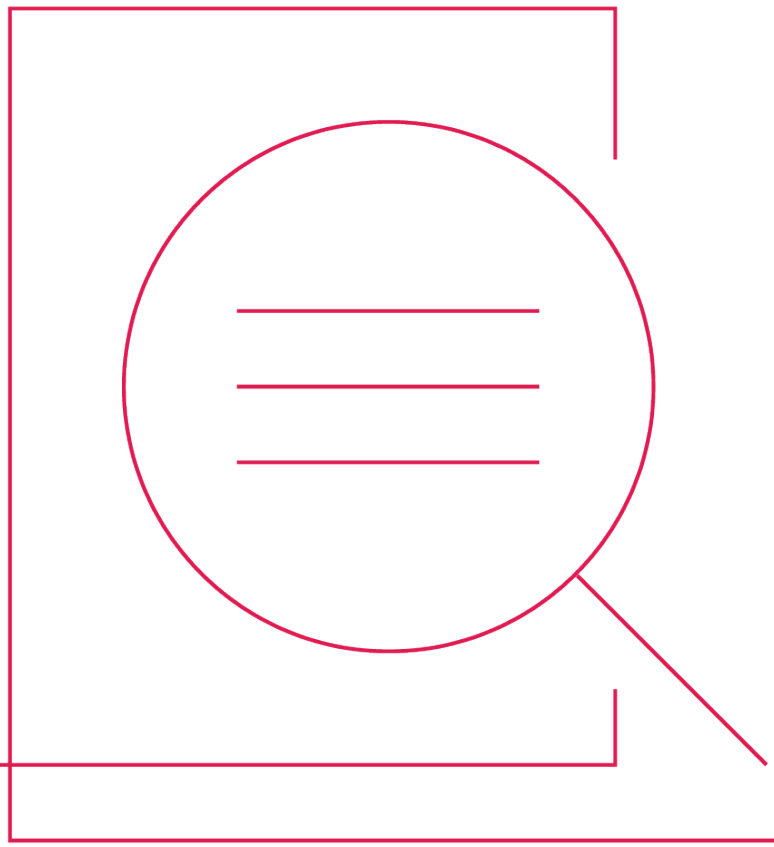
Academy of Medical Royal Colleges

November / 2020

Evidence-Based Interventions

Proposed List 2

By the independent Expert Advisory Committee to the Evidence-Based Intervention programme



Evidence-Based Interventions

Proposed List 2

First published: November 2020

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

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Contents

Foreword

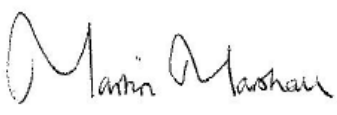
The pause in elective care caused by the COVID-19 pandemic has had a significant impact on waiting lists across the country. High quality evidence-based care must remain a priority and, as the health and social care system treats patients in the COVID-19 environment and as treatments are rescheduled, it is critical that clinicians' time is freed from providing inappropriate care to focus on providing effective care to people who need it.

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.

The Independent Expert Advisory Committee (the Committee) has led on developing a list of evidence-based interventions (EBI) to supplement the 17 interventions published in November 2018. Working in collaboration with the Medical Royal Colleges and sub-speciality groups, commissioners and providers, and patients and patient representative groups, the Committee identified 31 evidence-based interventions to form EBI list 2.

The Committee is pleased to make these recommendations, which add to the original list, particularly at a time when the importance of this work is so great.

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

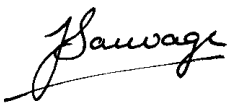
Dr Paul Chrisp

Professor Adam Elshaug

Pam Essler

Professor Danny Keenan

Dr Ash Paul

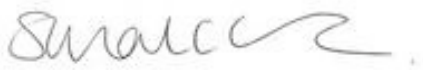


Dr Josephine Sauvage

Dr Catherine Tompson

April Wareham

Dr Tim Wilson



Dr Sarah Clarke

Introduction

In 2018, the Evidence-Based Interventions (EBI) programme was established as a joint and rolling enterprise between four national partners: the Academy of Medical Royal Colleges (the Academy), NHS Clinical Commissioners (NHS CC), the National Institute for Health and Care Excellence (NICE) and NHS England and Improvement (NHS E/I).

Clinical evidence is the foundation of the programme and, to reflect this, a new, independent Expert Advisory Committee (the Committee) was established in May 2019 tasked to expand the programme. 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. Its membership comprises clinicians, policy advisors, commissioners, patients, data experts and academics.

In 2019 the Committee drew up a list of tests, treatments and procedures. The intention is to provide guidance for an additional set of interventions to supplement the programme's initial list of 17 interventions published in November 2018. The proposed tests, treatments and procedures were selected because:

- The best available evidence suggests that they are potentially ineffective, inappropriate or can do more harm than good; and/or
- They have been superseded by other, more effective treatments.

In providing independent advice and guidance to the EBI programme, the Committee maintains the aims of the programme 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 evidence-based 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.

In July 2020, the Expert Advisory Committee ran a public engagement exercise hosted by the Academy of Medical Royal Colleges (the Academy). Further details on the engagement process can be found in Appendix 2.

This report details the proposed guidance for 31 interventions which is supported by the Medical Royal Colleges, specialist societies, clinical commissioners and patient representatives, and makes several recommendations to the EBI programme board including suggested method for publication and dissemination of the guidance and next steps for implementation.

The Independent Expert Advisory Committee and its approach

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'.[1]

The independent Expert Advisory Committee (the Committee) was established by the four partners of the EBI programme in May 2019. The Committee's roles include:

- Recommending a list of interventions that are available on the NHS and which 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;
- Drafting clinical guidance based on rigorous evidence and balanced consensus amongst patients, clinicians and commissioners;
- Facilitating a public and system consultation on the guidance and incorporating 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;
- Maximising the implementation of evidence-based guidance to reduce unnecessary and inappropriate interventions; and
- Supporting the EBI programme, including public engagement, as appropriate.

In 2019 the Committee agreed its approach and methodology to meet its mandate (see Appendix 3 for the Committee's terms of reference). Using its agreed approach, the Committee identified an initial long-list of interventions from clinical evidence including NICE guidance, Choosing Wisely recommendations,[2] academic studies and CCGs' policies on

1. General Medical Council Good Medical Practice

2. Evidence includes NICE Cost Saving Guidance
   NICE Technology Appraisal Guidance
   Choosing Wisely UK
   Choosing Wisely Canada
   Choosing Wisely Australia

Procedures of Limited Clinical Effectiveness (PoLCE) collated through NHS Clinical Commissioners, 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 that was run 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.

The Committee deliberated each test, treatment and procedure before drafting guidance in collaboration with stakeholders including clinicians, commissioners and patients. It took particular note of:

- Advice from clinicians, clinical commissioners, professional leaders and charities as well as Medical Royal Colleges and specialist societies (see table below)
- Opinions from patients by liaising with individual 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; and
- 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.

Over the past year, the Committee agreed on the 31 interventions and guidance for each of the interventions was developed in collaboration with the stakeholders outlined above, including expert clinicians. The Committee conducted a public engagement exercise between 13 July to 24 August 2020. This was completed virtually to accommodate the extraordinary times we are living in and allowed the EBI programme to more rapidly support the work of the NHS as it attempted to restore elective services. This engagement also served to gain final consensus and support from the public, Medical Royal Colleges, the appropriate specialist societies, clinicians and patients.

Respondents had the opportunity to submit written responses and/or join one of the eight webinar sessions ran by the Committee. This process consisted of a series of virtual sessions, which were attended by approximately 359 participants including patients, clinicians, commissioners and providers. Further detail, including the methodology and results of this engagement can be found in Appendix 2. The final clinical guidance and codes have been updated by the Committee accordingly, working closely and in collaboration with the relevant Medical

Royal Colleges and specialist societies who support the final version of the guidance.

Clinical stakeholder	Intervention
Medical Royal Colleges	
Royal College of Anaesthetists	Diagnostic coronary angiography for low risk, stable chest pain
	Electrocardiogram for asymptomatic patients undergoing low-risk non-cardiac surgery
	Excess blood transfusion
	Exercise ECG for screening for coronary artery disease or investigation of angina
	Pre-operative Chest X-ray
Royal College of General Practitioners	Appropriate Colonoscopy
	Arthroscopic surgery for meniscal tears
	Cystoscopy for men with uncomplicated lower urinary tract symptoms
	Exercise ECG for screening for coronary artery disease or investigation of angina
	Helmet therapy for treatment of positional plagiocephaly/ brachycephaly in children
	Imaging for low back pain
	Knee MRI for suspected meniscal tears
	Knee MRI when symptoms are suggestive of osteoarthritis
	Liver function, creatinine kinase and lipid level tests – (Lipid lowering therapy)
	MRI for shoulder pain
	MRI scan of the hip for arthritis
	Myocardial infarction (acute) (troponin testing)
	Prostate-specific antigen (PSA) test
	Removal of adenoids
	Repeat colonoscopy
	Upper GI endoscopy
	Repair of minimally symptomatic inguinal hernia
	MRI for shoulder pain
	Surgical intervention for benign prostatic hyperplasia
	Surgical intervention for chronic sinusitis
	Troponin test
Royal College of Paediatrics & Child Health	Helmet therapy for treatment of positional plagiocephaly/ brachycephaly in children
Royal College of Pathologists	Excess blood transfusion
Royal College of Physicians	All draft proposals approved through Committee member Dr Sarah Clarke, clinical VP of RCP
Royal College of Radiologists	Appendicectomy without confirmation of appendicitis
	Imaging for low back pain
	Pre-operative Chest X-ray
	Prostate-specific antigen (PSA) test
Royal College of Surgeons	All draft proposals approved through Committee member Professor Derek Alderson, President of RCS

Sub-specialty groups	
Association of Surgeons of Great Britain & Ireland	ERCP in acute gallstone pancreatitis without cholangitis
	Repair of minimally symptomatic inguinal hernia
	Upper GI endoscopy
Association of Upper Gastrointestinal Surgeons of Great Britain and Ireland (AUGIS)	Cholecystectomy
	ERCP in acute gallstone pancreatitis without cholangitis
	Repair of minimally symptomatic inguinal hernia
	Upper GI endoscopy
British Association for Paediatric Otolaryngology	Removal of adenoids
British Association for Surgery of the Knee	Arthroscopic surgery for meniscal tears
	Knee MRI for suspected meniscal tears
	Knee MRI when symptoms are suggestive of osteoarthritis
British Association of Perinatal Medicine	Helmet therapy for treatment of positional plagiocephaly/ brachycephaly in children
British Association of Otorhinolaryngology (ENT UK)	Removal of adenoids
	Surgical intervention for chronic sinusitis
British Association of Spine Surgeons	Discectomy
	Fusion surgery for mechanical axial low back pain
	Imaging for low back pain
	Radiofrequency facet joint denervation
	Vertebroplasty for painful osteoporotic vertebral fractures
British Association of Urological Surgeons	Cystoscopy for men with uncomplicated lower urinary tract symptoms
	Prostate-specific antigen (PSA) test
	Surgical intervention for benign prostatic hyperplasia
	Surgical removal of kidney stones
British Blood Transfusion Society	Excess blood transfusion
British Cardiology Society	Diagnostic coronary angiography for low risk, stable chest pain
	Electrocardiogram for asymptomatic patients undergoing low-risk non-cardiac surgery
	Exercise ECG for screening for coronary artery disease or investigation of angina
	Liver function, creatinine kinase and lipid level tests – (Lipid lowering therapy)
	Myocardial infarction (acute) (troponin testing)
British Elbow and Shoulder Society	Imaging for shoulder pain
British Hip Society	MRI scan of the hip for arthritis
British Medical Ultrasound Society	Appendicectomy without confirmation of appendicitis
British Orthopaedic Association	Arthroscopic surgery for meniscal tears
	Discectomy
	Fusion surgery for mechanical axial low back pain
	Imaging for low back pain
	Knee MRI for suspected meniscal tears
	Knee MRI when symptoms are suggestive of osteoarthritis
	MRI scan of the hip for arthritis
	Radiofrequency facet joint denervation
	Vertebroplasty for painful osteoporotic vertebral fractures

British Society of Cardiovascular Imaging and British Society of Cardiac Computed Tomography	Diagnostic coronary angiography for low risk, stable chest pain
British Society of Gastroenterologists	Repeat colonoscopy
	Unnecessary colonoscopy
	Upper GI endoscopy
British Society of Gastrointestinal and Abdominal Radiology	Appendicectomy without confirmation of appendicitis
British Society of Haematology	Excess blood transfusion
British Society of Interventional Radiology	Surgical removal of kidney stones
British Society of Thoracic Imaging	Pre-operative Chest X-ray
Craniofacial Society of Great Britain and Ireland	Helmet therapy for treatment of positional plagiocephaly/ brachycephaly in children
Great Britain and Ireland Hepato Pancreato Biliary Association (same personnel as AUGIS)	Cholecystectomy
	ERCP in acute gallstone pancreatitis without cholangitis
	Repair of minimally symptomatic inguinal hernia
	Upper GI endoscopy
Faculty of Pain Medicine	Discectomy
	Imaging for low back pain
	Radiofrequency facet joint denervation
Pancreatic Society of Great Britain and Ireland (same as AUGIS)	Cholecystectomy
	ERCP in acute gallstone pancreatitis without cholangitis
	Repair of minimally symptomatic inguinal hernia
	Upper GI endoscopy
Society of British Neurological Surgeons	Discectomy
	Fusion surgery for mechanical axial low back pain
	Imaging for low back pain
	Helmet therapy for treatment of positional plagiocephaly/ brachycephaly in children
	Radiofrequency facet joint denervation
	Vertebroplasty for painful osteoporotic vertebral fractures

The proposed clinical guidance

The final version of the clinical criteria can be found in Appendix 1, while tables detailing the changes made following the national engagement can be found in Appendix 2. Specific coding and data feedback received is also outlined in Appendix 2, along with updates made as a result. The following table provides a summary of the guidance for the 31 interventions.

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

	Test, treatment or procedure	Recommendation	Summary
Cardiology – caring for the heart			
2A	Diagnostic coronary angiography for low risk, stable chest pain	*Diagnostic angiogram should not be used as first-line investigation for low risk, stable chest pain*	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. **There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society.**

General Surgery			
2B	Repair of minimally symptomatic inguinal hernia	*Repair of minimally symptomatic inguinal hernia is not indicated*	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 hernia repair for minimally symptomatic hernia. 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. **There was agreement with the clinical criteria for this intervention, including from the Royal College Surgeons of England.**
ENT – surgery on the ear, nose and throat			
2C	Surgical intervention for chronic rhinosinusitis	*Surgical intervention for chronic rhinosinusitis should only be considered after failed medical therapy or should a significant complication occur*	Endoscopic sinus surgery should only be considered when appropriate medical treatment has failed. Patients should have had a full secondary care assessment as set out in the detailed guidance (1.1.3 C) and undergo shared decision making regarding the benefits and risks of surgery. 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. First-line treatment for sinusitis is with appropriate medical therapy that should include intranasal steroids and nasal saline irrigation. In the case of Chronic Rhinosinusitis with Nasal Polyposis (CRSwNP) a short course of oral steroids should also be considered.

			There was agreement with the clinical criteria for this intervention, including from the ENT UK and the British Rhinological Society.
2D	Removal of adenoids for treatment of glue ear	*Adjuvant adenoidectomy for treatment of glue ear is not normally recommended alongside initial grommet insertion*	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. Adenoidectomy is indicated in some children as described in the detailed guidance (1.1.1 D), for example, where the child also has persistent and/or frequent nasal obstruction or obstructive sleep apnoea which is attributable to enlarged adenoids. This guidance supplements the existing guidance on grommets for glue ear in children. **There was agreement with the clinical criteria for this intervention, including from the ENT UK.**
Orthopaedics – caring for bones and joints			
2E	Arthroscopic surgery for meniscal tears	*Arthroscopic surgery for meniscal tears should be performed following the published BASK clinical guidelines*	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. 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 that persist for three months where a diagnosis of unstable meniscal tear has been proven on an MRI scan to confirm diagnosis of unstable meniscal tear. Arthroscopic meniscectomy carries a small risk of serious complications including of infection and deep vein thrombosis. **There was agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association and British Association for Surgery of the Knee.**
Blood tests			
2F	Specialised blood tests (troponin) for investigation of chest pain	*Troponin blood testing should be used to diagnose acute myocardial infarction only where a clinical diagnosis of acute coronary syndrome or myocarditis is suspected or for prognosis in pulmonary embolism*	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 or myocarditis is suspected or for prognostic purposes when pulmonary embolism is confirmed. Where troponin tests are used for indications other than suspected acute coronary syndrome or myocarditis, they are rarely associated with cardiac disease, cause unnecessary investigations and increase length of hospital stay. **There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society.**
Urology – caring for the parts of the body that make urine			
2G	Surgical removal of kidney stones	*Shockwave lithotripsy [SWL] or surgical intervention for treatment for kidney stones should only be offered according to this guidance*	The optimal management of kidney stones depends on the type, size and location of the stone as well as patient factors such as comorbidity and pregnancy. 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. **There was agreement with the clinical criteria for this intervention, including from the British Association of Urological Surgeons.**
2H	Camera test of the bladder in men	*Cystoscopy for men with uncomplicated lower urinary tract symptoms (LUTS) should only be offered according to this guidance*	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. 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. **There was agreement with the clinical criteria for this intervention, including from the British Association of Urological Surgeons.**
2I	Surgery for enlarged prostate	*Surgical intervention for Benign Prostatic Hypertrophy should only be offered according to this guidance*	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. Men considering surgical intervention should be counselled thoroughly regarding alternatives to and outcomes from surgery.

			There was agreement with the clinical criteria for this intervention, including from the British Association of Urological Surgeons.
Back pain treatment – caring for the back			
2J	Spinal surgery for a slipped disc	*Lumbar discectomy is only recommended in carefully selected patients according to this guidance*	Discectomy should only be offered to patients with compressive nerve root signs and symptoms lasting three months (except in severe cases) 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. Primary care management typically includes reassurance, advice on continuation of activity with modification, weight-loss, analgesia, manual therapy and screening patients who are high risk of developing chronic pain (i.e. STaRT Back). **There was agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, British Association of Spine Surgeons and Royal College of Radiologists.**
Orthopaedics – caring for bones and joints			
2K	A procedure to numb nerves for low back pain	*Radiofrequency facet joint denervation is not always indicated for management of low back pain*	Lumbar 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 very rarely nerve or spinal cord damage. Manual therapy, with appropriate psychological therapies where necessary, should be considered as an early intervention to support the individual.

			There was agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, British Association of Spine Surgeons and Royal College of Radiologists.
Cardiology – caring for the heart			
2L	Treadmill test for heart disease	*Exercise lectrocardiogram (ECG) is not recommended for screening for coronary heart disease*	Exercise ECG should not be used for screening asymptomatic and low risk patients for coronary heart disease 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. **There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society.**
Gastroenterology – care of the digestive system			
2M	Endoscopy to investigate gut problems	*Upper GI endoscopy should not be used as first-line for investigation of suspected gastrointestinal disease*	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 of 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. **There was agreement with the clinical criteria for this intervention, including from the British Society of Gastroenterology.**

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			
2N	Colonoscopy of the lower intestine	*Colonoscopy should only be offered to people identified in accordance with the British Society of Gastroenterology guidelines*	Follow the British Society of Gastroenterology colonoscopy surveillance guidelines for colonoscopy in the management of hereditary colorectal cancer. Colonoscopy should 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. Colonoscopy is an invasive procedure which carries a small risk of serious complications, for example intestinal perforation. **There was agreement with the clinical criteria for this intervention, including from the British Society of Gastroenterology.**
20	Follow up colonoscopy of the lower intestine	*Colonoscopy should only be offered to people identified in accordance with the British Society of Gastroenterology guidelines*	Follow the British Society of Gastroenterology colonoscopy surveillance guidelines for post-polypectomy and post-colorectal cancer resection. Surveillance colonoscopy is not always recommended following resection of colorectal lesions. Colonoscopy is an invasive procedure which carries a small risk of serious complications, for example intestinal perforation. Instead, risk stratification is recommended to identify patients who require follow up colonoscopy. **There was agreement with the clinical criteria for this intervention, including from the British Society of Gastroenterology.**

General surgery – operations on the stomach and intestines			
2P	Test of the gallbladder	*Early endoscopic retrograde cholangiopancreatography (ERCP) is not indicated for investigation of acute gallstone pancreatitis without cholangitis*	Early ERCP should not be used in the investigation of acute gallstone pancreatitis where there is evidence of cholangitis or obstructive jaundice with imaging evidence of a stone in the common bile duct. ERCP is a highly invasive procedure and includes the risks associated with ERCP such as pancreatitis and bleeding. Clinical observation is instead recommended as many gallstones are passed spontaneously. If there is clinical deterioration, delayed ERCP may be indicated. **There was agreement with the clinical criteria for this intervention, including from the British Society of Gastroenterology.**
2Q	Removal of an inflamed gallbladder	*Cholecystectomy should be considered on the same admission as acute cholecystitis or gallstone pancreatitis*	In patients with acute cholecystitis or mild 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%. **There was agreement with the clinical criteria for this intervention, including from the Royal College of Surgeons of England.**
2R	Tests to confirm appendicitis	*Appendicitis should be confirmed prior to appendicectomy. Where imaging is indicated,*	Where patients present with symptoms of appendicitis, imaging can be considered after clinical history, physical exam and blood analysis. Imaging can be helpful in deciding which

		ultrasound should be considered first-line, followed by CT or MRI as appropriate	patients can be managed conservatively. 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) and can be used after an equivocal ultrasound. MRI can be considered if CT is contraindicated, where this specialist service is available, it is particularly useful for pregnant patients. Appropriate imaging in line with this guidance can reduce unnecessary surgery and associated complications. **There was agreement with the clinical criteria for this intervention, including from the Royal College of Surgeons of England.**
Orthopaedics – caring for bones and joints			
2S	Tests to investigate low back pain	*Imaging for low back pain is rarely indicated*	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 manual therapy and weight-loss are recommended. **There was agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, British Association of Spine Surgeons and Royal College of Radiologists.**

2T & 22U	Tests to investigate knee pain	*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*	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 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 intraarticular injections. If imaging is required to confirm the diagnosis of osteoarthritis, weight-bearing radiographs should be the first-line investigation. Patients treated in primary care or a MSK referral hub, with persistent arthritic or mechanical knee symptoms unresponsive to initial NICE based core treatment, should be referred to secondary care. In intermediate or secondary care weight-bearing radiographs are the first-line of investigation if osteoarthritis is suspected. If radiographs show minimal change, then an MRI scan of the knee should be used to investigate for early arthritis, isolated cartilage lesions, osteonecrosis or other pathology. **There was agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association and British Association for Surgery of the Knee.**

2V	Procedures to build up brittle spine bones	*Vertebral augmentation (vertebroplasty or kyphoplasty) should be offered as a treatment for painful osteoporotic vertebral fractures on a case-by-case basis*	Vertebral augmentation, (vertebroplasty (VP) or kyphoplasty (KP) should be offered as a treatment for painful osteoporotic vertebral fractures on a case-by-case basis. Vertebral augmentation is considered to be safe, however as with any medical procedures there are some associated risks including cement leakage which in rare cases can potentially cause pulmonary embolism, and nerve or cord compression as well as haemorrhage, infection, rib or sternal fracture or haemo- or pneumothorax. **There was agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, British Association of Spine Surgeons and Royal College of Radiologists.**
2 W(i)	Scans for shoulder pain	*Scans for shoulder pain during routine care should only be offered under the guidance of a secondary care shoulder service*	X-rays remain the first line of radiological investigation for the diagnosis of most shoulder pain in primary, intermediate and secondary care. The use of Ultrasound, MRI and CT scanning is recommended only by the appropriate secondary care services. Their use in primary and intermediate care should only be offered if referral pathways have been developed with the local specialist shoulder service. **There was agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, British Association of Spine Surgeons and Royal College of Radiologists.**

2 W(ii)	Image guided injections for shoulder pain	*Image guided shoulder injections should only be offered under the guidance a secondary care shoulder service*	Image guided injections into the subacromial space are no longer recommended Other image guided shoulder injections should only be offered under the guidance of a secondary care shoulder service. **There was agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, British Association of Spine Surgeons and Royal College of Radiologists.**
2X	MRI scan of the hip for arthritis	*MRI scan of the hip for arthritis is not indicated*	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. Requesting MRI scans can cause unnecessary anxiety and prolongs waiting times for patients. It can also delay MRI scans for patients with diagnoses other than OA of the hip. **There was agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, British Association of Spine Surgeons and Royal College of Radiologists.**
2Y	Surgery to fuse the bones in the back for back pain	*Spinal fusion is not indicated for the treatment of non-specific, mechanical back pain*	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.

			Primary care management typically includes reassurance, advice on continuation of activity with modification, weight-loss, analgesia, manual therapy, and screening patients who are high risk of developing chronic pain (i.e. STaRT Back). **There was agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, British Association of Spine Surgeons and Royal College of Radiologists.**

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			
2Z	Helmets to reshape flat heads in babies	*Helmet therapy is not recommended in the treatment of non-synostotic/ positional plagiocephaly and brachycephaly in babies*	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. Instead, pressure can be reduced on the flattened head by changing baby's position while awake. **There was agreement with the clinical criteria for this intervention, including from the Royal College of Paediatrics and Child Health.**
Anaesthetics – care before, during and after operations			
2AA	Chest X-ray before an operation	*Routine pre-operative chest X-ray is not indicated*	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. Pre-operative chest X-rays are appropriate in specific circumstances, for example people undergoing cardiac or thoracic surgery. **There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society.**
2BB	Heart tracing (ECG) before an operation	*Routine preoperative electrocardiogram (ECG) is not indicated*	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 intensive and may cause anxiety for patients, delays in treatment and further unnecessary investigation or treatment. Pre-operative ECGs are appropriate in specific circumstances, for example patients with a history of cardiovascular or renal disease, or diabetes. **There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society.**
Blood tests			
2CC	Prostate-specific antigen (PSA) testing	*Routine PSA testing in asymptomatic patients is not recommended in asymptomatic men that do not have risk factors associated with prostate cancer*	Routine PSA testing is not recommended in asymptomatic men that do not have risk factors associated with prostate cancer. 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. Where PSA testing is clinically indicated, for example for a man who is at high risk of prostate cancer including Black men or men with a family history

			of prostate cancer, or where a test is requested by the patient, there should first be a careful discussion, which allows for shared decision making, about the potential risks and benefits of PSA testing. **There was agreement with the clinical criteria for this intervention, including from the British Association of Urological Surgeons.**
2DD	Regular blood tests when taking cholesterol lowering tablets	*Blood analysis for patients taking lipid lowering therapy should be performed in accordance with this guidance*	Creatine Kinase Testing Routine monitoring of creatine kinase is not indicated in asymptomatic people who are taking lipid lowering therapy. Liver Function Testing Routine monitoring of liver function tests in asymptomatic people is not indicated after 12 months of initiating lipid lowering therapy. Lipid Testing Routine monitoring of lipid levels is not always indicated in asymptomatic people after three months of initiating lipid lowering therapy. Consider an annual non-fasting blood test for non-HDL cholesterol to inform discussion. **There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society.**
2EE	Blood transfusions	*Red blood cell (RBC) transfusions should only be given where indicated and then in single-units unless there are exceptional circumstance*	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 chronicanaemia.

			Restrictive thresholds do not apply to some patients as described in this guidance 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. **There was agreement with the clinical criteria for this intervention, including from the British College of Pathologists and the British Blood Transfusion Society.**

Measurement for the 31 interventions

A strength of the EBI programme is the ability to use data and measurement to drive improvement and guide implementation. For some of the interventions data is not available or not sufficiently robust to allow measurement. However, the Committee felt that, despite the data limitations, the best available clinical evidence is strong enough to make recommendations and guidance should be issued for all 31 proposed interventions.

The scope of this list of 31 interventions is broader than previous EBI guidance as it includes diagnostics, outpatients tests, and radiological interventions for example. The data robustness outside inpatient records is often limited. Data quality is less robust when monitored from outpatient and emergency care settings compared to in an inpatient setting. Where data quality is currently insufficient to accurately measure implementation, the Committee has proposed that the data be improved by working with experts in systems and the public in line with the programme's aim for continuous improvement.

In the context of the initial list of 17 interventions published in 2018, 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. The Committee recognises that some interventions may not be suitable for IFRs, for example, due to the urgency of clinical need or funding pathways.

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 data quality underpinning the two Category 1 interventions is limited. They do not lend themselves to the level of measurement established by the programme because specific diagnostic codes cannot be identified for either procedure, as such they are not suitable for tariff changes. Using IFRs to implement the guidance for these two procedures may be challenging.

In line with the aims and objectives of the programme to reduce patient harm, improve outcomes 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 for individual interventions 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. This population threshold for each individual intervention was explored through the national engagement exercise in summer 2020, however no new evidence was identified.

By identifying both procedure and diagnosis codes, we can measure sufficiently robust data for 12 interventions. In general, the procedure and diagnosis codes for these interventions 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. For these 12 interventions, a total of 901,275 spells of activity were performed in 2018/19 with a reduction opportunity of 199,938.

For 14 interventions (table 2B), procedure coding is available, however diagnosis and indication coding is either partial or has limitations therefore it was inappropriate to calculate reduction goals for these interventions. The total volume of activity for these interventions during the baseline year was 1,520,316 spells.

There are six interventions (table 2C) where data are currently not available. We will continue to explore additional datasets and collaborate with the wider system to identify opportunities to measure activity.

As part of its response to the Covid-19 pandemic, the NHS cancelled/ postponed many elective procedures. To contextualise the potential impact of EBI on elective care waiting lists, there would have been around 90,000 fewer EBI List 1 spells and around 250,000 fewer EBI List 2 inpatient spells in the period of Mar-20 to Feb-19 if the NHS overall were at the EBI programme goal. The overall proportion of spells that were for EBI interventions during the period of Mar-19 to Feb-20 was 12.8%, this means that the EBI goal is equivalent to a reduction of about 2.7% in all elective inpatient spells.

Tables 2A - C contain a summary of the data as well as the data quality issues for the 31 interventions. This data reflects the updated coding following feedback received during engagement.

Table 2A. Interventions where data are sufficiently robust[3] 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) [4]	Activity reduction opportunity (based on 25th percentile) [5]	Comments (including future actions to improve data / coding)
2A. 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.
2B. Repair of minimally symptomatic inguinal hernia is not indicated	54,764	92.2	1.5	8,168	Considered sufficiently robust to set a goal.
2C. Surgical intervention for chronic rhinosinusitis should only be considered after failed medical therapy or should a significant complication occur	12,610	21.2	1.7	2,388	Considered sufficiently robust to set a goal.
2D. Adjuvant adenoidectomy for treatment of glue ear is not normally recommended alongside initial grommet insertion	2,778	4.7	5.5	1,426	Considered sufficiently robust to set a goal.
2E. Arthroscopic surgery for meniscal tears should be performed following the published BASK clinical guidelines	38,088	64.1	2.4	8,964	Considered sufficiently robust to set a goal.
2G. Shockwave lithotripsy (SWL) or surgical intervention for treatment for kidney stones should only be offered according to this guidance	14,456[6]	24.3	2.1	3,092	Considered sufficiently robust to set a goal.

3. In general, the procedure and diagnostic codes have been identified and therefore deemed robust enough to determine rates and goals.
4. 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.
5. The activity reduction opportunity figure refers to the reduction in number of procedures required to reach the goal from the number of spells in2018/19.
6. This figure represents percutaneous nephrolithotomy and endoscopic extraction of calculus of kidney.

2H. Cystoscopy for men with uncomplicated lower urinary tract symptoms (LUTS) should only be offered according to this guidance	43,703	73.6	14.1	32,142	Considered sufficiently robust to set a goal, though due to the high rate of intervention at the 90th percentile, the 25th percentile-based reduction opportunity is large.
2I. Surgical intervention for Benign Prostatic Hypertrophy (BPH) should only be offered according to this guidance	14,561	24.5	2.2	4,363	Considered sufficiently robust to set a goal.
2J. Discectomy is only recommended in carefully selected patients according to this guidance	2,291	3.9	8.7	1,353	Considered sufficiently robust to set a goal
2K. Radiofrequency facet joint denervation is not always indicated for management of low back pain	1,612	2.7	23.2[7]	1,379	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.
2L. Exercise electrocardiogram (ECG) is not recommended for screening for coronary heart disease	45,745	77.0	13.4	45,745	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.
2M. Upper GI endoscopy should not be used as first-line for investigation of suspected gastrointestinal disease	644,038	1,084.1	1.6	81,391	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.
Sub-total – for this group of interventions	**901,275**	**—**	**—**	**199,938**	**—**

7. For this intervention, 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[8]

Description	No. of spells - 2018/19	Age / sex std rate per 100,000 – 2018/19	CCG Variation (n-fold)	Activity reduction opportunity (based on 25th percentile)	Comments (including future actions to improve data / coding)
2F. Troponin blood testing should be used to diagnose acute myocardial infarction only where a clinical diagnosis of acute coronary syndrome or myocarditis is suspected or for prognosis in pulmonary embolism	575,375	968.5	16.7	- [9]	Uses Emergency Care Data Set (ECDS) data. This is a relatively new data collection set with incomplete data reporting.
2N. Colonoscopy should only be offered to people identified in accordance with the British Society of Gastroenterology guidelines	415,262 [10]	699.0	1.6	—	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures. Exploring the option of using additional datasets.
2O. Colonoscopy should only be offered to people identified in accordance with the British Society of Gastroenterology guidelines					
2P. Early endoscopic retrograde cholangiopan-creatography (ERCP) is not indicated for investigation of acute gallstone pancreatitis without cholangitis	308	0.5	7.2[11]	—	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.
2Q. Cholecystectomy should be considered on the same admission as acute cholecystitis or gallstone pancreatitis	2,056	3.5	5.6	—	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures as figure appears low.

8. 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.

9. Troponin testing is part of the COVID-19 testing protocol when someone presents in emergency care and therefore it is inappropriate to set a threshold.

10. The number of interventions (415,262) represents colonoscopies for all indications, including those with symptoms and/or risk factors.

11. For this intervention, CCGs with zero activity were excluded in the n-fold (CCG variation calculation).

					This may not represent all cases of elective cholecystectomy following acute admission. Exploring longitudinal analysis to improve data.
2R. Appendicitis should be confirmed prior to appendicectomy. Where imaging is indicated, ultrasound should be considered first-line, followed by CT or MRI as appropriate	47,605 [12]	80.1	1.5	—	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 through DIDs data later this year.
2S. Imaging for low back pain is rarely indicated	253,956 [13]	427.5	50.6	—	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.
2T. Knee MRI should not be routinely used to initially investigate suspected osteoarthritis	80,315 [14]	135.2	107.4	—	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.
2U. Knee MRI should not be routinely used to initially investigate suspected meniscal tears					

12. This figure represents appendicectomies performed.

13. This figure includes US, MRI, CT and XR.

14. Currently there is no diagnostic data in outpatients so indication for knee MRI is not clear, therefore the number of interventions (80,315) represents the total number of knee MRIs (T - Knee MRI when symptoms are suggestive of osteoarthritis and U - Knee MRI for suspected meniscal tears).

2V. Vertebral augmentation (vertebroplasty or kyphoplasty) should be offered as a treatment for painful osteoporotic vertebral fractures on a case-by-case basis	303	0.5	7.6 [15]	—	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures. Figures appear low and are subject to further analysis.
2W(i). Scans for shoulder pain during routine care should only be offered under the guidance of a secondary care shoulder service.	128,809	216.8	82.4	—	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.
2W(ii). Image guided shoulder injections should only be offered under the guidance a secondary care shoulder service	2,934	4.9	43.4[16]	—	
2X. MRI scan of the hip for arthritis is not indicated	13,352	22.5	47.0	—	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.
Y. Spinal fusion is not indicated for the treatment of nonspecific, mechanical back pain	41 [17]	0.1	4.5 [18]	—	Unable to identify diagnosis and procedure codes and therefore produce reliable activity figures. Figures appear low.
Sub-total – for this group of interventions	**1,520,316**	—	—	—	—

15. For this intervention, CCGs with zero activity were excluded in the n-fold (CCG variation calculation).
16. For this intervention, CCGs with zero activity were excluded in the n-fold (CCG variation calculation).
17. According to the methodology agreed by the Committee, interventions with fewer than 300 episodes per annum are considered too low to set an activity goal.
18. For this intervention, CCGs with zero activity were excluded in the n-fold (CCG variation calculation).

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 25th percentile)	Comments (including future actions to improve data / coding)
2Z	—	—	—	—	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.
2AA. 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.
2BB. Routine preoperative electrocardiogram (ECG) 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.
2CC. Routine PSA testing is not recommended in asymptomatic men that do not have risk factors associated with prostate cancer	—	—	—	—	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.

2DD. 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.
2EE. 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.

The EBI programme is committed to continuous improvement, including enhancing the data underpinning the clinical guidance. There will be regular reviews of the coding, for example the programme team is exploring the potential link between EBI data with the Diagnostic Imaging Database (DID) and the Patient Level Information and Costing System (PLICS). This joint working with other datasets and improvement programmes will enable and ensure alignment of any developments, thus reducing any duplication in work.

Monthly-refreshed EBI data is currently available for all stakeholders to view via the NHS Business Services Authority (BSA) website.

Recommendations

The programme continues to focus on behaviour change to encourage best practice medicine and effective use of resources. The Committee, supported by the AoMRC, has successfully secured widespread endorsement and advocacy from medical experts as well as the Medical Royal Colleges and all the relevant specialist societies. Additionally, while work with patient groups has been positive, feedback suggests there is a need for increased patient involvement.

The EBI programme developed a suite of implementation levers to support change, many of which have either been paused or superseded during the NHS response to COVID-19. To that end, the NHSE/I Elective Care Recovery and Transformation (ECRT) team began national work to review and clinically prioritise elective care waiting lists to ensure that potentially inappropriate interventions are not offered to patients. As part of this work, the EBI list 1 guidance has already been embedded into this programme to enable that patients only remain on the waiting lists for clinically appropriate reasons in line with EBI criteria. This frees up spaces on the waiting list for clinically appropriate procedures and supports the implementation of EBI guidance in line with the overall goals of the programme. It is anticipated that this new list of 31 new interventions be part of this ongoing work to prioritise elective care waiting lists.

The programme partners (the Academy of Medical Royal Colleges (the Academy), NHS Clinical Commissioners (NHS CC), the National Institute for Health and Care Excellence (NICE) and NHS England and Improvement (NHS E/I)) are committed to supporting publication, dissemination and implementation of the guidance for the 31 interventions. NICE value the implementation levers and measures of impact that EBI enables for NICE and NICE-accredited guidance. NICE will continue to support future guidance development by supplying recommendations for the Committee to consider. EBI data will be used to feed back to guideline development groups the real-world impact of NICE guidance and updates to guidance can be made where needed. The Academy are committed to hosting the Committee and ensuring broad clinical engagement and endorsement of the guidance.

The Committee recommends that the Academy:

— Endorse and support the implementation of the proposed clinical guidance for the 31 interventions set out in this report. This would allow the recommendations to be built into tools to support COVID recovery;

- Continue to support enhanced patient involvement by working with patient organisations, such as the Patients Association and the AoMRC Patient and Lay committee (see Appendix 2 for further detail);
- Continue to support the ECRT team within NHSE/I on the national work to review and clinically prioritise elective care waiting lists; and
- Support the implementation, uptake, and measurement of future waves of EBI guidance developed by the Committee
- Support the continued hosting of the Expert Advisory Committee.

Appendix 1
Full Clinical Guidance for the 31 interventions

1.1.1 2A — 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. **This guidance applies to adults aged 19 years and over.**
Number of interventions in 2018/19
26,629
Proposal
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. 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: — 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. Significant coronary artery disease (CAD) found during CT coronary angiography is ≥ 70% diameter stenosis of at least one major epicardial artery segment or ≥ 50% diameter stenosis in the left main coronary artery. If the CT coronary angiography is inconclusive, non-invasive functional imaging for myocardial ischemia should be considered in the following forms: — Stress echocardiography; **or** — First-pass contrast-enhanced magnetic resonance (MR) stress perfusion; **or** — MR imaging for stress-induced wall motion abnormalities; **or** — Fractional flow reserve CT (FFR-CT); **or** — Myocardial perfusion scintigraphy with single photon emission computed tomography (MPS with SPECT).

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.)

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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 2B — Repair of minimally symptomatic inguinal hernia

Summary of intervention

Watchful waiting is a safe option for people with minimally symptomatic inguinal hernias. Delaying and not doing surgical repair unless 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.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

54,764

Proposal

Minimally symptomatic inguinal hernia can be managed safely with watchful waiting after assessment. Conservative management should therefore be considered in appropriately selected patients.

In women, all suspected groin hernias should be urgent referrals.

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 not 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 hernia repair for minimally symptomatic hernia. The rate of complications is similar for those undergo surgery for minimally symptomatic hernia 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. The 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. Outcomes, pain and post-operative complications remained similar to hernia repair for minimally symptomatic hernia.

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1.1.3. 2C — Chronic rhinosinusitis

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. **This guidance applies to adults and children.**
Number of interventions in 2018/19
12,610

Proposal

Patients are eligible to be referred for specialist secondary care assessment in any of 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)

OR

— Patient has nasal symptoms with an unclear diagnosis in primary care

OR

— Any patient with unilateral symptoms or clinical findings, orbital, or neurological features 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

AND

— 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'.

AND

— Pre-operative CT sinus scan has been performed and confirms presence of CRS. Note: a CT sinus scan does not necessarily need to be repeated if performed sooner in the patient's pathway.

AND

— Patient and clinician have undertaken appropriate shared decision-making consultation regarding undergoing surgery including discussion of risks and benefits of surgical intervention.

OR

— In patients with recurrent acute sinusitis, nasal examination is likely to be relatively normal. Ideally, the diagnosis should be confirmed during an acute attack if possible, by nasal endoscopy and/or a CT sinus scan.

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 NSAID-Eosinophilic Respiratory Disease (NSAID-ERD, Samter'sTriad Aspirin Sensitivity, Asthma, CRS)
- Treatment with topical and / or oral steroids contra-indicated.
- As part of surgical access or dissection to treat non-sinus disease (e.g. pituitary surgery, orbital decompression for eye disease, nasolacrimal surgery)

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.

It is important to note that there is currently a UK multidisciplinary randomised controlled trial (RCT) comparing medical therapy with surgery in the management of chronic rhinosinusitis (MACRO Trial: https://www.themacroprogramme.org.uk/). The outcome of this trial may lead to modification of guidance for sinus surgery in due course.

Endoscopic sinus surgery is generally safe and low risk. Risks include bleeding, infection, scar tissue formation, and very rarely, orbital injury or cerebrospinal fluid leak (with associated risk of meningitis). Patients should be counselled that there is a risk of recurrent symptoms and that ongoing medical treatment is normally required to maintain symptom improvement after endoscopic sinus surgery.

References

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1.1.4 2D — Removal of adenoids for treatment of glue ear

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.

This guidance applies to children aged 18 years and under.

Number of interventions in 2018/19

2,778

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 nasal obstruction which is contributed to by adenoidal hypertrophy (enlargement)
- 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 (e.g. as part of adenotonsillectomy)
- As part of the treatment of chronic rhinosinusitis in children
- For persistent nasal obstruction in children and adults with adenoidal hypertrophy
- 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 multidisciplinary assessment should be carried out before adenoidectomy.

References

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1.1.5 2E — 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.

This guidance applies to adults and children.

Number of interventions in 2018/19

38,088

Proposal

The use of arthroscopic surgery to treat degenerate meniscal tears should follow published BASK guidelines. https://online.boneandjoint.org.uk/doi/pdf/10.1302/0301-620X.101B6.BJJ-2019-0126.R1

Rationale for Recommendation

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 may be noted with an MRI scan.

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 pain management strategies. Many patients treated this way will improve and do not require surgery.

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 need urgent assessment. If a bucket handle tear of the meniscus is present, 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.

Where symptoms have not settled after three months of non-operative treatment an MRI scan should be considered. In these cases with an unstable meniscal tear on MRI, arthroscopic meniscal surgery may be indicated. Recent systematic review evidence has suggested that in these cases where there are persistent symptoms, there can be improvement with this procedure.

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

Routine use of arthroscopy for degenerative knee disease, where no specific target pathology has been identified (e.g. proven meniscal tear and persistent symptoms), is not recommended. Use of arthroscopy in patients with generic degenerative knee disease and no specific target pathology 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 indiscriminative use will reduce unwarranted variation in clinical care.

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1.1.6 2F — Troponin test

Summary of intervention
Troponin blood testing should be used to diagnose acute myocardial infarction. It should only be used in cases where a clinical diagnosis of acute coronary syndrome or myocarditis is suspected or for prognostic purposes when pulmonary embolism is confirmed.
Number of interventions in 2018/19
575,375
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). 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. **This guidance applies to adults and children.**

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 also has a role in the diagnosis of suspected myocarditis and for diagnosis and monitoring of chemotherapy related myocardial damage.

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

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1.1.7 2G — 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.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

14,456

Proposal

Please refer to NICE NG118 (recommendation 1.5) for full details on the assessment and management of renal and ureteric stones: https://www.nice.org.uk/guidance/ng118/chapter/Recommendations.

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 10mmm 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.

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1.1.8 2H — 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).

This guidance applies to male adults aged 19 years and over.

Number of interventions in 2018/19

43,703

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. It may be reasonable to undertake flexible cystoscopy before doing some urological surgical interventions.

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

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1.1.9 2I — 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 (Rezum).

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).

This guidance applies to male adults aged 19 years and over.

Number of interventions in 2018/19

14,561

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 shoulder 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

- 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

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1.1.10 2J — Lumbar 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, herniated or slipped, resulting in pressure on usually one, but sometimes more nerve roots. The symptoms it causes are called radiculopathy or 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

2,291

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, manual therapy and screening 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 three months (except in severe cases) despite best efforts with non-operative management.

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.

This guidance applies to adults aged 19 years and over.

Rationale for Recommendation

There remains a reasonable body of evidence to show that in carefully selected patients, lumbar discectomy may lead to a greater and quicker 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.

References

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1.1.11 2K — Lumbar 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.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

1,612

Proposal

Lumbar radiofrequency facet joint denervation (RFD) should only be offered in accordance with NICE Guideline NG59 which recommends it as an adjunct in the management of chronic low back pain only 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

The facet joints are pairs of joints that stabilise and guide motion in the lumbar 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.

Manual therapy, with appropriate psychological therapies where necessary, should be considered as an early intervention to support the individual.

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.

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.

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

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1.1.12 2L — 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). **This guidance applies to adults aged 19 years and over.**
Number of interventions in 2018/19
45,745
Proposal
Exercise ECG has no role in the screening of asymptomatic and low risk patients for coronary heart disease 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. 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 mean 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

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1.1.13 2M — 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.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

20,200

Proposal

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

Urgent: (Within two weeks)

- Any dysphagia (difficulty in swallowing), to prioritise urgent assessment of dysphagia please refer to the Edinburgh Dysphagia Score 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
  - Nausea or vomiting
- 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 with any of the following: weight loss, reflux, dyspepsia, upper abdominal pain.

For the assessment of Upper GI bleeding:

- For patients with haematemesis, calculate Glasgow Blatchford Score at presentation and any high-risk patients should be referred
- 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
  - Eradication can be confirmed with a urea breath test.

For management of specific cases

H pylori and associated peptic ulcer:

- Eradication can be confirmed with a urea breath test, however if peptic ulcer is present repeat endoscopy should be considered 6-8 weeks after beginning treatment for H pylori and the associated peptic ulcer.

Barrett's oesphagus:

- Where available the non-endoscopic test called Cytosponge can be used to identify those who have developed Barrett's oesophagus as a complication of long-term reflux and thus require long term surveillance for cancer risk
- 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:

- Patients aged 55 and under with suspected coeliac disease and anti-TTG >10x reference range should be treated for coeliac disease on the basis of positive serology and without endoscopy or biopsy.

Surveillance endoscopy:

- Surveillance endoscopy should only be offered in patients fit enough for subsequent endoscopic or surgical intervention, should neoplasia be found. Many of this patient group are elderly and/or have significant comorbidities. Senior clinician input is required before embarking on long term endoscopic surveillance
- 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 of persistent H pylori infection, should undergo endoscopy every three years.

Screening endoscopy can be considered in:

- European guidelines (2015) for patients with genetic risk factors / family history of gastric cancer recommend genetics referral first before embarking on long term screening. Screening is not appropriate for all patients and should be performed in keeping with European expert guidelines

— Patients where screening is appropriate, for individuals aged 50 and over, with multiple risk factors for gastric cancer (e.g. 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

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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.[19]

1.1.14 2N — Appropriate colonoscopy in the management of hereditary colorectal cancer

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. **This guidance applies to adults aged 19 years and over.**
Number of interventions in 2018/19
415,262 [20]
Proposal
Follow the British Society of Gastroenterology surveillance guidelines for colonoscopy in the management of hereditary colorectal cancer: https://www.bsg.org.uk/resource/guidelines-for-the-management-of-hereditary-colorectal-cancer.html.

19. For these intervention data, procedure coding is available however diagnosis and indication coding is either partial or has limitations (see Appendix 4 tables for each intervention) therefore it was inappropriate to calculate goals for these interventions.

20. The number of interventions (415,262) represents colonoscopies for all indications, including those with symptoms and/or risk factors.

Family history of CRC

For individuals with moderate familial CRC risk:

— Offer one-off colonoscopy at age 55 years

— 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 ≥ 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 annual colonoscopic surveillance from diagnosis to age 75 years after the colon has been cleared of all lesions >5mm in size
- If no polyps 10mm or greater in size are identified at subsequent surveillance examinations, the interval can be extended to 2 yearly.

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

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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.

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1.1.15 20 — 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.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

515,262 [21]

Proposal

Follow the British Society of Gastroenterology surveillance guidelines for post-polypectomy and post-colorectal cancer resection: https://www.bsg.org.uk/resource/bsg-acpgbi-phe-post-polypectomy-and-post-colorectal-cancer-resection-surveillance-guidelines.html.

Risk Surveillance Criteria for Colonoscopy

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 greater than 10 years:

— Offer one-off surveillance colonoscopy at 3 years.

21. The number of interventions (515,262) represents colonoscopies for all indications, including those with symptoms and/or risk factors.

For individuals with **no high-risk** findings:

— No colonoscopic surveillance should be undertaken

— Individuals should be strongly encouraged to participate in their national bowl 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 within a 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/clinical-resource/bsg-acpgbi-phe-post-polypectomy-and-post-colorectal-cancer-resection-surveillance-guidelines/.

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.

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1.1.16 2P — ERCP in acute gallstone pancreatitis without cholangitis

Summary of intervention

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

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

308

Proposal

Early ERCP in the treatment of acute gallstone pancreatitis, should only be performed if there is evidence of cholangitis or obstructive jaundice with imaging evidence of a stone in the common bile duct. 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.

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Summary of intervention

Cholecystectomy is a surgical procedure that removes the gallbladder. The gallbladder in 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.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

2,056

Proposal

For patients who are admitted to hospital with acute cholecystitis or mild gallstone pancreatitis, index laparoscopic cholecystectomy should be performed within that admission. These patients should have their gallbladders removed, ideally before discharge, to avoid further delay and prevent further potentially fatal attacks. If the patient is fit enough for surgery and same admission cholecystectomy will be delayed for more than 24 hours, it may be reasonable to make use of a virtual ward, where the patient can return home under close monitoring prior to undergoing surgery as soon as possible.

Otherwise 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). This guidance may not be applicable in patients with severe acute pancreatitis.

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, and, 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.

In patients with moderate to severe acute cholecystitis (using the Tokyo Guidelines 2018 definitions) there may be an increased risk of bile duct injury. In patients with severe acute biliary pancreatitis, surgical intervention may be required for other sequalae of the pancreatitis and therefore cholecystectomy should be undertaken once the patient has recovered from any organ failure and when it is clear if any other intervention is required, for example for acute fluid collections or pancreatic necrosis.

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1.1.18 2R — 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; MRI can be used in centres with appropriate expertise.

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.

Recent studies have shown there is a potential role for non-operative management of acute appendicitis, imaging can help identify which patients could be managed conservatively.

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.

The diagnostic accuracy of MRI to diagnose appendicitis is similar to CT. Where specialist MRI is available it can be considered if CT is contraindicated, it is particularly useful for pregnant patients.

This guidance applies to adults and children.

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, but imaging can help identify which patients can be managed conservatively. 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), imaging can also help identify which patients can be managed conservatively. 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).

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1.1.19 2S — Low back pain imaging

Summary of intervention

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

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

253,956

Proposal

Do not routinely offer imaging in a non-specialist setting for people with low back pain with or without sciatica in the absence of red flags, or suspected serious underlying pathology following medical history and examination.

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.

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, manual therapy 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 (greater than 3 to 6 months duration) 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.

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1.1.20 2T — 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.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

80,315 [22]

22. Currently there is no diagnostic data in outpatients so indication for knee MRI is not clear, therefore the number of interventions (80,315) represents the total number of knee MRIs (T - Knee MRI when symptoms are suggestive of osteoarthritis and U - Knee MRI for suspected meniscal tears).

Proposal

In primary care, where clinical assessment is suggestive of knee OA, imaging is not usually necessary. If imaging is required than 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
- 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).**

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1.1.21 2U — 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 three months of initial non-operative care may have a symptomatic meniscal tear. These patients are referred to intermediate or 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 intermediate or 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.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

80,315 [23]

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 intermediate or 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.

23. Currently there is no diagnostic data in outpatients so indication for knee MRI is not clear, therefore the number of interventions (80,315) represents the total number of knee MRIs (T - Knee MRI when symptoms are suggestive of osteoarthritis and U - Knee MRI for suspected meniscal tears).

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 (e.g. exercise/therapy, weight loss, bracing, topical or oral analgesia). 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.

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1.1.22 2V — Vertebral augmentation (vertebroplasty or kyphoplasty) for painful osteoporotic vertebral fractures

Summary of intervention

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.

Vertebral augmentation, including vertebroplasty (VP) and kyphoplasty (KP), refers to spinal procedures which involve the injection of bone cement (typically polymethylmethacrylate (PMMA)) into the fractured vertebral body via a needle inserted through the skin, using image guidance). These procedures aim to increase stability and strengthen the bone with the

intention of reducing pain and further collapse. The procedure can be performed under local anaesthetic with sedation, or general anaesthesia interventional radiologist, spinal surgeon or pain specialist. Decisions regarding the need for vertebral augmentation are made by the operator, in conjunction with metabolic and pain specialists, geriatricians and the patient.

The alternative to vertebral augmentation is conservative management. This consists of pain relief, bracing, and manual therapy, although the evidence for bracing and manual therapy has shown to be of no benefit. Bone healing can take place over 2-12 weeks. Hospitalisation, immobility and opioid pain medication often have significant side effects, particularly in older patients. The majority of older hospitalised patients treated conservatively still have significant pain at three months and over one third at six months.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

304

Proposal

Vertebroplasty (VP) or kyphoplasty (KP) should be offered as a treatment for painful osteoporotic vertebral fractures on a case-by-case basis.

As per advice in the NICE Technology Appraisal Guidance 279 (TAG 279), VP or KP may be considered:

- In cases where patients have 'severe (7/10 or greater on VAS scale) ongoing pain after a recent, unhealed vertebral fracture despite optimal pain management' and in particular hospitalised older people
- 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/KP 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.

NICE TAG 279 and a number of publications since 2016 have shown a reduction in mortality in those treated with VA as opposed to conservative management.

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, particularly hospitalised older people.

VAPOUR (2016) showed a significant reduction in length of stay for their inpatient cohort.

Risk of serious adverse event following VA is rare.

VA has not shown to cause an increase in additional/adjacent vertebral fractures.

It is clear that aggressive treatment of the underlying osteoporosis is paramount.

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1.1.23 2W — Shoulder Radiology: Scans for Shoulder Pain and Guided Injections

Summary of intervention

W(i) Scans for Shoulder Pain

X-rays should be used routinely as the first line of radiological investigation for the diagnosis of most routine shoulder pathology. This practice should be followed in primary, intermediate and secondary care.

The use of Ultrasound, MRI and CT scanning should be restricted to those secondary care services that are responsible for the definitive treatment of such patients. The use of these investigations outside secondary care should only be allowed if referral pathways have been developed with the local secondary care specialist shoulder service.

Primary care patients that are deemed urgent or have red flags should be referred urgently to the appropriate secondary care team.

W(ii) Image Guided Injections for Shoulder Pain

Image guided subacromial injections are not recommended in primary, intermediate or secondary care.

Evidence does not support the use of guided subacromial injections over unguided subacromial injections in the treatment of subacromial shoulder pain.

Other image guided shoulder injections should only be offered under the guidance of a secondary care shoulder service.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

W(i) – scans for shoulder pain: 128,809

W(ii) – image guided injections for shoulder pain: 2,934

Proposal

For patients who initially present with shoulder pain in primary or intermediate care, the first line of radiological investigation should be a plain x-ray. X-rays diagnose most routine shoulder problems such as osteoarthritis, calcium deposits, rotator cuff arthropathy, impingement, fractures and primary and secondary tumours.

If following an x-ray and clinical assessment, the diagnosis is still in doubt then a referral to the secondary care shoulder service is indicated where further specialist assessment and appropriate investigations including USS, CT scans and MRI scans can be arranged. The British Elbow and Shoulder Society (BESS) have produced treatment and referral guidelines for routine shoulder conditions (https://bess.ac.uk/patient-care-pathways-and-guidelines/).

If shoulder RED FLAGS are present, an urgent referral to secondary care should be arranged for further investigation and management:

- 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.

Injections for shoulder pain are often indicated as a first line of treatment. The common areas injected are the subacromial space, the glenohumeral joint and the acromioclavicular joint. The most common injection is a subacromial injection. Guided injections (usually utilising ultrasound) are more expensive than unguided injections.

Evidence now indicates there is no additional benefit from a guided subacromial injection over an unguided landmark injection and so these are no longer recommended in primary, intermediate and Secondary care during routine management of patients with subacromial shoulder pain.

The use of other guided injections for glenohumeral joint and acromioclavicular joint problems should only be offered under the guidance of a secondary care shoulder service responsible for definitive treatment of these patients.

Rationale for Recommendation

There is now a very significant burden on radiology departments from an expanding list of investigations and interventional treatments being offered to a variety of services in primary, intermediate and secondary care.

While there is no obvious harm directly caused by these investigations, the waiting times are becoming excessive and such delays may cause harm. It appears that a large number of these investigations may add little clinical value to the treatment pathway but cause unnecessary delay to those patients in need and so adversely affecting their outcome. Practices vary but overall there are large volumes of referrals for X-rays, MRIs, CTs and ultrasounds.

With little evidence to support the escalating use of shoulder scans by all, a restriction of these investigations to the secondary care services directly responsible for the definitive treatment of such patients is recommended. Any primary or intermediate care services requesting such scans should be under local referral guidelines developed with the local specialist shoulder service. This will likely decrease unnecessary referrals and improve patient experience and waiting times.

The burden of referrals for guided shoulder injections, particularly subacromial injections in secondary care has also expanded significantly in recent years and is compounded further by the need for a radiologist to perform or supervise the scan/injection. While the offer and provision of such injections by intermediate care providers may seem attractive, evidence now suggests no additional benefit to be had from more expensive guided subacromial injections over standard unguided ones.

The restriction of guided subacromial injections will lead to more immediate unguided injection treatments for patients by their consulting clinician and will improve radiology waiting times for other patients in need of other interventional radiology treatments further improving patient experience and waiting times.

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1.1.24 2X — 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.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

13,352

Proposal

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.

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 patients with diagnoses other than OA of the hip.

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:

- 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.

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.

An MRI or urgent onward referral may be warranted in some circumstances. These include:

- 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
- Suspected Osteonecrosis / Avascular necrosis of the hip
- Suspected transient osteoporosis
- Suspected periarticular soft tissue pathology e.g. abductor tendinopathy

Important differential diagnoses include inflammatory arthritis (for example, rheumatoid arthritis), femoro-acetabular impingement, septic arthritis and malignancy (bone pain).

Rationale for Recommendation

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.

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 (eg, hip), degree of deformity and obesity.** Level of evidence: III–IV. LOA (95% CI) 9.4 (8.9 to 9.9).

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1.1.25 2Y — 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.

This guidance applies to adults aged 19 years and over.

Number of interventions in 2018/19

41

Proposal

Spinal fusion is not indicated for the treatment of non-specific, mechanical back pain. The NICE exclusion criteria are:

- Conditions of a non-mechanical nature, including:
  - inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera)
  - serious spinal pathology (for example, neoplasms, infections or osteoporotic collapse)
  - scoliosis
- Pregnancy-related back pain
- Sacroiliac joint dysfunction
- Adjacent-segment disease
- Failed back surgery syndrome
- Spondylolisthesis.

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, manual therapy 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, manual therapy, 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 (see above) 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. NICE Guideline NG59 established formal, multi-disciplinary consensus on the management of back pain, with which is implemented through the National Back Pain Pathway. This NICE-endorsed pathway offers all patients timely, evidence-based care for back pain.

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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 2Z — 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.

This guidance applies to children aged 2 years and under.

Number of interventions in 2018/19

Data are not currently available

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.
- 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.

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1.1.27 2AA — 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.

This guidance applies to adults aged 19 years and over.

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.

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1.1.28 2BB — 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.

This guidance applies to adults aged 19 years and over.

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.

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.

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.

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.

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Summary of intervention

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. The PSA test is the most commonly used test that can lead to the diagnosis of localised prostate cancer for which potentially curative treatment can be offered. Increased PSA levels may be associated with a raised probability of prostate cancer. However, many men have raised PSA levels without having prostate cancer and many men with prostate cancer don't have raised PSA levels.

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.

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.

This guidance applies to male adults aged 19 years and over.

Number of interventions in 2018/19

Data are not currently available

Proposal

Where PSA testing is clinically indicated (see below), or requested by the man aged 50 and over, he should have a careful discussion about the potential risks and benefits of PSA testing which allows for shared decision making before a PSA test. Various tools are available to assist with shared decision making (see below)

PSA testing should be considered in asymptomatic men over age 40 who are at higher risk of prostate cancer due if they are Black and/or have a family history of prostate cancer

PSA testing should be considered when clinically indicated (ideally after counselling on the potential risks and benefits of testing) in men when there is clinical suspicion of prostate cancer, which may include the following symptoms:

- 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).

PSA testing for prostate cancer is not recommended in asymptomatic men (unless they are at high risk of prostate cancer i.e. Black and/or family history) is not recommended. This is because the benefits have not been shown to clearly outweigh the harms. In particular, there is concern about the high risk of false positive results.

Where PSA test results are mildly raised above the age specific range for an individual patient, it may be appropriate to repeat the test within two to three months to monitor the trend.

Note: 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*

both of which are likely to raise PSA and give a false positive result.

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 risker 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.

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1.1.30 2DD — 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.

This guidance applies to adults aged 19 years and over.

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
- ALT can be used as a measure of liver function.

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 and ECS guidance for the management of dyslipidaemias: lipid modification to reduce cardiovascular risk.

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 x 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.

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1.1.31 2EE — 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.

This guidance applies to adults (or equivalent based on body weight for children or adults with low body weight) only.

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

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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_/.

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.transfusionguidelines.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 2
Overview of engagement and feedback

Engagement took place during the COVID-19 pandemic and, as a result, all engagement activity was undertaken virtually. The Committee feels it was able to reach a wider audience and engage with people who would have been unable to travel to face-to-face events. This is particularly the case for clinicians who typically find it harder to rearrange clinical responsibilities. The Committee spoke to 359 individuals through a series of webinars where they captured the attendees feedback and comments. These included:

- Three clinically focused webinars (one on the surgery and devices interventions, one on the radiology and cardiology diagnostics interventions and one on pathology and other investigative procedures) with 180 participants;
- A data-focused webinar with 66 participants;
- Three patient-focused webinars, hosted by the Patients Association with 29 participants; and
- A post-engagement review session with 84 participants.

Feedback and comments were also submitted through the online survey or by email. The Committee received 68 responses via the online survey and 442 email responses. There was a broad range of feedback from a wide spectrum of individuals and organisations including: patients, clinicians, voluntary organisations, patient representative groups, members of the public, NHS providers, CCGs, Medical Royal Colleges and specialist societies. Specifically, there were:

- 68 responses to our online survey setting out a position of agreement or disagreement on our proposals
- 63 email responses from organisations and clinicians providing detailed feedback
- 374 further email responses from patients and the public, the majority of which were the same or materially similar and from campaign group “Keep our NHS public”.

Following the close of the engagement period, all responses received were considered and analysed resulting in the following findings. Details of the responses to specific questions asked during the engagement can be found in tables 3A-D.

The Committee is grateful to all those who have contributed and helped us refine and strengthen our proposals and are particularly appreciative of those who attended the eight webinars. This Appendix outlines in detail the feedback received and how this has influenced our proposals. It has been produced by the Committee, supported by the Communications and Operations team at the Academy.

Overarching themes from engagement

Key themes from the responses include:

— **Patient involvement.** Feedback, particularly from patients, was that the engagement document was lengthy and complex. As a result, there were queries around ease of responding to the engagement. Additionally, feedback indicated that patients and patient representative groups would welcome a greater level of involvement at an earlier stage of developing the proposals.

  The Committee is made up of a diverse membership including three patient representative and it understands the value of gathering feedback from all stakeholders. In developing the proposals for the 31 interventions, it worked with patients and patient representative organisations to assess the impact on patients. Also, during the six-week exercise, in collaboration with the Patients Association, three patient focus groups were held to finalise the proposals. The Committee acknowledges the clinical and technical nature of the guidance, however the principles and methodology of the programme were consulted on and agreed during the consultation on the initial wave in 2018. This engagement therefore focused on achieving consensus on the clinical guidance and coding. However, the Committee recognises the challenges this brought and will recommend that work is completed more closely and formally with patient groups going forward.

— **Threshold and implementation.** There was challenge around threshold setting and the use of the 25th percentile goal. In particular, concerns were raised that in implementing the national guidance, CCGs and/or clinicians may restrict access to interventions leading to some patients being excluded from treatments they need. Additionally, there were concerns around the bureaucracy burden associated with an IFR and prior approval process taking up valuable clinical time contradicting with the aims of the programme.

  The Committee stresses that the 25th percentile-based threshold is not a barrier to access to treatment if clinical criteria are met. This was consulted on in the first wave resulting in a preference for a 25th percentile goal, replicating RightCare methodology. The EBI programme seeks to reiterate NICE, NICE-accredited and specialist society guidance and publish it as national commissioning guidance. EBI guidance is therefore based on the best available medical evidence which should be followed even where there are challenges to obtaining accurate data and monitoring activity levels. Nevertheless, clinical acumen should always prevail, and patients will not be excluded from accessing interventions they need in the appropriate circumstances.

— **Alignment with NHS-wide priorities.** There was concern around ensuring alignment of the EBI programme with relevant public health messaging and NHS-wide goals. In particular, responders used the example of access to PSA testing and upper GI endoscopy being restricted which contradicts some current public health messaging and may give rise to confusion among both patients and clinicians.

  The Committee understands the difficulty in ensuring consistency of messaging across the NHS, especially in the current fast-moving climate. The Committee would like to stress that the EBI programme is working closely to support the recovery of NHS services and is supporting the ECRT team in the third phase of the NHS response to COVID-19. The programme is also working closely with relevant teams such as diagnostic and cancer pathways. Additionally, the programme continues to work with its programme partners and the wider health and care system to ensure alignment and consistent messaging.

Intervention-specific feedback

Intervention-specific clinical and data/coding feedback was sent to the Medical Royal Colleges and sub-specialty groups who drafted, or were closely involved in drafting, the clinical guidance initially. The organisations reviewed that feedback and made the decision whether to incorporate the feedback into the clinical guidance and how.

Responses to the codes used for each intervention were positive, with some helpful advice on minor coding changes to certain interventions.

Responses to the clinical criteria were also extremely positive. Several clinicians and respondents from across the system confirmed that the proposals generally reflect what is already being done within their organisation. Several minor amendments have been made to the clinical criteria based on feedback from clinical stakeholders, about which more information can be found in tables 4A-C.

In summary, the following key changes have been made:

Clinical Guidance:

— **Reiterate existing guidance:** Emphasise that EBI implements NICE, NICE-accredited and specialist society guidance. It does not seek to supersede or replace it;

— **Evidence:** Include additional evidence where available and relevant;

— **Clarify scope:** For example, whether guidance applies to adults and/or children;

— **Define medical terminology:** For example, the definition of watch and wait; and

— **Clarify clinical criteria:** Divide intervention W – Imaging for shoulder pain into two (Scans for shoulder pain and Image-guided injections for shoulder pain).

Data and coding:

— Review of SQL scripts and updating coding and the activity data; and
— Remove the activity threshold set for the F – Troponin test.[24]

Health inequalities impact

A full Equality and Health Inequalities Impact Assessment has been completed.

The Committee engaged widely to identify any impacts by protected characteristics and on those groups experiencing health inequalities. The online survey included two questions on this subject, one capturing general feedback and another specific feedback for each intervention. The Committee factored in time to discuss any potential Equality and Health Inequalities issues during each of the webinars as did the Patients Association, in the patient focus group webinars. NHS England and Improvements Health and Wellbeing Alliance also facilitated a webinar with individuals from organisations representing vulnerable groups to focus specifically on potential Equality and Health Inequality issues to feedback to the Committee.

In addition, the Committee undertook a data analysis exercise to identify any further impacts. This involved using multiple data sources (both health and non-health). This was limited to the 24 interventions for which data is available, and related to sex, age, ethnicity and race, disability and deprivation. The analysis results were clinically reviewed.

In reviewing the feedback from the engagement exercise, the webinars, online survey and emails and the results of the data analysis, a small number of questions consistently arose which required consideration. In relation to the 'repair of minimally symptomatic inguinal hernia' intervention, the Committee has adopted the Royal College of Surgeons' policy. This states that all suspected groin hernias in women should be urgent referrals. Relating to the 'Prostate-specific antigen testing' intervention, the Committee has altered the wording to recommend that asymptomatic men (over aged 40) who are Black should be considered for PSA testing. All of the questions raised and changes made are described in the full EHIA.

Though CCGs will need to conduct their own EHIAs accordingly, the EBI programme will maintain a focus on EHI issues as the programme moves into implementation.

24. Troponin testing is part of the COVID-19 testing protocol when someone presents in emergency care and therefore it is inappropriate to set a threshold. This intervention has been moved from Group A to Group B data type.

Online survey and email responses summary

Table 3A. Breakdown of the number of responses received via the online survey and via email, split by response group.

Grouped Response Category	Online Survey Responses	Email Responses
Clinician	23	10
NHS system	19	27
Patients & representative groups including VSO/ charity	9	17 (+374 from "Patients Representative Organisations")
National body	6	8
Other (please specify)	6	6
Total	63	68 (+374 from "Patients Representative Organisations")

Q1. Would you make any suggestions of interventions to be included in future guidance?

There were a variety of views, with many of the respondents who answered "yes" providing helpful suggestions for interventions to be included in the future, whereas those who answered "no", were supportive of the current list of proposed.

Table 3B: Breakdown of types of responses received to Q1 by type of respondent

Grouped Response Category	Yes	No	Not answered
Clinician	7	16	10
NHS system	4	16	26
Patients & representative groups including VSO/ charity	3	8	15
National body	1	6	7
Other (please specify)	2	4	6
Total	17	50	64

Q2. Through the EBI programmes proposed recommendations, do you think there could be positive or negative impacts to improve access, experience and outcomes for the following groups and how can any risks be mitigated to ensure the changes do not worsen health inequalities?

The responses to this question have been addressed within the Equalities Impact Assessment.

Q3. Do you agree with the coding methodology and summary described in Appendix 5?

There were a variety of views, with many of the respondents who answered "yes" providing suggestions for improvements to the clinical coding, whereas those who answered "no", were supportive of the current methodology.

Table 3C: Breakdown of types of responses received to Q3 by type of respondent

Grouped Response Category	Yes	No	Not answered
Clinician	19	3	11
NHS system	10	3	33
Patients & representative groups including VSO/ charity	4	3	19
National body	4	3	7
Other (please specify)	4	1	7
Total	41	13	77

Table 3D: Table shows the 3 questions that were asked for each intervention. The number of responses for all the interventions and the type of responses (either a change suggestion or an agreement) are summarised and are split by respondent type.

Q4. Comments on Clinical Guidance (feedback summarised for each intervention).						
Grouped Response Category	i) Do you have any suggested changes to the proposed clinical guidance?		i) Do you agree with the suggested approach to setting the threshold and implementing the recommendation?		i) Do you agree with the suggested codes to measure activity described in Appendix 5?	
	Number of times question was answered	Number of responses sugges-ting changes (% in brackets)	Number of times question was answered	Number of responses agreeing with proposal (% in brackets)	Number of times question was answered	Number of responses agreeing with proposal (% in brackets)
Clinician	34	17	24	19	22	20
NHS system	274	108	117	84	129	97
Patients & representative groups including VSO/ charity	12	7	10	0	9	3
National body	23	18	10	5	11	6
Other (please specify)	46	33	18	13	29	25
Total	389	183	179	121	200	151

Most of the responses received for these questions included requesting additional evidence where available/relevant; clarifying scope of the guidance e.g. applicable to adults and/or children; and defining the medical terminology and clinical criteria. For the data/coding suggestions, these were mostly about updating clinical codes to reflect coding practice.

Summary of updates to clinical criteria

Table 4A: Group A interventions where data are sufficiently robust to measure implementation.

	Intervention and summary of changes
Cardiology – caring for the heart	
2A	**Invasive angiogram to investigate stable chest pain** *Diagnostic angiogram should not be used as first-line investigation for low risk, stable chest pain* There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society. No substantive changes were made to the clinical criteria.
General Surgery	
2B	**Surgery for inguinal hernia** *Repair of minimally symptomatic inguinal hernia is not indicated* There was general agreement with the clinical criteria for this intervention, including from the Royal College of Surgeons of England. There were suggestions for clarification which have been responded to by: — Advising that all suspected groin hernias in women should be urgent referrals — Clarifying this policy applies to adults 19yrs + — Rewording the criteria to refer to 'minimally symptomatic hernia' (and not 'prophylactic' repair). The RCSEng has approved the changes to the clinical criteria.
ENT – surgery on the ear, nose and throat	
2C	**Surgical intervention for chronic rhinosinusitis** *Surgical intervention for chronic rhinosinusitis should only be considered after failed medical therapy or should a significant complication occur* There was general agreement with the clinical criteria for this intervention, including from ENT UK, the professional membership body that represents ear, nose and throat clinicians and related specialities and the British Rhinological Society. Some suggestions were received which asked for clarification which have responded to changing the recommendation to reflect wording provided by ENT UK and the BRS including: — Updating the recommendation to 'Surgical intervention for chronic rhinosinusitis should only be considered after failed medical therapy or should a significant complication occur' — Clarifying the circumstances in which patients are eligible for referral and may be considered for surgery by adding in 'and/or' wording

	— Expanding the list of conditions where surgery may be required outside of the criteria in the guidance to include NSAID-Eosinophilic Respiratory Disease (NSAID-ERD, Samter's Triad Aspirin Sensitivity, Asthma, CRS) — Noting that there is currently a UK multidisciplinary randomised controlled trial comparing medical therapy with surgery in the management of chronic rhinosinusitis (MACRO Trial: www.themacroprogramme.org), the outcome of which may lead to modification of guidance for sinus surgery. ENT UK and BRS have approved our reflections on the above feedback.
2D	**Removal of the adenoids for treatment of glue ear in children** *Adjuvant adenoidectomy for treatment of glue ear is not normally recommended alongside initial grommet insertion* There was general agreement with the clinical criteria for this intervention, including from ENT UK, the professional membership body that represents ear, nose and throat clinicians and related specialities. Some suggestions were received which asked for clarification which have been responded to by: — Removing recurrent URTIs from the list of clinical criteria in which adjuvant adenoidectomy should be offered — Adding persistent and / or frequent nasal obstruction which is contributed to by adenoidal hypertrophy (enlargement) to the list of clinical criteria in which adjuvant adenoidectomy should be offered — Aligning the summary, rationale and proposals, including updating the summary to more accurately reflect the detailed guidance by stating indications for the interventions and emphasising that the initial table is a summary only, the detailed guidance should always be referred to — Adding in wording to clarify the guidance is for the treatment of glue ear — Adding in wording to confirm that the guidance should not apply for cases of persistent nasal obstruction in children and adults with adenoidal hypertrophy — Updating the guidance to reference EBI1 guidance on grommets. ENT UK has approved our reflections on the above feedback.
Orthopaedics – caring for bones and joints	
2E	**Surgery to treat knee problems** *Arthroscopic surgery for meniscal tears should be performed following the published BASK clinical guidelines* There was general agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association and the British Association for Surgery of the Knee. Some suggestions were received which asked for clarification which have been responded to by: — Clarifying that there should be three months of non-operative treatment before an MRI should be considered. The BOA/BASK have approved our reflections on the above feedback.

Blood tests	
2F	**Specialised blood tests (troponin) for investigation of chest pain** *Troponin blood testing should be used to diagnose acute MI only where a clinical diagnosis of ACS or myocarditis is suspected or for prognosis in pulmonary embolism* There was general agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society. Some suggestions were received which asked for clarification which have been responded to by: — Updating the criteria to include the role of troponin testing in suspected myocarditis and monitoring of chemotherapy related myocardial damage. The BCS has approved our reflections on the above feedback
Urology – caring for the parts of the body that make urine	
2G	**Removal of stones from the kidneys** *Shockwave lithotripsy (SWL) or surgical intervention for treatment for kidney stones should only be offered according to this guidance* There was agreement with the clinical criteria for this intervention, including from the British Association of Urological Surgeons. The recommendation updated to make reference to NICE Guideline NG118 guidance which defines watchful waiting and treatment options by size of stone, however no material changes to the clinical criteria were made.
2H	**Cystoscopy for men with uncomplicated lower urinary tract symptoms** *Cystoscopy for men with uncomplicated lower urinary tract symptoms (LUTS) should only be offered according to this guidance* There was agreement with the clinical criteria for this intervention, including from the British Association of Urological Surgeons. The criteria were updated to add that flexible cystoscopy may be appropriate before some surgical interventions and this was approved by BAUS.
2I	**Surgery for enlarged prostate** *Surgical intervention for Benign Prostatic Hypertrophy should only be offered according to evidence-based guidance* There was agreement with the clinical criteria for this intervention, including from the British Association of Urological Surgeons No changes were made to the clinical criteria.
Back pain treatment – caring for the back	
2J	**Lumbar discectomy** *Lumbar discectomy is only recommended in carefully selected patients according to this guidance* There was general agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, the British Association of Spine Surgeons and the Royal College of

	Radiologists. Some suggestions were received which asked for clarification which have been responded to by: — Specifying the location of the discectomy i.e. all the references are lumbar — Replacing the term of 'physiotherapy' with 'manual therapy' — Replacing the term 'slipped disc' with 'herniated disc' — Updating the criteria to confirm that patients may be offered discectomy with compressive nerve root signs and symptoms lasting three months (except in severe cases), an increase from six weeks — Clarifying that the guideline does not apply to patients who demonstrate a deterioration in neurological function as such patients require an urgent referral. The BOA, BASS and RCR has approved our reflections on the above feedback.
Orthopaedics – caring for bones and joints	
2K	**Radiofrequency facet joint denervation for low back pain** *Radiofrequency facet joint denervation is not always indicated for management of low back pain* There was general agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, the British Association of Spine Surgeons and the Royal College of Radiologists. Some suggestions were received which asked for clarification which have been responded to by: — Specifying the location of the discectomy i.e. all the references are lumbar — Replacing the term of 'physiotherapy' with 'manual therapy'. The BOA, BASS and RCR has approved our reflections on the above feedback.
Cardiology – caring for the heart	
2L	**Treadmill test for heart disease** *Exercise ECG is not recommended for screening for coronary heart disease* There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society. The criteria were updated to clarify that exercise ECG has not role in screening for coronary heart disease and this was approved by the BCS.
Gastroenterology – care of the digestive system	
2M	**Endoscopy to investigate gut problems** *Upper GI endoscopy should not be used as first-line for investigation of suspected gastrointestinal disease* There was general agreement with the clinical criteria for this intervention, including from the British Society of Gastroenterologists.

	Some suggestions were received which asked for clarification which have been responded to by:
	
	— Removing gastric reflux and haematemsis from indications requiring an urgent two-week referral
	— Clarifying that for patients with haematemesis, the Glasgow Blatchford Score should be calculated at presentation and any high-risk patients should be referred
	— Clarifying the use of Upper GI endoscopy for the management of specific cases, including:
	  — For H pylori and associated peptic ulcer, eradication can be confirmed with a urea breath test, however if peptic ulcer is present repeat endoscopy should be considered 6-8 weeks after beginning treatment for H pylori and the associated peptic ulcer
	  — For Barrett's oesophagus, the non-endoscopic test called Cytosponge can be used (where available) to identify those who have developed Barrett's oesophagus as a complication of long-term reflux and thus require long term surveillance for cancer risk
	  — For coeliac disease, in patients aged 55 and under with suspected coeliac disease and anti-TTG >10x reference range should be treated for coeliac disease on the basis of positive serology and without endoscopy or biopsy.
	
	The BSG has approved our reflections on the above feedback.

Table 4B: Group B interventions including those in diagnostic and outpatient settings where data are available but further exploration of additional datasets is proposed.

	Intervention and summary of changes
Gastroenterology – care of the digestive system	
2N	**Appropriate colonoscopy in the management of hereditary colorectal cancer** *Colonoscopy should only be offered to people identified in accordance with the British Society of Gastroenterology guidelines* There was general agreement with the clinical criteria for this intervention, including from the British Society of Gastroenterologists. Some suggestions were received which asked for clarification which have been responded to by: — Emphasising that the relevant BSG colonoscopy surveillance guidelines should be followed — Clarifying that colonoscopy should 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

	— Clarifying that individuals with MCRA (defined as having 10 or more metachronous adenomas) should be offered annual colonoscopic surveillance from diagnosis to age 75 years after the colon has been cleared of all lesions >5mm in size, or, where no polyps 10mm or greater in size are identified at subsequent surveillance examinations, the interval can be extended to 2 yearly. The BSG has approved our reflections on the above feedback.
2O	**Follow up colonoscopy of the lower intestine** *Colonoscopy should only be offered to people identified in accordance with the British Society of Gastroenterology guidelines* There was general agreement with the clinical criteria for this intervention, including from the British Society of Gastroenterologists. Some suggestions were received which asked for clarification which have been responded to by: — Emphasising that the relevant BSG colonoscopy surveillance guidelines should be followed — Removing the word 'surgical' from the recommendation — Updating '1 year after' to 'within a year' for surveillance colonoscopy after potentially curative CRC resection. The BSG has approved our reflections on the above feedback.
General surgery – operations on the stomach and intestines	
2P	**Test of the gallbladder** *Early endoscopic retrograde cholangiopancreatography (ERCP) is not indicated for investigation of acute gallstone pancreatitis without cholangitis* There was general agreement with the clinical criteria for this intervention, including from the British Society of Gastroenterology. Some suggestions were received which asked for minor clarification which have been responded to by: — Removing the word 'no' from before cholangitis in the summary — Replacing the phrase 'ongoing obstruction of the biliary tree' with 'obstructive jaundice with imaging evidence of a stone in the common bile duct' This was approved by the BSG.
2Q	**Cholecystectomy** *Cholecystectomy should be considered on the same admission as acute cholecystitis or gallstone pancreatitis* There was general agreement with the inclusion of this procedure, including from the Royal College of Surgeons of England. Some suggestions were received which asked for clarification which have been responded to by: — Clarifying that index laparoscopic cholecystectomy should be performed within that admission for patients admitted with acute cholecystitis or mild gallstone pancreatitis

	— Adding criteria regarding appropriate treatment in patients with moderate to severe acute cholecystitis where there may be an increased risk of bile duct injury — Clarifying that this guidance may not be applicable in patients with severe acute pancreatitis. The RCS Eng has approved our reflections on the above feedback.
2R	**Appendicectomy without confirmation of appendicitis** *Appendicitis should be confirmed prior to appendicectomy. Where imaging is indicated, ultrasound should be considered first-line, followed by CT or MRI as appropriate* There was general agreement with the clinical criteria for this intervention, including from the Royal College of Surgeons of England and the Royal College of Radiologists. Some suggestions were received which asked for clarification which have been responded to by: — Clarifying the appropriate diagnostic accuracy and appropriate imaging pathway e.g. that CT can be used after an equivocal ultrasound and that MRI should can be considered if CT is contraindicated, where this specialist service is available, it is particularly useful for pregnant patients. — Explaining the potential role for non-operative management of acute appendicitis and how imaging can help identify which patients could be managed conservatively. — Five additional references were included to strengthen the evidence base. The RCS Eng and RCR have approved our reflections on the above feedback.
Orthopaedics – caring for bones and joints	
2S	**Tests to investigate low back pain** *Imaging for low back pain is rarely indicated* There was general agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association, the British Association of Spine Surgeons and the Royal College of Radiologists. Some suggestions were received which asked for clarification which have been responded to by: — Replacing the term of 'physiotherapy' with 'manual therapy' — Reordering the guidance to emphasise what might constitute serious underlying pathology in patients with low back pain — Clarifying that imaging should not routinely be offered in a non-specialist setting in the absence of red flags — Adding in a recommended duration of 3-6 months for a physical and psychological programme. The BOA, BASS and RCR have approved our reflections on the above feedback.
2T	**Tests to investigate knee pain** *Knee MRI should not be routinely used to initially investigate suspected osteoarthritis*

	There was general agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association and the British Association for Surgery of the Knee. Some suggestions were received asking for clarification and updates to the summary have been made to align with the main criteria. This has been approved by the BOA and BASK.
2U	**Tests to investigate knee pain** *Knee MRI should not be routinely used to initially investigate suspected meniscal tears* There was general agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association and the British Association for Surgery of the Knee. There were some suggestions for clarification and the summary has been updated to align with the main criteria, which has been approved by the BOA and BASK.
2V	**Vertebral augmentation (vertebroplasty or kyphoplasty) for painful osteoporotic vertebral fractures** *Vertebral augmentation (vertebroplasty or kyphoplasty) should be offered as a treatment for painful osteoporotic vertebral fractures on a case-by-case basis* There was general agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association and the British Association of Spine Surgeons. Some suggestions were received which asked for clarification which have been responded to by: — Expanding the scope of the guidance to apply to vertebral augmentation, which include both vertebroplasty and kyphoplasty — Clarifying risks of the procedure — Replacing the term of 'physiotherapy' with 'manual therapy' — Clarifying 'severe' pain in terms of the VAS scale — Including additional supportive evidence and trials. The BOA and BASS have approved our reflections on the above feedback.
2W	**Scans and Guided Injections for shoulder pain** *W(i): Scans for shoulder pain during routine care should only be offered under the guidance of a secondary care shoulder service.* *W(ii): Image guided shoulder injections should only be offered under the guidance a secondary care shoulder service.* Feedback was received outlining suggestions for clarification which have been responded to by changing the recommendation to reflect wording provided by the British Elbow and Shoulder Society including: — Expanding the recommendation to include the restriction of image guided injections for shoulder pain on the basis that evidence suggests no addition benefit over standard unguided injections — Expanding the list of red flags which give rise to an urgent referral — Adding wording to emphasise that BESS have treatment and referral guidelines for shoulder conditions, including imaging guidance.

	The BOA and BESS have approved our reflections on the above feedback.
2X	**MRI scan of the hip for arthritis** *MRI scan of the hip for arthritis is not indicated* There was general agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association and the British Hip Society. Some suggestions were received which asked for clarification which have been responded to by: — Updating the title to refer to osteoarthritis (rather than arthritis). — Expanded the list of conditions which warrant an MRI or urgent onward referral to include suspected osteonecrosis / avascular necrosis of the hip, suspected transient osteoporosis, or suspected periarticular soft tissue pathology e.g. abductor tendinopathy. The BOA and BHS have approved our reflections on the above feedback.
2Y	**Surgery to fuse the bones in the back** *Spinal fusion is not indicated for the treatment of non-specific, mechanical back pain* There was general agreement with the clinical criteria for this intervention, including from the British Orthopaedic Association and the British Association of Spine Surgeons. Some suggestions were received which asked for clarification which have been responded to by: — Replacing the term 'physiotherapy' with 'manual therapy' — Specifying the NICE exclusion criteria — Clarifying the final paragraph in the proposal section is referring to patients with non-specific low back pain. The BOA and BASS have approved our reflections on the above feedback.

Table 4C: Group C interventions where data are not currently available but are included because best available evidence suggests they are clinically ineffective unless performed in certain circumstances.

	Intervention and summary of changes
Paediatrics – caring for children	
2Z	**Helmet therapy for treatment of positional plagiocephaly/ brachycephaly in children** *Helmet therapy is not recommended in the treatment of non-synostotic/ positional plagiocephaly and brachycephaly in babies* There was agreement with the clinical criteria for this intervention, including from the Royal College of Paediatrics and Child Health. No feedback was received indicating any change was needed to the clinical guidance.

Anaesthetics – care before, during and after operations	
2 AA	**Chest X-ray before an operation** *Routine pre-operative chest X-ray is not indicated* There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society. No feedback was received indicating any change was needed to the clinical guidance.
2 BB	**Heart tracing (ECG) before an operation** *Routine pre-operative electrocardiogram (ECG) is not indicated* There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society. No feedback was received indicating any change was needed to the clinical guidance.
Blood tests	
2 CC	**Prostate-specific antigen (PSA) testing** *Routine PSA testing is not recommended in asymptomatic men that do not have risk factors associated with prostate cancer* There was agreement with the clinical criteria for this intervention, including from the British Association of Urological Surgeons. Some suggestions were received which asked for clarification which have been responded to by: — Clarification to confirm when PSA testing is or is not indicated. — Removal of some repetition to avoid confusion around when PSA testing is clinically indicated and appropriate. BAUS has approved our reflections on the above feedback.
2 DD	**Regular blood tests when taking cholesterol lowering tablets** *Blood analysis for patients taking lipid lowering therapy should be performed in accordance with this guidance* There was agreement with the clinical criteria for this intervention, including from the British Cardiovascular Society. Some suggestions were received which asked for clarification which have been responded to by: — Including a reference to the updated guidance from the European Cardiology Society. — Clarifying that ALT can be used as a measure of liver function. The BCS has approved our reflections on the above feedback.
2 EE	**Blood transfusions** *Red blood cell (RBC) transfusions should only be given where indicated and then in single-units unless there are exceptional circumstances* There was agreement with the clinical criteria for this intervention, including from the Royal College of Pathologists and the British Blood Transfusion Society. No feedback was received indicating any change was needed to the clinical guidance.

Appendix 3
Independent Expert Advisory Committee

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 scheme.[25] 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 2018.[26]

25. https://www.england.nhs.uk/contact-us/pub-scheme/

26. 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 interests[27] 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".[28]

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

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

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

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.

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 negligence.[29]

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 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

29. https://www.gov.uk/government/publications/governance-code-for-public-appointments

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 Elshaug.

Exclusion criteria

5. The following exclusion criteria are to be applied:

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 into 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.

Appendix 4
Coding methodology summary tables

Interventions where data are sufficiently robust[30] to determine rates of variation and set national activity goals using the same methodology as in the initial list of 17.[31]

2A – Diagnostic coronary angiography for low risk, stable chest pain	
Activity	
Estimated activity	— 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): — N-fold – 3.2 — 10th percentile – 22.0 — 25th percentile – 30.1 — 50th percentile – 41.4 — 90th percentile – 266.3
Codes	
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

30. 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.

31. 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.

Diagnosis codes	Exclude patients with: I20.0 – unstable angina I20.1 – angina pectoris with documented spasm I21.0 ST elevation (STEMI) myocardial infarction of anterior wall I21.1 ST elevation (STEMI) myocardial infarction of inferior wall I21.2 ST elevation (STEMI) myocardial infarction of other sites I21.3 ST elevation (STEMI) myocardial infarction of unspecified site I21.4 Non-ST elevation (NSTEMI) myocardial infarction I21.9 Acute myocardial infarction, unspecified I22.0 Subsequent ST elevation (STEMI) myocardial infarction of anterior wall I22.1 Subsequent ST elevation (STEMI) myocardial infarction of inferior wall I22.2 Subsequent non-ST elevation (NSTEMI) myocardial infarction I22.8 Subsequent ST elevation (STEMI) myocardial infarction of other sites I22.9 Subsequent ST elevation (STEMI) myocardial infarction of unspecified site I23.0 Hemopericardium as current complication following acute myocardial infarction I23.1 Atrial septal defect as current complication following acute myocardial infarction I23.2 Ventricular septal defect as current complication following acute myocardial infarction I23.3 Rupture of cardiac wall without hemopericardium as current complication following acute myocardial infarction I23.4 Rupture of chordae tendineae as current complication following acute myocardial infarction I23.5 Rupture of papillary muscle as current complication following acute myocardial infarction I23.6 Thrombosis of atrium, auricular appendage, and ventricle as current complications following acute myocardial infarction I23.7 Postinfarction angina I23.8 Other current complications following acute myocardial infarction I24.0 Acute coronary thrombosis not resulting in myocardial infarction I24.1 Dressler's syndrome I24.8 Other forms of acute ischemic heart disease I24.9 Acute ischemic heart disease, unspecified I25.1 Atherosclerotic heart disease of native coronary artery I25.2 Old myocardial infarction I25.3 Aneurysm of heart I25.4 Coronary artery aneurysm and dissection I25.5 Ischemic cardiomyopathy I25.6 Silent myocardial ischemia I25.7 Atherosclerosis of coronary artery bypass graft(s) and coronary artery of transplanted heart with angina pectoris I25.8 Other forms of chronic ischemic heart disease I25.9 Chronic ischemic heart disease, unspecified *(Note – cancer diagnoses are a global exclusion)*

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	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 OR I21.1 OR I21.2 OR I21.3 OR I21.4 OR I21.9 OR I22.0 OR I22.1 OR I22.2 OR I22.8 OR I22.9 OR I23.0 OR I23.1 OR I23.2 OR I23.3 OR I23.4 OR I23.5 OR I23.6 OR I23.7 OR I23.8 OR I24.0 OR I24.1 OR I24.8 OR I24.9 OR I25.1 OR I25.2 OR I25.3 OR I25.4 OR I25.5 OR I25.6 OR I25.7 OR I25.8 OR I25.9 AND Patient age >=19 years

SQL code	o 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]%') and isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120
Global cancer exclusion	**APC** (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]%' or apcs.der _ diagnosis _ all IS NULL)

2B – Repair of minimally symptomatic inguinal hernia	
Activity	

Estimated activity	— 54,764 episodes during 2018/19
	— Age/sex std rate per 100,000 – 92.2
	— Reduction opportunity: 8,168 (15%) based on 25th percentile of activity across CCGs.
	— Variation (age/sex std rates):
	  — N-fold – 1.5
	  — 10th percentile – 75.0
	  — 25th percentile – 82.4
	  — 50th percentile – 91.8
	  — 75th percentile – 110.8

Codes	
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 primary repair of inguinal hernia T20.9 Unspecified primary repair of inguinal hernia
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)	Adult (aged >=19 years) Exclude any patients admitted as a non-elective admission

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 AND Patient age >=19 years AND APCS.Admission_Method not like ['2%']

SQL code	`left(der.Spell _ Dominant _ Procedure,3)='T20'`
	`and der.Spell _ Primary _ Diagnosis like 'K40[29]%'`
	`and isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120`
	`and APCS.Admission _ Method not like ('2%')`

Global cancer exclusion	**APC**
	`(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]%' or apcs.der _ diagnosis _ all IS NULL)`

2C – Surgical intervention for chronic rhinosinusitis	
Activity	

Estimated activity	— 12,610 episodes during 2018/19
	— Age/sex std rate per 100,000 – 21.2
	— Reduction opportunity: 2,388 (19%) based on 25th percentile of activity across CCGs.
	— Variation (age/sex std rates):
	  — N-fold – 1.7
	  — 10th percentile – 15.4
	  — 25th percentile – 17.7
	  — 50th percentile – 20.9
	  — 90th percentile – 26.9

Codes	
Procedure codes	Y76.1 Functional endoscopic sinus surgery Y76.2 Functional endoscopic nasal surgery E12.1 Ligation of maxillary artery using sublabial approach E12.2 Drainage of maxillary antrum using sublabial approach E12.3 Irrigation of maxillary antrum using sublabial approach E12.4 Transantral neurectomy of vidian nerve using sublabial approach E12.8 Other specified operations on maxillary antrum using sublabial approach E12.9 Unspecified operations on maxillary antrum using sublabial approach E13.1 Drainage of maxillary antrum NEC E13.2 Excision of lesion of maxillary antrum E13.3 Intranasal antrostomy E13.4 Biopsy of lesion of maxillary antrum (we will leave in unless we hear otherwise) E13.5 Closure of fistula between maxillary antrum and mouth E13.6 Puncture of maxillary antrum E13.7 Neurectomy of vidian nerve NEC E13.8 Other specified other operations on maxillary antrum E13.9 Unspecified other operations on maxillary antrum E14.1 External frontoethmoidectomy E14.2 Intranasal ethmoidectomy E14.3 External ethmoidectomy E14.4 Transantral ethmoidectomy E14.5 Bone flap to frontal sinus E14.6 Trephine of frontal sinus E14.7 Median drainage of frontal sinus E14.8 Other specified operations on frontal sinus E14.9 Unspecified operations on frontal sinus E15.1 Drainage of sphenoid sinus E15.2 Puncture of sphenoid sinus E15.3 Repair of sphenoidal sinus E15.4 Excision of lesion of sphenoid sinus E15.8 Other specified operations on sphenoid sinus E15.9 Unspecified operations on sphenoid sinus E16.1 Frontal sinus osteoplasty E16.2 Drainage of frontal sinus NEC E16.8 Other specified other operations on frontal sinus E16.9 Unspecified other operations on frontal sinus E17.1 Excision of nasal sinus NEC E17.2 Excision of lesion of nasal sinus NEC E17.3 Biopsy of lesion of nasal sinus NEC E17.4 Lateral rhinotomy into nasal sinus NEC E17.8 Other specified operations on unspecified nasal sinusE17.9 Unspecified operations on unspecified nasal sinus E08.1 Polypectomy of internal nose
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

	J33.0 Polyp of nasal cavity J33.1 Polypoid sinus degeneration J33.8 Other polyp of sinus J33.9 Nasal polyp, unspecified *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Patients of all ages Exclude any patients admitted as a non-elective admission
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 OR Y76.2 OR E12.1 OR E12.2 OR E12.3 OR E12.4 OR E12.8 OR E12.9 OR E13.1 OR E13.2 OR E13.3 OR E13.4 OR E13.5 OR E13.6 OR E13.7 OR E13.8 OR E13.9 OR E14.1 OR E14.2 OR E14.3 OR E14.4 OR E14.5 OR E14.6 OR E14.7 OR E14.8 OR E14.9 OR E15.1 OR E15.2 OR E15.3 OR E15.4 OR E15.8 OR E15.9 OR E16.1 OR E16.2 OR E16.8 OR E16.9 OR E17.1 OR E17.2 OR E17.3 OR E17.4 OR E17.8 OR E17.9 OR E08.1

	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 OR J33.0 OR J33.1 OR J33.8 OR J33.9 AND APCS.Admission_Method not like ['2%']
SQL code	`(apcs.der _ procedure _ all like '%Y76[12]%' OR apcs.der _ procedure _ all like '%E1[2-7][1-9]%' OR apcs.der _ procedure _ all like '%E081%') and der.Spell _ Primary _ Diagnosis like 'J3[23]%' and APCS.Admission _ Method not like ('2%')`
Global cancer exclusion	**APC** `(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]%' or apcs.der _ diagnosis _ all IS NULL)`

2D – Removal of adenoids for treatment of glue ear	
Activity	

Estimated activity	— 2,778 episodes during 2018/19
	— Age/sex std rate per 100,000 – 4.7
	— Reduction opportunity: 1,426 (51%) based on 25th percentile of activity across CCGs.
	— Variation (age/sex std rates):
	  — N-fold – 5.5
	  — 10th percentile – 1.6
	  — 25th percentile – 2.5
	  — 50th percentile – 4.4
	  — 90th percentile – 8.9

Codes	
Procedure codes	E20.1 Total adenoidectomy E20.4 Suction diathermy adenoidectomy E20.8 Other specified operations on adenoid E20.9 Unspecified operations on adenoid With: D15.1 Myringotomy with insertion of ventilation tube through tympanic membrane
Diagnosis codes	H65.2 Chronic serous otitis media H65.3 Chronic mucoid otitis media H65.4 Other chronic nonsuppurative otitis media H65.9 Unspecified nonsuppurative otitis media H66.1 Chronic tubotympanic suppurative otitis media H66.3 Other chronic suppurative otitis media H66.4 Suppurative otitis media, unspecified H66.9 Otitis media, unspecified H68.1 Obstruction of Eustachian tube H69.8 Other specified disorders of Eustachian tube H69.9 Unspecified Eustachian tube disorder Exclusions: 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 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 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 *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Adult (aged >=19 years) Exclude any patients admitted as a non-elective admission
Will the procedure be carried out in OP or as APC?	Admitted Patient Care

Coding logic	Procedure codes in any position are: E20.1 OR E20.4 OR E20.8 OR E20.9 AND D15.1 AND Primary diagnosis code is: H65.2 H65.3 H65.4 H65.9 H66.1 H66.3 H66.4 H66.9 H68.1 H69.8 H69.9 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 AND Patient age <19 AND APCS.Admission_Method not like ['2%']

SQL code	apcs.der _ procedure _ all like '%E20[1489]%' and apcs.der _ procedure _ all like '%D151%' and (der.Spell _ Primary _ Diagnosis like 'H65[2349]%' OR der.Spell _ Primary _ Diagnosis like 'H66[1349]%' OR der.Spell _ Primary _ Diagnosis like 'H681%' OR der.Spell _ Primary _ Diagnosis like 'H69[89]%') 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)<=18 and APCS.Admission _ Method not like ('2%')
Global cancer exclusion	**APC** (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]%' or apcs.der _ diagnosis _ all IS NULL)

2E – Arthroscopic surgery for meniscal tears	
Activity	

Estimated activity	— 38,088 episodes during 2018/19
	— Age/sex std rate per 100,000 – 64.1
	— Reduction opportunity: 8,964 (24%) based on 25th percentile of activity across CCGs.
	— Variation (age/sex std rates):
	  — N-fold – 2.4
	  — 10th percentile – 40.8
	  — 25th percentile – 53.2
	  — 50th percentile – 66.8
	  — 90th percentile – 97.5

Codes	
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)	Patients of all ages Exclude any patients admitted as a non-elective admission
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	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 AND APCS.Admission_Method not like ['2%']
SQL code	`left(der.Spell _ Dominant _ Procedure,3)='W82' and (der.Spell _ Primary _ Diagnosis like '%M23[23]%' or der.Spell _ Primary _ Diagnosis like '%S832%') and APCS.Admission _ Method not like ('2%')`
Global cancer exclusion	**APC** `(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]%' or apcs.der _ diagnosis _ all IS NULL)`

2G – Surgical removal of kidney stones	
Activity	

Estimated activity	— 14,456 episodes during 2018/19
	— Age/sex std rate per 100,000 – 24.3
	— Reduction opportunity: 3,092 (21%) based on 25th percentile of activity across CCGs.
	— Variation (age/sex std rates):
	  — N-fold – 2.1
	  — 10th percentile – 16.2
	  — 25th percentile – 19.9
	  — 50th percentile – 24.3
	  — 90th percentile – 34.4

Codes	
Procedure codes	Surgical treatments M09.4 Endoscopic extraction of calculus of kidney NEC M09.8 Other specified M16.4 Percutaneous nephrolithotomy NEC M26.1 Nephroscopic laser fragmentation of calculus of ureter M26.2 Nephroscopic fragmentation of calculus of ureter NEC M26.3 Nephroscopic extraction of calculus of ureter M27.1 Ureteroscopic laser fragmentation of calculus of ureter M27.2 Ureteroscopic fragmentation of calculus of ureter NEC M27.3 Ureteroscopic extraction of calculus of ureter M27.8 Other specified M28.1 Endoscopic laser fragmentation of calculus of ureter NEC M28.2 Endoscopic fragmentation of calculus of ureter NEC M28.3 Endoscopic extraction of calculus of ureter NEC M28.4 Endoscopic catheter drainage of calculus of ureter M28.5 Endoscopic drainage of calculus of ureter by dilation of ureter M28.8 Other specified M28.9 Unspecified
Diagnosis codes	N20.0 Calculus of kidney N20.1 Calculus of ureter N20.2 Calculus of kidney with calculus of ureter N20.9 Urinary calculus, unspecified *(Note – cancer diagnoses are a global exclusion)*
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	Where procedure code in dominant position is: M09.4 OR M09.8 OR M16.4 OR M26.1 OR

	M26.2 OR M26.3 OR M27.1 OR M27.2 OR M27.3 OR M27.8 OR M28.1 OR M28.2 OR M28.3 OR M28.4 OR M28.5 OR M28.8 OR M28.9 AND Primary diagnosis code is: N20.0 OR N20.1 OR N20.2 OR N20.9 AND Patient age >=19 years
SQL coding	(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
Global cancer exclusion	**APC** (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]%' or apcs.der _ diagnosis _ all IS NULL)

2H – Cystoscopy for men with uncomplicated lower urinary tract symptoms	
Activity	

Estimated activity	— 43,704 episodes during 2018/19
	— Age/sex std rate per 100,000 – 73.6
	— Reduction opportunity: 32,143 (74%) based on 25th percentile of activity across CCGs.
	— Variation (age/sex std rates):
	  — N-fold – 14.1
	  — 10th percentile – 13.6
	  — 25th percentile – 20.6
	  — 50th percentile – 37.3
	  — 90th percentile – 191.3

Codes	
Procedure codes	M45.5 Diagnostic endoscopic examination of bladder using rigid cystoscope M45.8 Other specified diagnostic endoscopic examination of bladder M45.9 Unspecified diagnostic endoscopic examination of bladder Exclusions: 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
Diagnosis codes	Not available *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Male Adult (aged >=19 years) Exclude any patients admitted as a non-elective admission
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Where procedure code in dominant position is: M45.5 OR M45.8 OR M45.9 AND Procedure codes in any position are NOT: 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 rigid cystoscope M45.4 Diagnostic endoscopic examination of bladder and biopsy of lesion of bladder using rigid cystoscope AND Patient gender is male AND Patient age >=19 years AND APCS.Admission_Method not like ['2%']

SQL code	`left(der.Spell _ Dominant _ Procedure,3)='M45'`
	`and apcs.sex=1`
	`AND apcs.der _ procedure _ all NOT LIKE '%M45[1-4]%'`
	`and isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120`
	`and APCS.Admission _ Method not like ('2%')`

Global cancer exclusion	**APC**
	`(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]%' or apcs.der _ diagnosis _ all IS NULL)`

2I – Surgical intervention for Benign Prostatic Hypertrophy (BPH)	
Activity	

Estimated activity	— 14,561 episodes during 2018/19
	— Age/sex std rate per 100,000 – 24.5
	— Reduction opportunity: 4,363 (30%) based on 25th percentile of activity across CCGs.
	— Variation (age/sex std rates):
	  — N-fold – 2.2
	  — 10th percentile – 15.2
	  — 25th percentile – 18.3
	  — 50th percentile – 23.6
	  — 90th percentile – 33.3

Codes	
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 open excision of prostate M61.9 Unspecified open excision of prostate 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 vapotrode M65.8 Other specified endoscopic resection of outlet of male bladder M65.9 Unspecified endoscopic resection of outlet of male bladder 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 Exclude: C61 Malignant neoplasm of prostate *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Male Adult (aged >=19 years) Exclude any patients admitted as a non-elective admission
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Procedure code in dominant position is: M61.1 OR M61.2 OR M61.3 OR M61.4 OR M61.8 OR M61.9 OR M64.1 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

	AND Primary diagnosis code is: N40 Hyperplasia of prostate AND Diagnosis code in any position is NOT: C61 Malignant neoplasm of prostate AND Patient gender is male AND Patient age >=19 years AND APCS.Admission_Method not like ['2%']

SQL code	`l(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 '%M66[12]%'`
	`or left(der.Spell _ Dominant _ Procedure,4) like '%M68[13]%')`
	`and der.Spell _ Primary _ Diagnosis like '%N40%'`
	`and apcs.sex=1`
	`and isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120`
	`and APCS.Admission _ Method not like ('2%')`

Global cancer exclusion	**APC**
	`(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]%' or apcs.der _ diagnosis _ all IS NULL)`

2J – Lumbar Discectomy	
Activity	

Estimated activity	— 2,291 episodes during 2018/19
	— Age/sex std rate per 100,000 – 3.9
	— Reduction opportunity: 1,353 (59%) based on 25th percentile of activity across CCGs.
	— Variation (age/sex std rates):
	  — N-fold – 8.7
	  — 10th percentile – 1.0
	  — 25th percentile – 1.7
	  — 50th percentile – 3.5
	  — 90th percentile – 8.5

Codes	
Procedure codes	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 excision of unspecified intervertebral disc V33.9 Unspecified excision of unspecified intervertebral disc V35.1 Primary excision of intervertebral disc NEC V35.8 Other specified excision of unspecified intervertebral disc V35.9 Unspecified excision of unspecified intervertebral disc V51.1 Primary direct lateral excision of lumbar intervertebral disc and interbody fusion of joint of lumbar spine V51.8 Other specified other primary excision of lumbar intervertebral disc V51.9 Unspecified other primary excision of lumbar intervertebral disc 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 V58.3 Primary automated percutaneous mechanical excision of lumbar intervertebral disc V58.8 Other specified V58.9 Unspecified V60.3 Primary percutaneous decompression using coblation to lumbar intervertebral disc

	V60.8 Other specified primary percutaneous decompression using coblation to intervertebral disc V60.9 Unspecified primary percutaneous decompression using coblation to intervertebral disc V55.1 One level of spine V55.2 Two levels of spine V55.3 Greater than two levels of spine V55.8 Other specified levels of spine V55.9 Unspecified levels of spine
Diagnosis codes	M51.0 Lumbar and other intervertebral disc disorders with myelopathy M51.1 Lumbar and other intervertebral disc disorders with radiculopathy M54.1 Radiculopathy M54.3 Sciatica M54.4 Lumbago with sciatica *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Adult (aged >=19 years) Exclude any patients admitted as a non-elective admission
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Where the procedure code in dominant position is: 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 V51.8 OR V51.9 OR V52.1 OR V52.2 OR V52.5 OR V52.8 OR V52.9 OR V58.3 OR V58.8 OR V58.9 OR V60.3 OR V60.8 OR V60.9 OR

	AND Procedure code in any position is: V55.1 V55.2 V55.3 V55.8 V55.9 AND Primary diagnosis code is: M51.0 OR M51.1 OR M54.1 OR M54.3 OR M54.4 AND Patient age >=19 years AND APCS.Admission_Method not like ['2%']

SQL code	`left(der.Spell _ Dominant _ Procedure,4) in ('V331','V332','V333','V334','V335','V336','V337','V338','V339','V351','V358','V359','V511','V518','V519','V521','V522','V525','V528','V529','V583','V588','V589','V603','V608','V609')`
	`and (der.Spell _ Primary _ Diagnosis like '%M51[01]%' or der.Spell _ Primary _ Diagnosis like '%M54[134]%')`
	`and isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120`
	`and APCS.Admission _ Method not like ('2%')`
	`AND (der _ procedure _ all LIKE '%V55[12389]%')`

Global cancer exclusion	**APC**
	`(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]%' or apcs.der _ diagnosis _ all IS NULL)`

2K – Lumbar radiofrequency facet joint denervation	
Activity	

Estimated activity	— 1,612 episodes during 2018/19
	— Age/sex std rate per 100,000 – 2.7
	— Reduction opportunity: 1,379 (86%) based on 25th percentile of activity across CCGs.
	— Variation (age/sex std rates):
	  — N-fold – 23.2
	  — 10th percentile – 0.3
	  — 25th percentile – 0.7
	  — 50th percentile – 2.0
	  — 90th percentile – 7.7

Codes	
Procedure codes	V485: Radiofrequency controlled thermal denervation of spinal facet joint of lumbar vertebra V487: Radiofrequency controlled thermal denervation of spinal facet joint of vertebra NEC Z675: Lumbar intervertebral joint Z676: Lumbosacral joint Z677: Sacrococcygeal joint Z993: Intervertebral disc of lumbar spine
Diagnosis codes	M518: Other specified intervertebral disc disorders M519: Intervertebral disc disorder, unspecified M545: Low back pain M549: Dorsalgia, unspecified *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Adult (aged >=19 years) Exclude any patients admitted as a non-elective admission
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Where procedure code in dominant position is: V48.5 OR V48.7 AND Procedure code in any position is Z675 OR Z676 OR Z677 OR Z993 AND Primary diagnosis code is: M518 OR M519 OR M545 OR

	M549 AND Primary diagnosis code is: M518 OR M519 OR M545 OR M549 AND Patient age >=19 years AND APCS.Admission_Method not like ['2%']

SQL code	`der.Spell _ Dominant _ Procedure like '%V48[57]%'`
	`and left(der.spell _ primary _ diagnosis,4) in ('M518','M519','M545','M549')`
	`and (apcs.der _ procedure _ all like '%Z67[567]%' or apcs.der _ procedure _ all like '%Z993%')`
	`and isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120`
	`and APCS.Admission _ Method not like ('2%')`

Global cancer exclusion	**APC**
	`(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]%' or apcs.der _ diagnosis _ all IS NULL)`

2L – Exercise electrocardiogram (ECG) for screening for coronary heart disease	
Activity	

Estimated activity	— 45,745 outpatient attendances during 2018/19
	— Age/sex std rate per 100,000 – 77.0
	— Reduction opportunity – 45,745 (100%)
	— Variation (age/sex std rates per 100,000):
	  — N-fold: 13.4
	  — 10th percentile – 11.5
	  — 25th percentile – 24.3
	  — 50th percentile – 56.8
	  — 90th percentile – 154.4

Codes	
Procedure codes	U19.4 Exercise electrocardiography
Diagnosis codes	Not available *[Note – cancer diagnoses are a global exclusion]*
Any other criteria [e.g. patient age]	Adult [aged >=19 years]
Will the procedure be carried out in OP or as APC?	Outpatient
Coding logic	Procedure code in any position is: U19.4 AND Patient age >=19 years
SQL code	`OPA.Der _ Procedure _ All LIKE '%U194%' and isnull(OPA.Age _ at _ Start _ of _ Episode _ SUS,OPA.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120`
Global cancer exclusion	**OPA** `((opa.der _ diagnosis _ all not like '%C[0-9][0-9]%' and opa.der _ diagnosis _ all not like '%D0%' and opa.der _ diagnosis _ all not like '%D3[789]%' and opa.der _ diagnosis _ all not like '%D4[012345678]%') OR opa.Der _ Diagnosis _ All IS NULL)`

2M – Upper GI endoscopy	
Activity	

Estimated activity	— 644,038 episodes during 2018/19
	— Age/sex std rate per 100,000 – 1,084.1
	— Reduction opportunity: 81,391 [13%] based on 25th percentile of activity across CCGs.
	— Variation [age/sex std rates]:
	  — N-fold – 1.6
	  — 10th percentile – 884.6
	  — 25th percentile – 986.1
	  — 50th percentile – 1,112.7
	  — 90th percentile – 1,387.6

Codes	
Procedure codes	G16.1 Diagnostic fibreoptic endoscopic examination of oesophagus and biopsy of lesion of oesophagus G16.2 Diagnostic fibreoptic endoscopic ultrasound examination of oesophagus "G16.3 Diagnostic fibreoptic insertion of Bravo pH capsule into oesophagus " G16.8 Other specified diagnostic fibreoptic endoscopic examination of oesophagus G16.9 Unspecified diagnostic fibreoptic endoscopic examination of oesophagus "G19.1 Diagnostic endoscopic examination of oesophagus and biopsy of lesion of oesophagus using rigid oesophagoscope" G19.2 Diagnostic endoscopic insertion of Bravo pH capsule using rigid oesophagoscope G19.8 Other specified diagnostic endoscopic examination of oesophagus using rigid oesophagoscope G19.9 Unspecified diagnostic endoscopic examination of oesophagus using rigid oesophagoscope G45.1 Fibreoptic endoscopic examination of upper gastrointestinal tract and biopsy of lesion of upper gastrointestinal tract G45.2 Fibreoptic endoscopic ultrasound examination of upper gastrointestinal tract G45.3 Fibreoptic endoscopic insertion of Bravo pH capsule into upper gastrointestinal tract G45.4 Fibreoptic endoscopic examination of upper gastrointestinal tract and staining of gastric mucosa G45.8 Other specified diagnostic fibreoptic endoscopic examination of upper gastrointestinal tract G45.9 Unspecified diagnostic fibreoptic endoscopic examination of upper gastrointestinal tract G65.1 Diagnostic endoscopic examination of jejunum and biopsy of lesion of jejunum G65.8 Other specified diagnostic endoscopic examination of jejunum G65.9 Unspecified diagnostic endoscopic examination of jejunum G80.1 Diagnostic endoscopic examination of ileum and biopsy of lesion of ileum G80.2 Wireless capsule endoscopy G80.3 Diagnostic endoscopic balloon examination of ileum G80.8 Other specified diagnostic endoscopic examination of ileum G80.9 Unspecified diagnostic endoscopic examination of ileum
Diagnosis codes	Not available *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Adult (aged >=19 years) Exclude any patients admitted as a non-elective admission **[APC extract only]**

Will the procedure be carried out in OP or as APC?	Outpatient and Admitted Patient Care
Coding logic	**APC:** Procedure code in dominant position is: G16.1 OR G16.2 OR G16.3 OR G16.8 OR G16.9 OR G19.1 OR G19.2 OR G19.8 OR G19.9 OR G45.1 OR G45.2 OR G45.3 OR G45.4 OR G45.8 OR G45.9 OR G65.1 OR G65.8 OR G65.9 OR G80.1 OR G80.2 OR G80.3 OR G80.8 OR G80.9 AND Patient age >=19 years AND APCS.Admission_Method not like ['2%'] **OPA:** Procedure code in any position is: G16.1 OR G16.2 OR G16.3 OR G16.8 OR G16.9 OR G19.1 OR G19.2 OR G19.8 OR G19.9 OR G45.1 OR G45.2 OR G45.3 OR G45.4 OR G45.8 OR G45.9 OR G65.1 OR G65.8 OR G65.9 OR

	G80.1 OR G80.2 OR G80.3 OR G80.8 OR G80.9 AND Patient age >=19 years
SQL code	**APC extract** left(der.Spell _ Dominant _ Procedure,3) in ('G16','G19','G45','G65','G80') and isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120 and APCS.Admission _ Method not like ('2%') **OPA extract** left(der.Spell _ Dominant _ Procedure,3) in ('G16','G19','G45','G65','G80') and isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120 and APCS.Admission _ Method not like ('2%')
Global cancer exclusion	**APC** (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]%' or apcs.der _ diagnosis _ all IS NULL) **OPA** ((opa.der _ diagnosis _ all not like '%C[0-9][0-9]%' and opa.der _ diagnosis _ all not like '%D0%' and opa.der _ diagnosis _ all not like '%D3[789]%' and opa.der _ diagnosis _ all not like '%D4[012345678]%') OR opa.Der _ Diagnosis _ All IS NULL)

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.[32]

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

2F – Troponin test for investigation of chest pain	
Activity	

Estimated activity	— 575,375 attendances during 2018/19
	— Age/sex std rate per 100,000 – 968.5
	— Reduction opportunity: Troponin testing is part of the COVID-19 testing protocol when someone presents in emergency care and therefore it is inappropriate to set a threshold.
	— Variation (age/sex std rates based on adjusted data):
	  — N-fold – 16.7
	  — 10th percentile – 116.6
	  — 25th percentile – 386.6
	  — 50th percentile – 990.7
	  — 90th percentile – 1,951.8

Codes	
Procedure codes	Emergency Care Dataset (ECDS) codes (SNOMED CT Identifier (SCTID)): Troponin measurement: 105000003 Troponin I measurement: 121870001 Troponin T measurement: 121871002 Plasma troponin I measurement: 313724009 Serum troponin I measurement: 313616005 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)	Patients of all ages
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 121871002 or 313724009 or 313616005 or 314068007 or 166794009 or 105001004 or 784261000000103
SQL code	ecds.Der_EC_Investigation_All like '%105000003%' or ecds.Der_EC_Investigation_All like '%121870001%' or ecds.Der_EC_Investigation_All like '%121871002%' 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%'

2N – Unnecessary colonoscopy & 20 – Repeat colonoscopy	
Activity	

Estimated activity	— 415,262[33] episodes during 2018/19
	— Age/sex std rate per 100,000 – 699.0
	— Reduction opportunity based on 25th percentile of activity across CCGs: not calculated.
	— Variation (age/sex std rates):
	  — N-fold – 1.6
	  — 10th percentile – 543.6
	  — 25th percentile – 612.4
	  — 50th percentile – 698.1
	  — 90th percentile – 850.1

Codes	
Procedure codes	H22.1 Diagnostic fibreoptic 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 H68.2 Diagnostic endoscopic examination of colonic pouch using colonoscope NEC 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 Exclusions: H68.1 Diagnostic endoscopic examination of colonic pouch and biopsy of colonic pouch using colonoscope H68.3 Diagnostic endoscopic examination of ileoanal pouch and biopsy of ileoanal pouch using colonoscope
Diagnosis codes	Exclusions: Z12.1 Encounter for screening for malignant neoplasm of intestinal tract *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Adult (aged >=19 years) Exclude any patients admitted as a non-elective admission **[APC extract only]**

33. 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.

Will the procedure be carried out in OP or as APC?	Outpatient and Admitted Patient Care
Coding logic	**APC:** Where procedure code in any position is: H22.1 OR H22.8 OR H22.9 OR H68.2 OR H68.4 OR H68.8 OR H68.9 AND Procedure code in any position is not: H68.1 OR H68.3 AND Diagnosis code in any position is not: Z121 AND Patient age >=19 years AND APCS.Admission_Method not like ['2%'] **OPA:** Where procedure code in any position is: H22.1 OR H22.8 OR H22.9 OR H68.2 OR H68.4 OR H68.8 OR H68.9 AND Procedure code in any position is not: H68.1 OR H68.3 AND Diagnosis code in any position is not: Z121 AND Patient age >=19 years
SQL code	**APC extract** (apcs.Der _ Procedure _ All like '%H22[189]%' or apcs.Der _ Procedure _ All like '%H68%') and apcs.der _ diagnosis _ all not like '%Z121%' and

	isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120 AND APCS.Der _ Procedure _ All NOT like '%H68[13]%' and APCS.Admission _ Method not like ('2%') **OPA extract** (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 AND opa.Der _ Procedure _ All NOT like '%H68[13]%'
Global cancer exclusion	**APC** (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]%' or apcs.der _ diagnosis _ all IS NULL) **OPA** ((opa.der _ diagnosis _ all not like '%C[0-9][0-9]%' and opa.der _ diagnosis _ all not like '%D0%' and opa.der _ diagnosis _ all not like '%D3[789]%' and opa.der _ diagnosis _ all not like '%D4[012345678]%') OR opa.Der _ Diagnosis _ All IS NULL)

2P – Early endoscopic retrograde cholangiopancreatography (ERCP) in acute gallstone pancreatitis without cholangitis	
Activity	

Estimated activity	— 308 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):
	  — N-fold – 7.2[34]
	  — 10th percentile – 0.2
	  — 25th percentile – 0.4
	  — 50th percentile – 0.6
	  — 90th percentile – 1.5

Codes	
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 diagnostic endoscopic retrograde examination of bile duct and pancreatic duct J43.9 Unspecified diagnostic endoscopic retrograde examination of bile duct and pancreatic duct
Diagnosis codes	K85.1 Biliary acute pancreatitis
Any other criteria (e.g. patient age)	The procedure occurs within the first 3 days of admission Adult >= 19 years
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Where the procedure code in any position is: J43.1 OR J43.2 OR J43.3 OR J43.8 OR J43.9 AND Diagnosis code in any position is: K85.1

34. For this intervention, CCGs with zero activity were excluded in the n-fold (CCG variation) calculation.

	AND The procedure date is 3 days or fewer after the admission date. AND The patient age is >= 19 years
SQL code	isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120 and apcs.Administrative _ Category<>'02' and apcs.Discharge _ Date BETWEEN (select min(startdate) from #Datelookup) and (select max(enddate) from #Datelookup) AND apcs.[Der _ Procedure _ All] LIKE '%J43[12389]%' --Diagnosis 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)
Global cancer exclusion	**APC** (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]%' or apcs.der _ diagnosis _ all IS NULL)

2Q – Cholecystectomy	
Activity	

Estimated activity	— 2,056 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):
	  — N-fold – 5.3
	  — 10th percentile – 1.2
	  — 25th percentile – 2.0
	  — 50th percentile – 3.3
	  — 90th percentile – 6.3

Codes	
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)	Adult (aged >=19 years)
Will the procedure be carried out in OP or as APC?	Admitted Patient Care

Coding logic	Dominant procedure code is: J18.1 OR J18.2 OR J18.3 OR J18.4 OR J18.5 OR J18.8 OR J18.9 AND Primary diagnosis code is: K85.1 AND The patient age is >= 19 years
SQL code	`Der.Spell _ Dominant _ Procedure like '%J18%' and der.Spell _ primary _ diagnosis like '%K851%' and isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120`
Global cancer exclusion	**APC** `(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]%' or apcs.der _ diagnosis _ all IS NULL)`

2R – Appendicectomy without confirmation of appendicitis	
Activity	

Estimated activity	— 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):
	  — N-fold – 1.5
	  — 10th percentile – 64.1
	  — 25th percentile – 72.5
	  — 50th percentile – 80.3
	  — 90th percentile – 97.1

Codes	
Procedure codes	H01 Emergency excision of appendix H02 Other excision of appendix

Diagnosis codes	Not available *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Patients of all ages
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	Dominant procedure code is: H01 OR H02
SQL code	`Der.spell _ dominant _ procedure like '%H0[12]%'`
Global cancer exclusion	**APC** `(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]%' or apcs.der _ diagnosis _ all IS NULL)`

2S – Low back pain imaging	
Activity	

Estimated activity	— 253,956 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):
	  — N-fold – 50.6
	  — 10th percentile – 23.1
	  — 25th percentile – 55.5
	  — 50th percentile – 183.0
	  — 90th percentile – 1,168.3

Codes	
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 *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)	Adult (aged >=19 years)
Will the procedure be carried out in OP or as APC?	Outpatient
Coding logic	Procedure code in any position is: U05.4 OR U05.5 OR U13.2 OR U13.3 OR U13.5 OR U13.6 OR U21.1 OR U21.2 OR U21.6 OR U21.7 With procedure code in any position: Z66.5 OR O16.2 AND Patient age >=19 years
SQL code	`(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`
Global cancer exclusion	**OPA** `((opa.der _ diagnosis _ all not like '%C[0-9][0-9]%' and opa.der _ diagnosis _ all not like '%D0%' and opa.der _ diagnosis _ all not like '%D3[789]%' and opa.der _ diagnosis _ all not like '%D4[012345678]%') OR opa.Der _ Diagnosis _ All IS NULL)`

2T – Knee MRI when symptoms are suggestive of osteoarthritis & 2U – Suspected degenerative meniscal tears	
Activity	
Estimated activity	— 80,315 episodes during 2018/19 — Age/sex std rate per 100,000 – 135.2 — Reduction opportunity based on 25th percentile of activity across CCGs: not calculated — Variation (age/sex std rates): — N-fold – 107.4 — 10th percentile – 4.2 — 25th percentile – 12.6 — 50th percentile – 51.7 — 90th percentile – 447.0
Codes	
Procedure codes	U133: MRI bone/joint: With site codes – Z84.6 Knee joint 013.2 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.** *M170: Primary gonarthrosis, bilateral* *M171 Other primary gonarthrosis, incl:* *Primary gonarthrosis:* — *NOS* — *Unilateral* *M179: Gonarthrosis, unspecified* *Exclusions* *M000, 1,2, 8 &9 infection* *M050-9 rheumatoid* *M060-9 inflammatory* *M070-9 reactive* *M020-9 arthropathies* *M030-9 post infection* *M100-9 gout* *M120-9 other arthropathies* *M130-9 other arthritis* *M140-9 diabetic/ neuropathic* *M150-9 polyarthrosis* *M172, 3, 4 & 5: gonarthrosis resulting from trauma or other secondary* *C402, 408, 409 neoplasm* *D162 neoplasm* *C765 neoplasm* *(Note – cancer diagnoses are a global exclusion)*

Any other criteria (e.g. patient age)	Adult (aged >=19 years)
Will the procedure be carried out in OP or as APC?	Outpatient
Coding logic	Procedure code in any position is: U133 With procedure in any position: Z84.6 OR O13.2 AND Patient age >=19 years
SQL code	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
Global cancer exclusion	**OPA** ((opa.der _ diagnosis _ all not like '%C[0-9][0-9]%' and opa.der _ diagnosis _ all not like '%D0%' and opa.der _ diagnosis _ all not like '%D3[789]%' and opa.der _ diagnosis _ all not like '%D4[012345678]%') OR opa.Der _ Diagnosis _ All IS NULL)

2V – Vertebral augmentation (vertebroplasty or kyphoplasty) for painful osteoporotic vertebral fractures	
Activity	

Estimated activity	— 303 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):
	  — N-fold – 7.6[35]
	  — 10th percentile – 0.2
	  — 25th percentile – 0.4
	  — 50th percentile – 0.7
	  — 90th percentile – 1.8

Codes	
Procedure codes	V44.4 Vertebroplasty of fracture of spine V55.1 One level of spine V55.2 Two levels of spine V55.3 Greater than two levels of spine V55.8 Other specified levels of spine V55.9 Unspecified levels of spine
Diagnosis codes	M80.0 Postmenopausal osteoporosis with pathological fracture M80.1 Postoophorectomy 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)	Adult (aged >=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 Procedure code in any position is: V55.1 V55.2

35. For this intervention, CCGs with zero activity were excluded in the n-fold (CCG variation) calculation.

	V55.3 V55.8 V55.9 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	**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 AND (der _ procedure _ all LIKE '%V55[12389]%')**
Global cancer exclusion	**APC** (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]%' or apcs.der _ diagnosis _ all IS NULL)

2W(i) – Scans for shoulder pain & 2W(ii) Image guided injections for shoulder pain	
Activity	

Estimated activity	**W(i) – scans for shoulder pain:**
	— 128,809 attendances during 2018/19
	— Age/sex std rate per 100,000 – 216.8
	— Reduction opportunity based on 25th percentile of activity across CCGs: not calculated.
	— Variation (age/sex std rates):
	  — N-fold – 84.2
	  — 10th percentile – 7.0
	  — 25th percentile – 18.7
	  — 50th percentile – 71.0
	  — 90th percentile – 579.7

	W(ii) – image guided injections for shoulder pain: — 2,934 attendances during 2018/19 — Age/sex std rate per 100,000 – 4.9 — Reduction opportunity based on 25th percentile of activity across CCGs: not calculated. — Variation (age/sex std rates): — N-fold – 43.4 — 10th percentile – 0.4[36] — 25th percentile – 0.8 — 50th percentile – 2.1 — 90th percentile – 17.5
Codes	
Procedure codes	**W(i) – scans for shoulder pain:** U13.2 Ultrasound of bone U13.3 Magnetic resonance imaging of bone U13.4 Plain x-ray of joint 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 Z81.2 Acromioclavicular joint Z81.3 Glenohumeral joint 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 Z54.2 Rotator cuff of shoulder Z54.8 Specified muscle of shoulder or upper arm NEC Z54.9 Muscle of shoulder or upper arm NEC Z68.8 Specified bone of shoulder girdle NEC Z68.9 Bone of shoulder girdle NEC **W(ii) – image guided injections for shoulder pain:** U13.2 Ultrasound of bone U13.3 Magnetic resonance imaging of bone U13.4 Plain x-ray of joint 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 Z81.2 Acromioclavicular joint Z81.3 Glenohumeral joint Z81.4 Shoulder joint Z81.8 Specified joint of shoulder girdle or arm NEC

36. For W(ii) – image guided injections for shoulder pain, CCGs with zero activity were excluded in the n-fold (CCG variation calculation.

	Z81.9 Joint of shoulder girdle or arm NEC Z89.1 Shoulder NEC Z54.2 Rotator cuff of shoulder Z54.8 Specified muscle of shoulder or upper arm NEC Z54.9 Muscle of shoulder or upper arm NEC *Z68.8 Specified bone of shoulder girdle NEC* *Z68.9 Bone of shoulder girdle NEC* *W90.3 Injection of therapeutic substance into joint + Shoulder* *W90.4 Injection into joint NEC + Shoulder*
Diagnosis codes	Not available *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Adult (aged >=19 years)
Will the procedure be carried out in OP or as APC?	Outpatient
Coding logic	**W(i) – scans for shoulder pain:** Where the procedure code in any position is: U13.2 OR U13.3 OR U13.4 OR U13.5 OR U13.6 OR U21.1 OR U21.2 OR U21.6 OR U21.7 AND The procedure code in any position is: Z81.2 OR Z81.3 OR Z81.4 OR Z81.8 OR Z81.9 OR Z89.1 OR Z54.2 OR Z54.8 OR Z54.9 OR Z68.8 OR Z68.9 AND The procedure code in any position is not: W903+Shoulder OR W904+Shoulder AND Patient age >= 19 years

	W(ii) – image guided injections for shoulder pain: Where the procedure code in any position is: U13.2 OR U13.3 OR U13.4 OR U13.5 OR U13.6 OR U21.1 OR U21.2 OR U21.6 OR U21.7 AND The procedure code in any position is: Z81.2 OR Z81.3 OR Z81.4 OR Z81.8 OR Z81.9 OR Z89.1 OR Z54.2 OR Z54.8 OR Z54.9 OR Z68.8 OR Z68.9 AND The procedure code in any position is: W903+Shoulder OR W904+Shoulder AND Patient age >= 19 years
SQL code	**W(i) – scans for shoulder pain:** (opa.Der _ Procedure _ All like '%U13[23456]%' or opa.Der _ Procedure _ All like '%U21[1267]%') and (opa.Der _ Procedure _ All like '%Z81[23489]%' or opa.Der _ Procedure _ All like '%Z891%' or opa.Der _ Procedure _ All like '%Z54[289]%' or opa.Der _ Procedure _ All like '%Z68[89]%') AND opa.Der _ Procedure _ All NOT LIKE '%W90[34]%' and ISNULL(opa.Age _ at _ Start _ of _ Episode _ SUS,opa.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120 **W(ii) – image guided injections for shoulder pain:** (opa.Der _ Procedure _ All like '%U13[23456]%' or opa.Der _ Procedure _ All like '%U21[1267]%') and (opa.Der _ Procedure _ All like '%Z81[23489]%' or opa.Der _ Procedure _ All like '%Z891%' or opa.Der _ Procedure _ All like '%Z54[289]%' or

	opa.Der _ Procedure _ All like '%Z68[89]%') AND opa.Der _ Procedure _ All LIKE '%W90[34]%' and ISNULL(opa.Age _ at _ Start _ of _ Episode _ SUS,opa.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120
Global cancer exclusion	**OPA** ((opa.der _ diagnosis _ all not like '%C[0-9][0-9]%' and opa.der _ diagnosis _ all not like '%D0%' and opa.der _ diagnosis _ all not like '%D3[789]%' and opa.der _ diagnosis _ all not like '%D4[012345678]%') OR opa.Der _ Diagnosis _ All IS NULL)

2X – MRI scan of the hip for arthritis	
Activity	

Estimated activity	— 13,352 attendances during 2018/19
	— Age/sex std rate per 100,000 – 22.5
	— Reduction opportunity based on 25th percentile of activity across CCGs: not calculated.
	— Variation (age/sex std rates):
	  — N-fold – 41.2
	  — 10th percentile – 1.4
	  — 25th percentile – 4.0
	  — 50th percentile – 12.1

Codes	
Procedure codes	U13.3 Magnetic resonance imaging of bone U21.1 Magnetic resonance imaging NEC Z84.3 Hip joint Z84.8 Specified joint of pelvis or upper leg NEC Z84.9 Joint of pelvis or upper leg NEC Z90.2 Hip 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.** *M160: primary coxarthrosis* *M161: other primary coxarthrosis, incl:* *Primary coxarthrosis:* — NOS — Unilateral *M169: Coxarthrosis, unspecified*

	Exclusions *M00 Pyogenic arthritis* *M02 Reactive arthropathies* *M03* Postinfective and reactive arthropathies in diseases classified elsewhere* *M05 Seropositive rheumatoid arthritis* *M06 Other rheumatoid arthritis* *M07* Psoriatic and enteropathic arthropathies* *M10 Gout* *M11 Other crystal arthropathies* *M12 Other specific arthropathies* *M13 Other arthritis* *M14* Arthropathies in other diseases classified elsewhere* *M15 Polyarthrosis* *Incl.:* *arthrosis with mention of more than one site* *Excl.:* *bilateral involvement of single joint (M16-M19)* *M16.2 Coxarthrosis resulting from dysplasia, bilateral* *M16.3 Other dysplastic coxarthrosis* *Incl.:* *Dysplastic coxarthrosis:* ** NOS* ** unilateral* *M16.4 Post-traumatic coxarthrosis, bilateral* *M16.5 Other post-traumatic coxarthrosis* *Incl.:* *Post-traumatic coxarthrosis:* ** NOS* ** unilateral* *C40.2 Long bones of lower limb* *C40.8 Overlapping lesion of bone and articular cartilage of limbs* *C40.9 Bone and articular cartilage of limb, unspecified* *D16.2 Long bones of lower limb – benign neoplasm* *C76.5 Lower limb – malignant neoplasm* *(Note – cancer diagnoses are a global exclusion)*
Any other criteria (e.g. patient age)	Adult (aged >=19 years)
Will the procedure be carried out in OP or as APC?	Outpatients
Coding logic	Procedure code in any position is: U13.3 U21.1 AND Procedure code in any position: Z84.3 OR Z84.8 OR Z84.9 OR Z90.2 AND Patient age >= 19 years

SQL code	(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
Global cancer exclusion	**OPA** ((opa.der _ diagnosis _ all not like '%C[0-9][0-9]%' and opa.der _ diagnosis _ all not like '%D0%' and opa.der _ diagnosis _ all not like '%D3[789]%' and opa.der _ diagnosis _ all not like '%D4[012345678]%') OR opa.Der _ Diagnosis _ All IS NULL)

2Y – Fusion surgery for mechanical axial low back pain	
Activity	

Estimated activity	— 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):
	  — N-fold – 4.5[37]
	  — 10th percentile – 0.1
	  — 25th percentile – 0.1
	  — 50th percentile – 0.3
	  — 90th percentile – 0.5

Codes	
Procedure codes	V38.2 Primary posterior interlaminar fusion of joint of lumbar spine V38.3 Primary posterior fusion of joint of lumbar spine NEC 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

37. For this intervention, CCGs with zero activity were excluded in the n-fold (CCG variation) calculation.

Diagnosis codes	Back pain M54.5 Low back pain M54.9 Dorsalgia, unspecified Exclusion codes: M87.2 Osteonecrosis due to previous trauma M40.0Postural kyphosis M40.10ther secondary kyphosis M40.20ther and unspecified kyphosis M41.0Infantile idiopathic scoliosis M41.1Juvenile idiopathic scoliosis M41.20ther idiopathic scoliosis M41.3Thoracogenic scoliosis M41.4Neuromuscular scoliosis M41.50ther secondary scoliosis M41.80ther forms of scoliosis M41.9Scoliosis, 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)	Adult (aged >=19 years) Exclude any patients admitted as a non-elective admission
Will the procedure be carried out in OP or as APC?	Admitted Patient Care
Coding logic	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 AND The diagnosis code in primary position is: M54.5 OR M54.9 AND Any diagnosis code in any position is NOT: M40.0 OR M40.1 OR 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 AND Patient age >= 19 years AND APCS.Admission_Method not like ['2%']
SQL code	`(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 apcs.der _ diagnosis _ all not like '%M872%' and isnull(APCS.Age _ At _ Start _ of _ Spell _ SUS,APCS.Der _ Age _ at _ CDS _ Activity _ Date) between 19 and 120 and APCS.Admission _ Method not like ('2%')`
Global cancer exclusion	**APC** `(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]%' or apcs.der _ diagnosis _ all IS NULL)`

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.

2Z – Helmet therapy for treatment of positional plagiocephaly/brachycephaly in children	
Activity	
Estimated activity	For interventions with fewer than 10 episodes during 2018/19, the activity and coding has not been included.

2AA – Pre-operative chest X-ray	
Activity	
Estimated activity	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.

2BB – Pre-operative electrocardiogram (ECG)	
Activity	
Estimated activity	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.

2CC – Prostate specific antigen (PSA) test	
Activity	
Estimated activity	No coding is available for the procedure, diagnoses or indications.

2DD – Liver function, creatinine kinase and lipid level tests – (Lipid lowering therapy)	
Activity	
What are we counting?	No coding is available for the procedure or indications.

No coding is available for the procedure or indications.	
Activity	
What are we counting?	No coding is available for the procedure or indications.

Academy of Medical Royal Colleges
10 Dallington Street
London
EC1V 0DB
United Kingdom

Telephone: +44 (0)20 7490 6810
Facsimile: +44 (0)20 7470 6811

Website: aomrc.org.uk

Registered Charity Number:
1056565