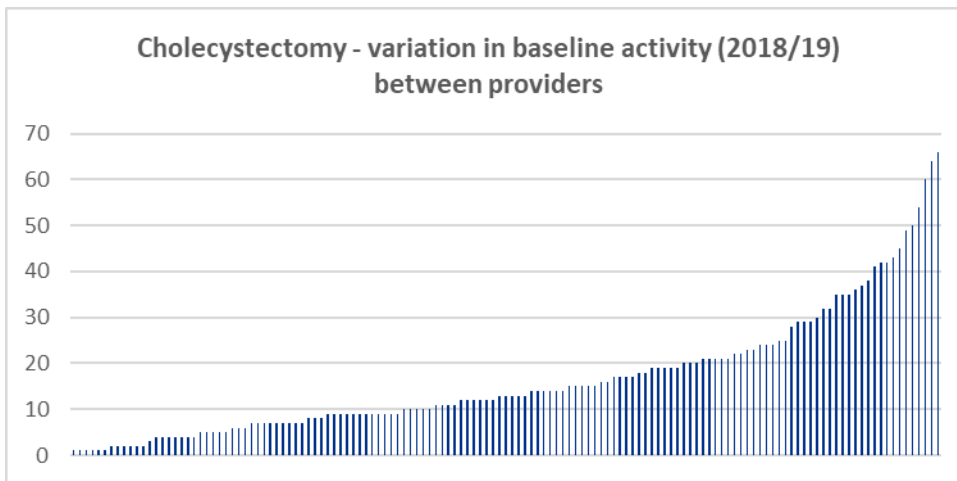
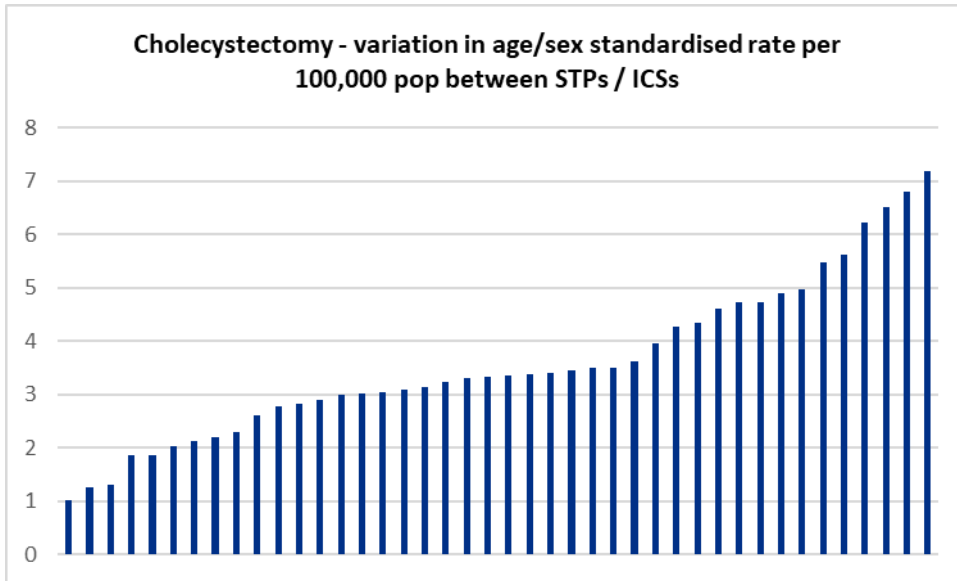
P - ERCP in acute gallstone pancreatitis without cholangitis



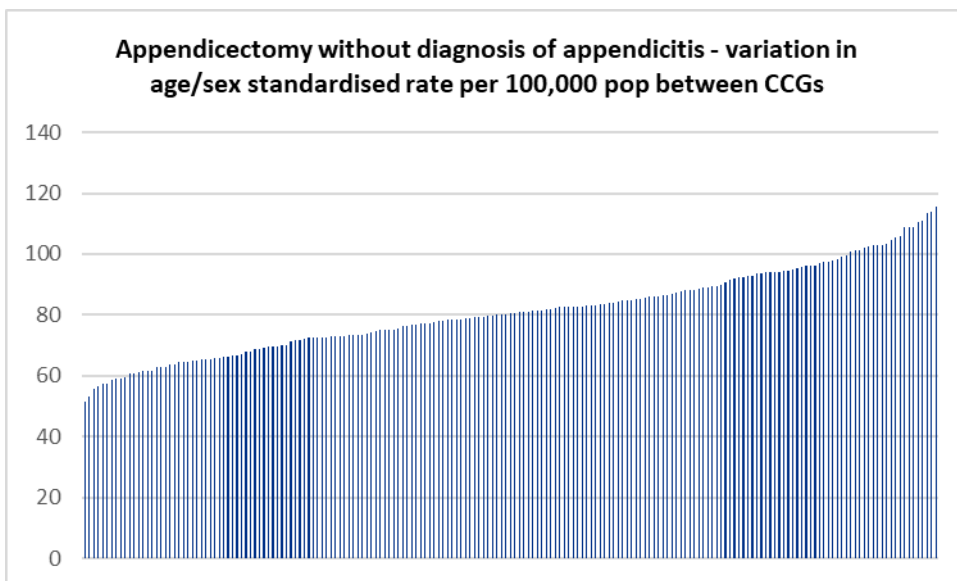


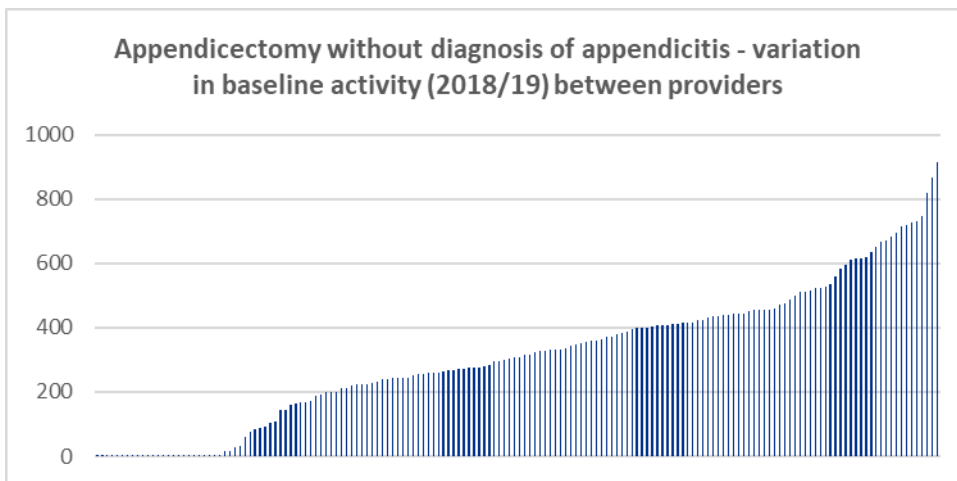
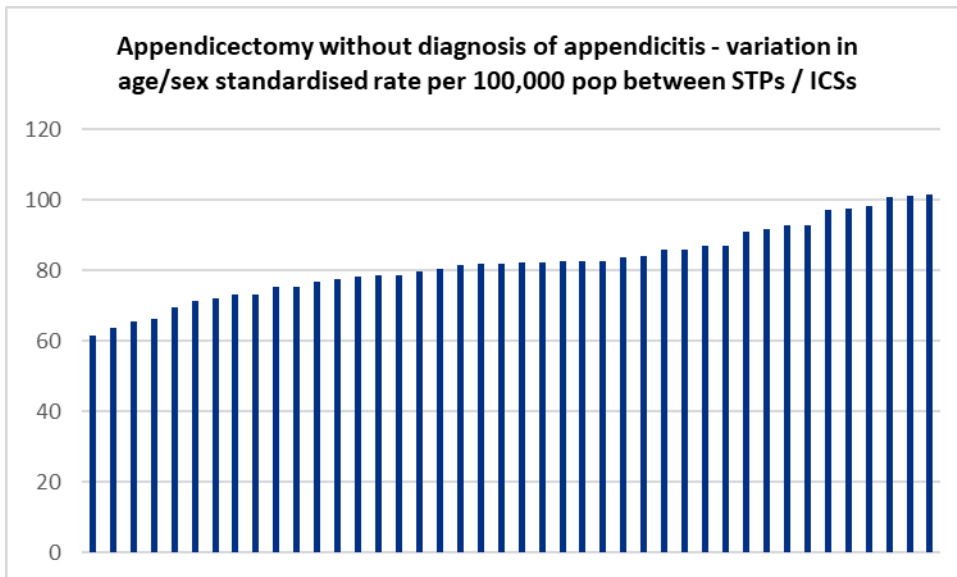
Q – Cholecystectomy



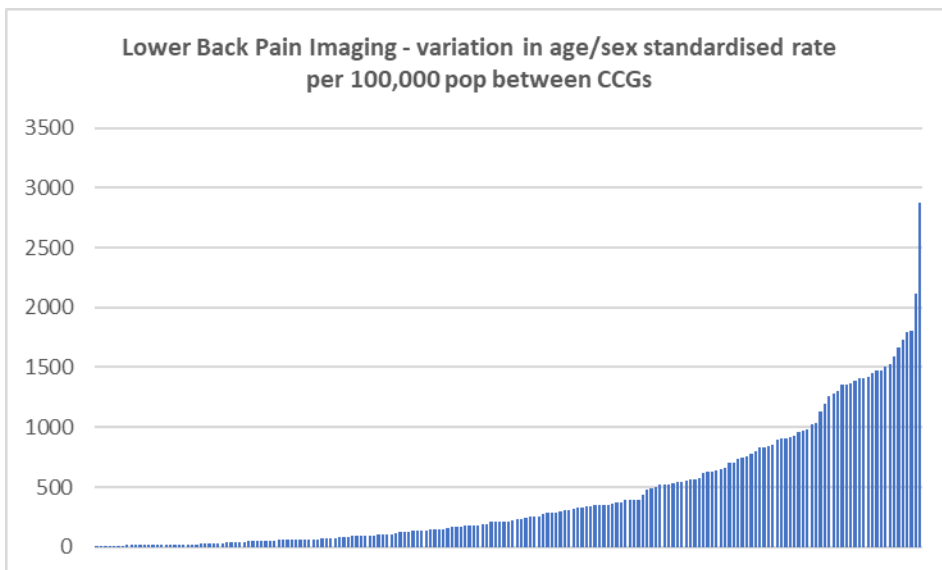


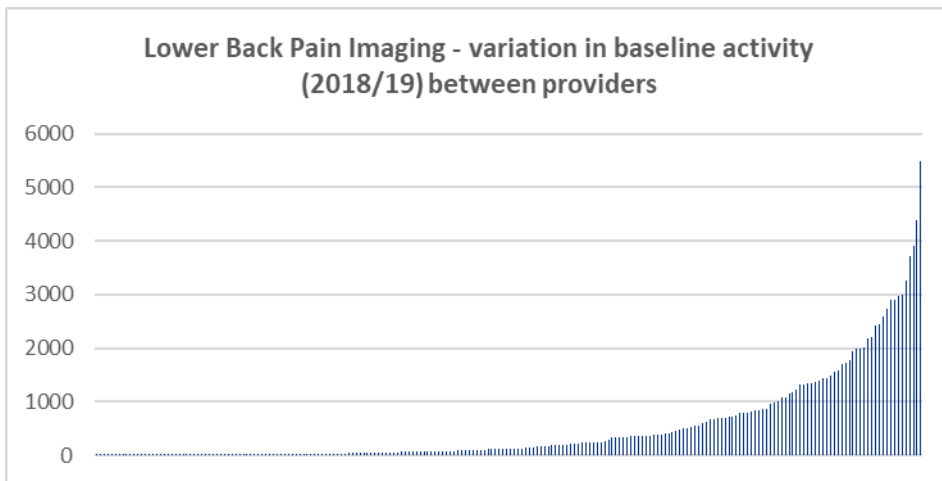
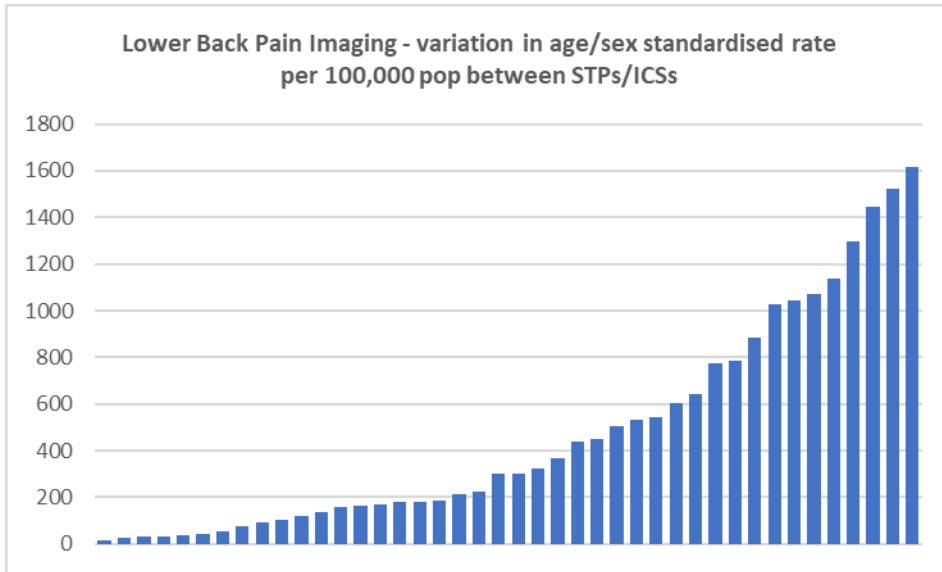
R – Appendicectomy without diagnosis of appendicitis



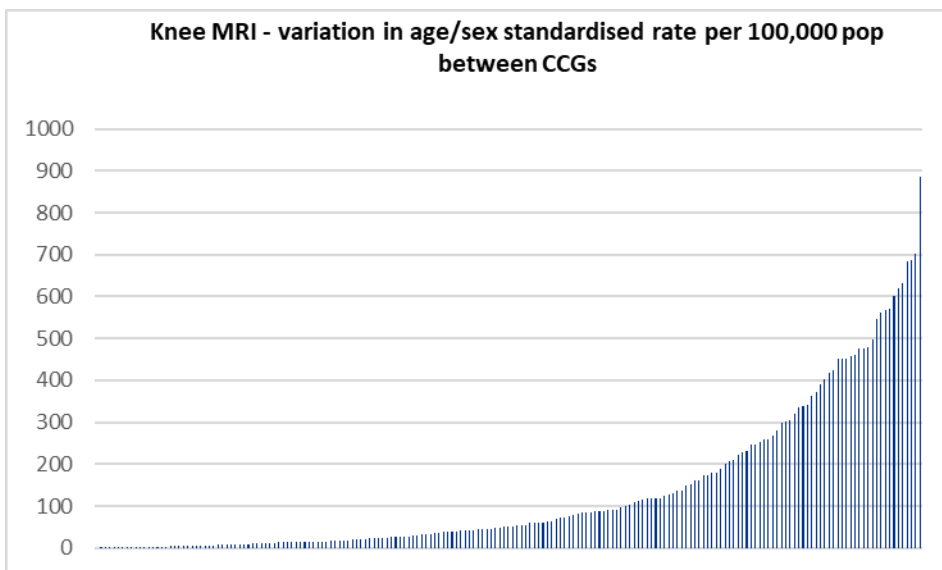


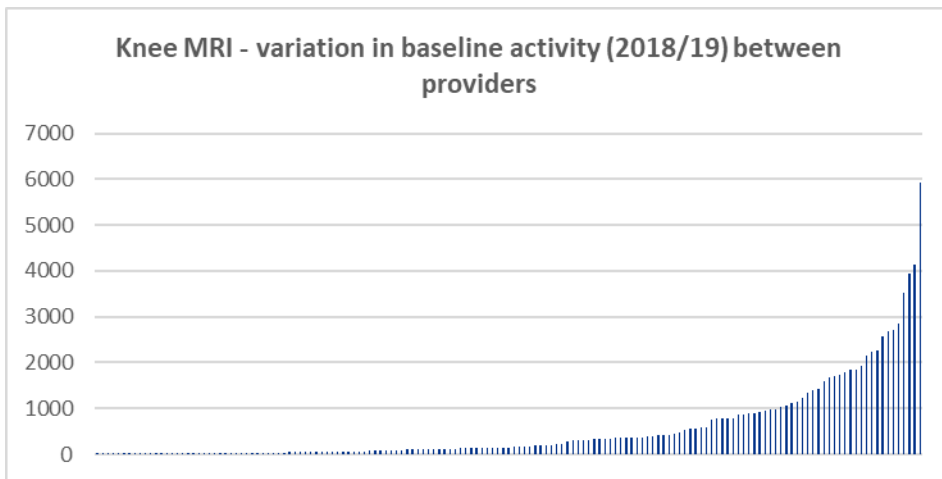
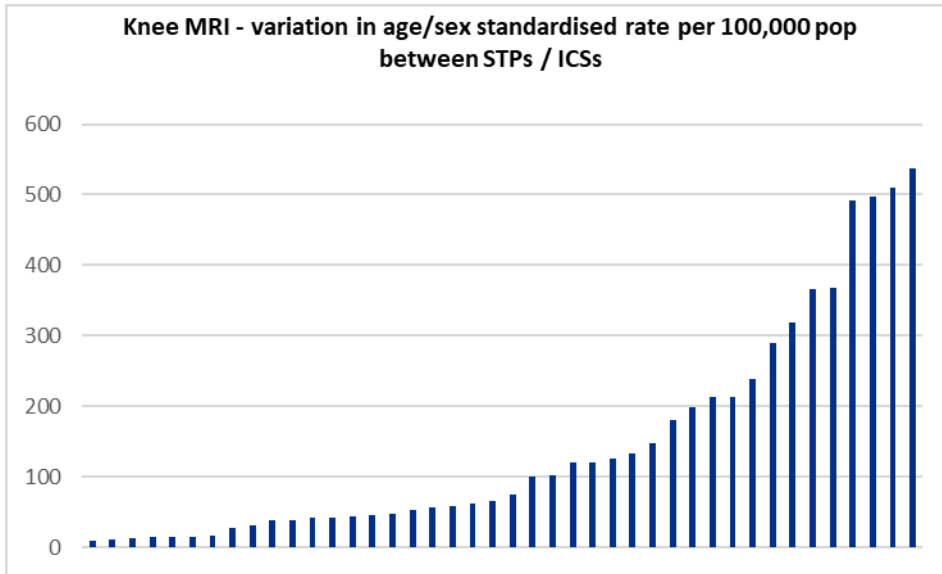
S - Low back pain imaging



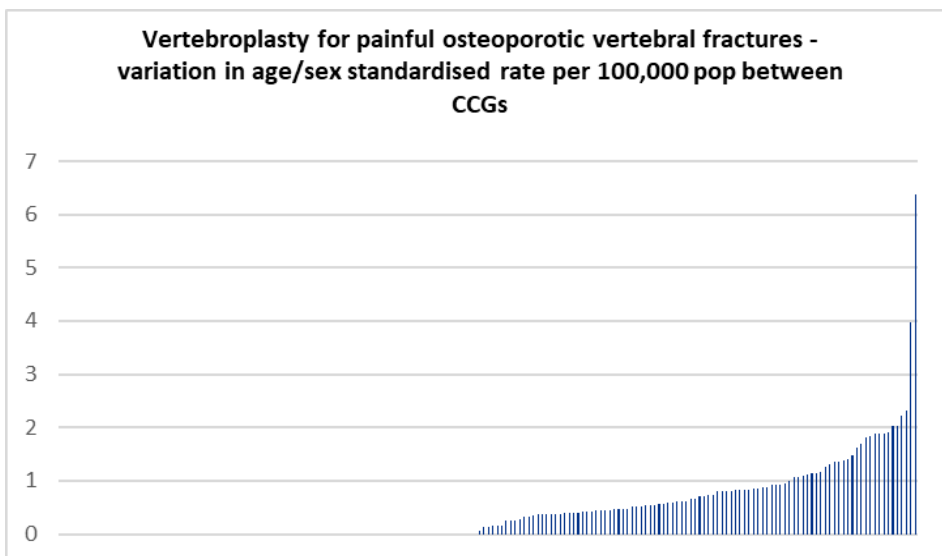


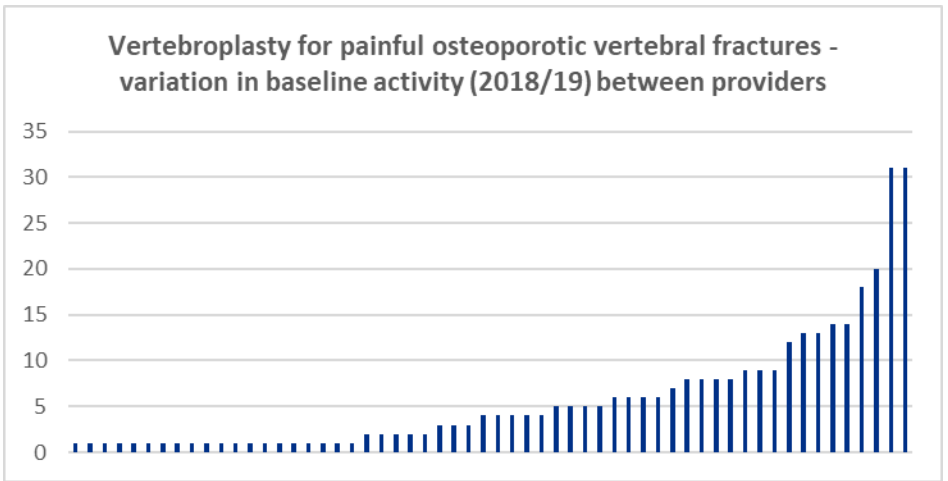
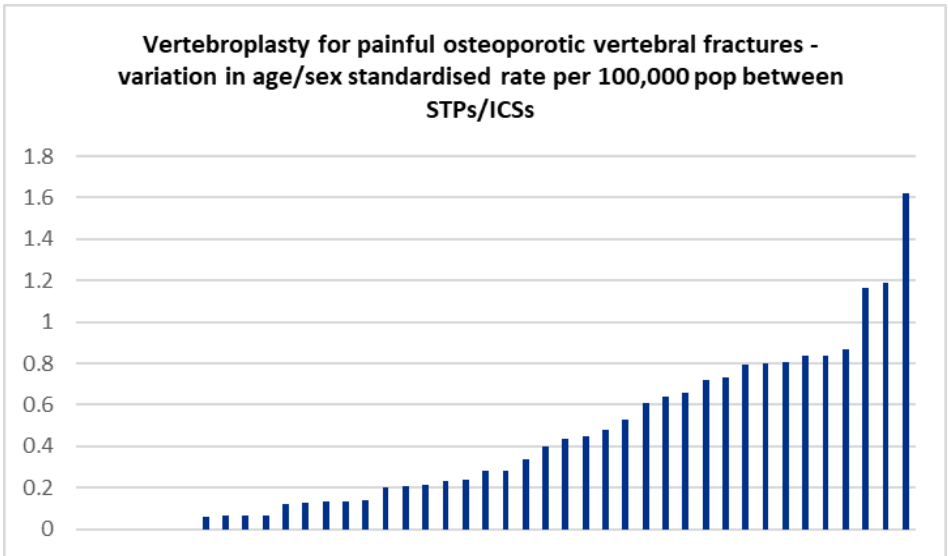
T - Knee MRI when symptoms are suggestive of osteoarthritis & U - Knee MRI for suspected meniscal tears



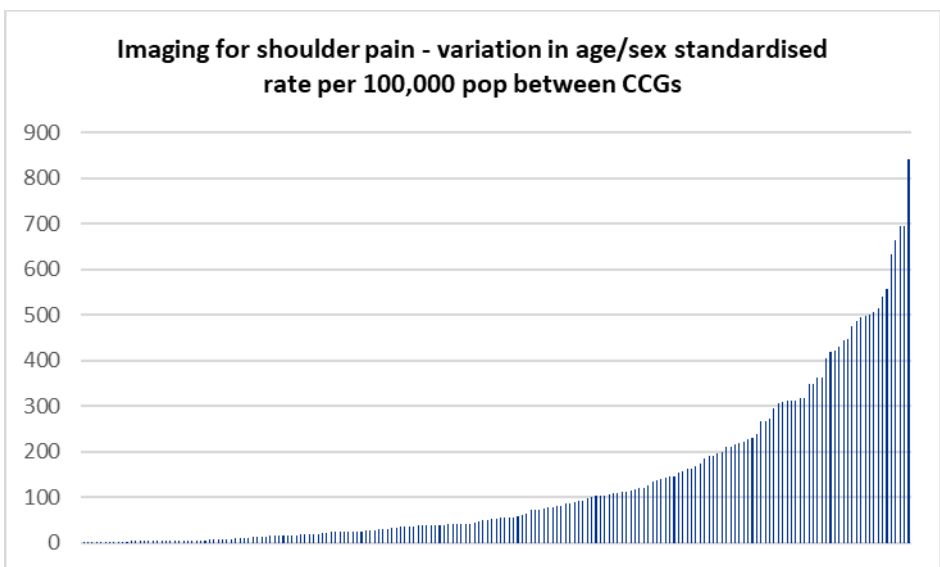


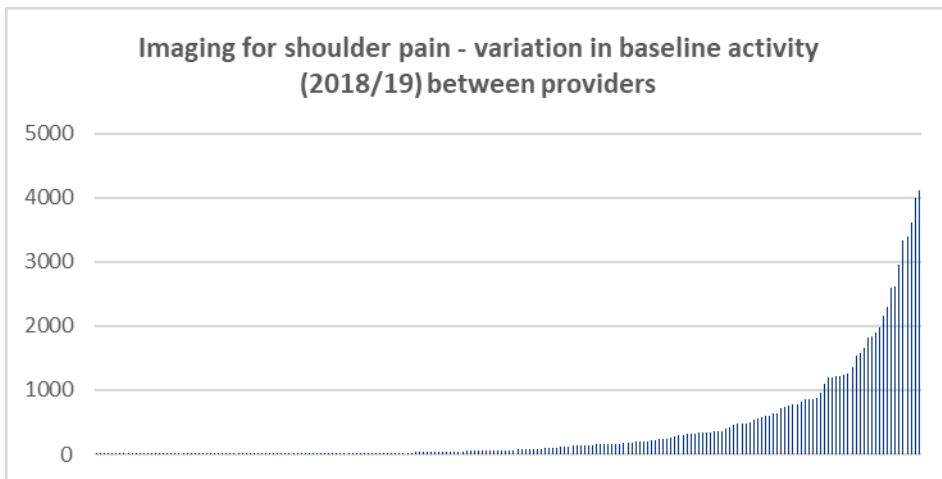
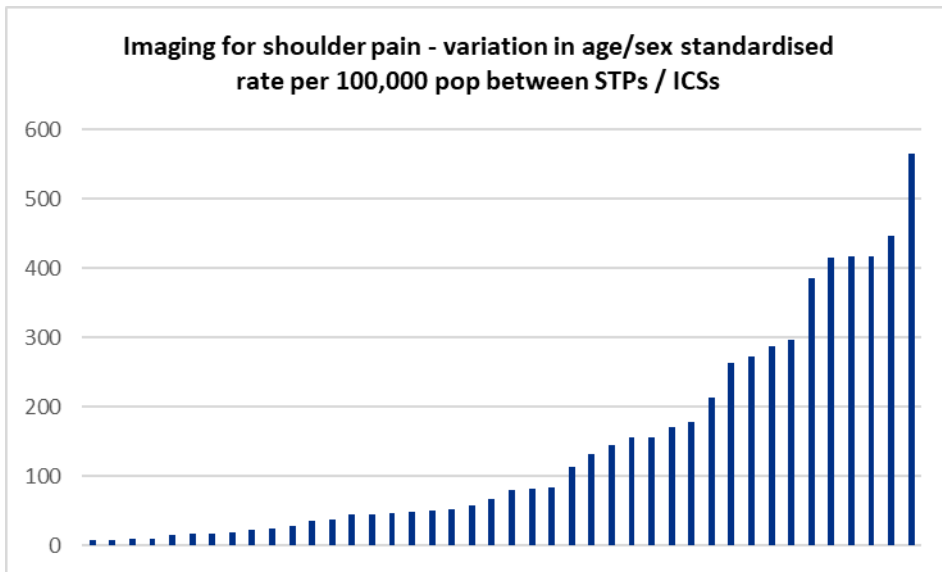
V - Vertebroplasty for painful osteoporotic vertebral fractures



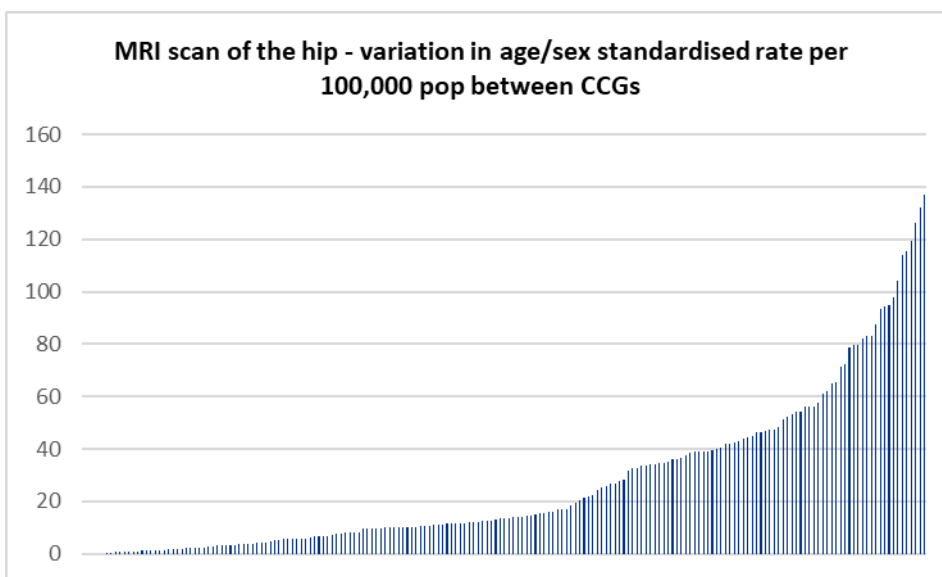


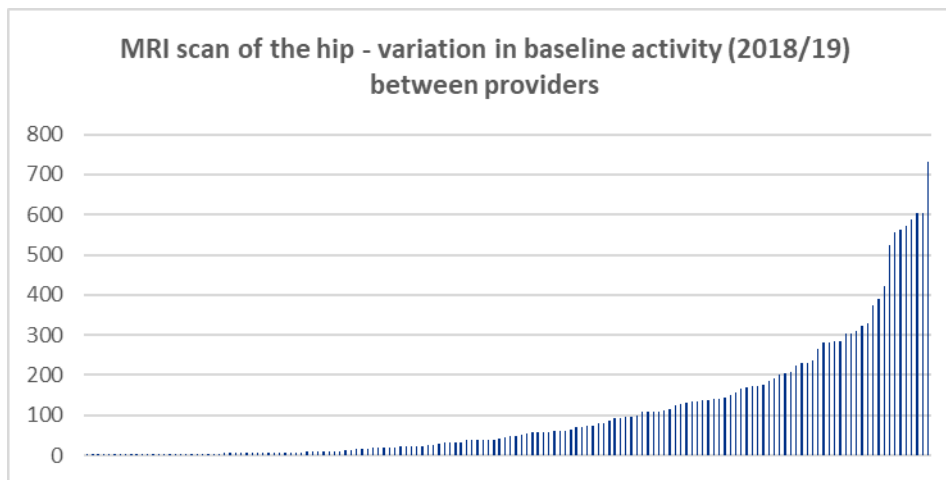
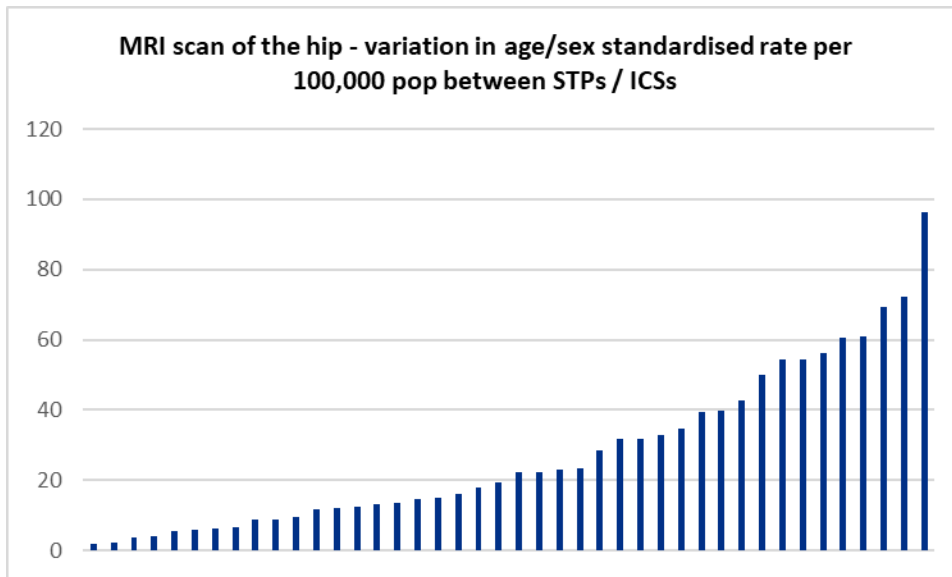
W - Imaging for shoulder pain



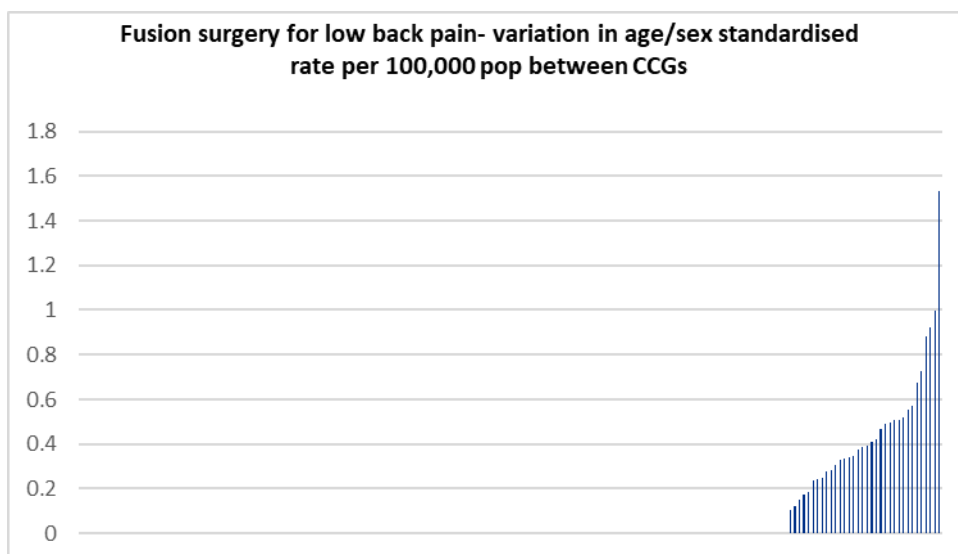


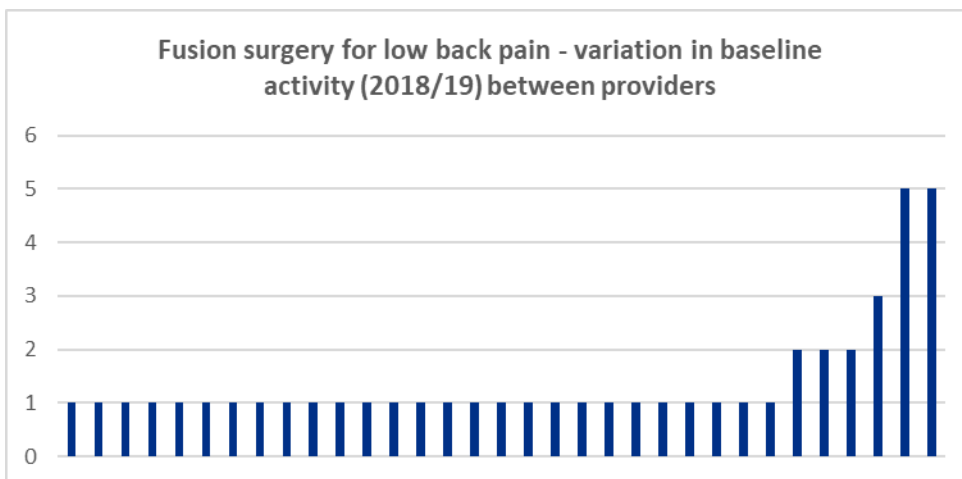
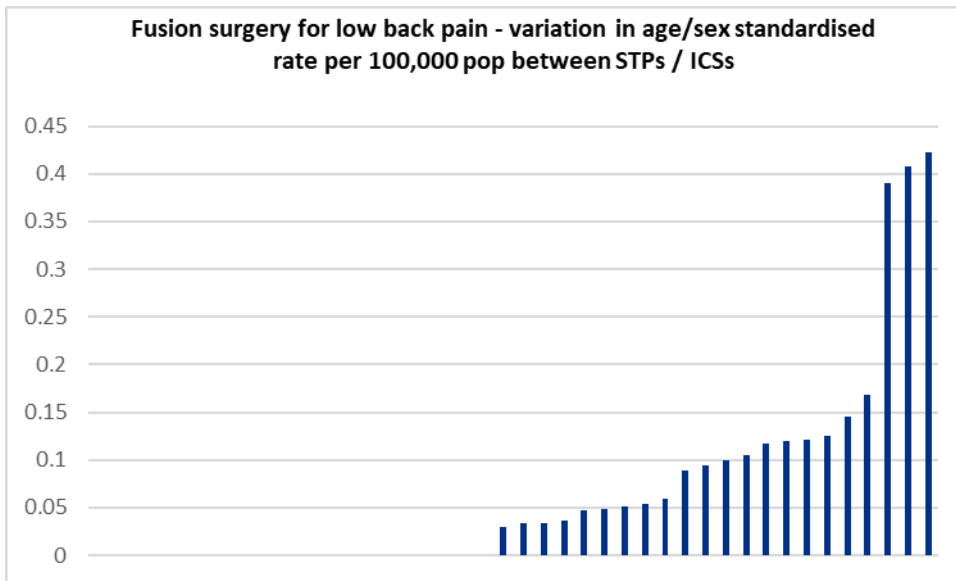
X - MRI scan of the hip for arthritis





Y - Fusion surgery for mechanical axial low back pain





Interventions where data are not currently available but propose including because best available evidence suggests interventions are clinically ineffective unless performed in certain circumstances. We will continue to explore additional datasets and collaborate with the wider system to identify opportunities to measure activity.

Z - Helmet therapy for treatment of positional plagiocephaly and brachycephaly in children

Numbers for this intervention are too low to produce a variation chart.

AA - Pre-operative chest x-ray

We have been unable to identify clinical codes or produce activity figures for this intervention.

BB - Preoperative ECG

We have been unable to identify clinical codes or produce activity figures for this intervention.

CC - Prostate-specific antigen (PSA) test

We have been unable to identify clinical codes or produce activity figures for this intervention.

DD - Liver function, creatinine kinase, and lipid level tests – (Lipid lowering therapy

We have been unable to identify clinical codes or produce activity figures for this intervention.

EE - Blood transfusion

We have been unable to identify clinical codes or produce activity figures for this intervention.

Appendix 8

Monthly spell data from January to April 2020

Monthly spell data [activity] for 31 proposed EBI interventions from January to April 2020

Intervention	Monthly spells				% reduction in spells (Apr 20 vs. Jan 20)
	Jan 20	Feb 20	Mar 20	Apr 20	
Proposed EBI Interventions where data are sufficiently robust⁴⁸ to determine rates of variation and outline proposed activity goals.					
A. Diagnostic angiogram should not be used as first-line investigation for low risk, stable chest pain	1,939	1,776	1,419	482	75%
B. Repair of minimally symptomatic inguinal hernia is not indicated	4,448	4,329	2,734	68	98%
C. Surgical intervention for chronic sinusitis is rarely indicated	342	335	197	1	100%
D. Removal of the adenoids is rarely indicated	124	135	77	0	100%
E. Arthroscopic surgery for meniscal tears should be performed following the published BASK clinical guidelines	2,926	2,725	1,816	53	98%
F. Troponin testing should only be used for diagnosis of acute coronary syndrome where indicated	64,455	59,007	50,268	47,621	26%
G. Shockwave lithotripsy (SWL) or surgical intervention for treatment for kidney stones should only be offered according to this guidance	1,191	1,091	960	436	63%
H. Cystoscopy for men with uncomplicated lower urinary tract symptoms (LUTS) should only be offered when clinically indicated according to this guidance	4,118	4,077	3,146	873	79%
I. Surgical intervention for Benign Prostatic Hypertrophy should only be offered according to this guidance	1,225	1,239	829	32	97%
J. Discectomy is only recommended in carefully selected patients according to this guidance	227	223	159	48	79%
K. Radiofrequency facet joint denervation is rarely indicated	134	127	51	0	100%
L. Exercise ECG is not recommended for screening for coronary heart disease	3,690	3,233	2,197	244	93%
M. Upper GI endoscopy should not be used as first-line for investigation of suspected gastrointestinal disease	1,865	1,758	1,172	93	95%
Sub-Total for this category	86,684	80,055	65,025	49,951	42%
Monthly Baseline (2018/19)	71,604	71,604	71,604	71,604	

⁴⁸ In general, the procedure and diagnostic codes have been identified and therefore deemed robust enough to determine rates and goals. However, there are certain limitations unique to each intervention.

Monthly Reduction Goal	41,763	41,763	41,763	41,763	
% monthly goal achieved	-51% <i>(monthly activity is higher than monthly baseline)</i>	-28% <i>(monthly activity is higher than monthly baseline)</i>	22%	73%	
Proposed EBI interventions including those in diagnostic and outpatient settings where data are available but further exploration of additional datasets is proposed.⁴⁹					
N. Colonoscopy should only be offered to at risk people identified through risk stratification ⁵⁰	39,270	38,547	29,177	1,326	97%
O. Surveillance colonoscopy should only be offered to at risk people identified through risk stratification					
P. Early endoscopic retrograde cholangiopancreatography (ERCP) is not indicated for investigation of acute gallstone pancreatitis without cholangitis	23	21	19	20	13%
Q. Cholecystectomy should be considered on the same admission as acute cholecystitis or gallstone pancreatitis	181	134	143	20	89%
R. Appendicitis should be confirmed prior to appendectomy. Where imaging is indicated in some patients, with ultrasound as first-line, followed by CT or MRI as appropriate	3,964	3,579	3,120	1,604	60%
S. Imaging for low back pain is rarely indicated	19,671	19,754	15,118	3,771	81%
T. Knee MRI should not be used to diagnose osteoarthritis	5,358	5,800	4,426	800	85%
U. Knee MRI should not be used to diagnose meniscal tears					
V. Vertebroplasty should not be routinely offered for painful osteoporotic vertebral fractures	22	23	11	0	100%
W. Imaging for shoulder pain should be offered under the guidance of shoulder specialists where possible	5,291	5,192	3,728	549	90%
X. MRI scan of the hip for arthritis is not indicated	1,095	1,117	830	172	84%
Y. Spinal fusion is not indicated for the treatment of non-specific, mechanical back pain	1	4	5	0	100%
Sub-Total for this category	74,876	74,171	56,577	8,262	89%
Proposed EBI interventions where data are not currently available but propose including because best available evidence suggests interventions are clinically ineffective unless performed in certain circumstances.					
Z. Helmet therapy is not recommended in the treatment of non-synostotic/ positional plagiocephaly and brachycephaly in babies	See footnotes ^{51 52}	N/A	N/A	N/A	N/A
AA. Routine pre-operative chest X-ray is not indicated	N/A	N/A	N/A	N/A	N/A
BB. Routine pre-operative electrocardiogram is not indicated	N/A	N/A	N/A	N/A	N/A
CC. PSA testing in asymptomatic men is not recommended	N/A	N/A	N/A	N/A	N/A

⁴⁹ For these intervention data, procedure coding is available however diagnosis and indication coding is either partial or has limitations therefore it was inappropriate to calculate goals for these interventions.

⁵⁰ This number represents colonoscopies for all indications, including those with symptoms and/or risk factors. This is an estimate of colonoscopies for at risk patients and an estimate of colonoscopies for surveillance, both of which this guidance relates to.

⁵¹ Interventions with fewer than 300 episodes per annum are considered too low to set an activity goal.

⁵² For interventions with fewer than 10 episodes during 2018/19, the number was not included.

DD. Blood analysis for patients taking lipid lowering therapy should be performed in accordance with this guidance	N/A	N/A	N/A	N/A	N/A
EE. Red blood cell (RBC) transfusions should only be given where indicated and then in single-units unless there are exceptional circumstances	N/A	N/A	N/A	N/A	N/A
Grand Total	161,560	154,226	121,602	58,213	64%

Academy of Medical Royal Colleges

10 Dallington Street
London
EC1V 0DB
United Kingdom

Telephone: +44 (0)20 7490 6810
Email: academy@aomrc.org.uk
Website: aomrc.org.uk

Registered Charity Number:
1056565

© Academy of Medical Royal Colleges 2020
