



Evidence-Based Interventions

**Draft proposals from the independent Expert Advisory Committee
to the Evidence-Based Intervention programme**

Evidence-Based Interventions

Engagement Document

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

This has been reviewed by the Plain English Campaign

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Overview

- Subject:** Evidence-Based Interventions programme draft proposals
- Scope of this document:** Tests, treatments and procedures (otherwise known as interventions) that should only be offered in situations described in this document.
- Purpose of this document:** To invite comments on 31 interventions described in this document with a view to making a final recommendation later this year.
- Who should read this:** Individuals or organisations that may be directly affected by or have an interest in the policies described. Specifically, this includes GPs, secondary care clinicians, allied health professionals, NHS commissioners and providers of NHS-funded services.
- Duration:** 6 weeks, starting 13 July 2020 ending 21 August 2020.
- How to respond or enquire about this document:** Enquiries and responses can be shared via an online form at: www.aomrc.org.uk/ebi
Or emailed to: EBI@aomrc.org.uk
- After the engagement exercise:** All responses will be taken into account and considered fully before deciding the final approach.
- Getting to this stage and previous engagement:** The independent Expert Advisory Committee provided independent advice to expand the EBI programme. The EBI programme is overseen by NHS Clinical Commissioners, the Academy of Medical Royal Colleges, The National Institute for Health and Care Excellence, and NHS England and NHS Improvement. In drafting an expanded list of interventions, the Medical Royal Colleges and specialist societies, clinical commissioners and patient groups including the Strategic Co-Production Group at NHS England and NHS Improvement, the Academy of Medical Royal Colleges patient and lay committee and The Patients Association¹ were consulted extensively. The

¹ In the context of this document, this refers to the Royal College of Anaesthetists (RCoA) including the Faculty of Pain Medicine; the Royal College of General Practitioners (RCGP); the Royal College of Pathologists (RCPath); the Royal College of Physicians (RCP) including British Gastroenterology Society (BSG), British Cardiovascular Society (BCS), British Society of Haematology (BSH); the Royal College of Paediatrics and Child Health (RCPCH) including British Association for Paediatric Otolaryngology (BAPO), British Association of Perinatal Medicine (BAPM); the Royal College of Radiologists (RCR) including British Medical Ultrasound Society (BMUS), British Society of Cardiovascular Imaging (BSCI), British Society of Cardiovascular Computed Tomography (BSCCT), British Society for Gastrointestinal and Abdominal Radiology (BSGAR), British Society of Thoracic Imaging (BSTI), British Society of Interventional Radiology (BSIR); the Royal College of Surgeons of England (RCS) and Federation of Surgical Specialty Associations (FSSA) including Association of Anaesthetists, Association of Coloproctology of Great Britain and Ireland (ACPGBI), Association of Surgeons of Great Britain and Ireland (ASGBI), Association of Upper Gastrointestinal Surgery (AUGIS), Great Britain and Ireland Hepato Pancreato Biliary Association (GBIHPBA), Pancreatic Society of Great Britain and Ireland (PSGBI); British Orthopaedic Association (BOA) including British Association for Surgery of the Knee (BASK), British Elbow and Shoulder Society (BESS), British Association of Spine Surgeons (BASS), British Hip Society (BHS)), British Association of Urological Surgeons

engagement exercise will be independently led by the Expert Advisory Committee and supported by the Academy of Medical Royal Colleges.

(BAUS); British Association of Otolaryngology (ENTUK); British Blood Transfusion Society (BBTS); NHS Blood and Transplant (NHSBT); Craniofacial Society of Great Britain and Ireland (CFSGBI); Bladder Health UK, Versus Arthritis, Prostate Cancer UK; GUTS UK; Chartered Society of Physiotherapists (CSP); British Heart Foundation (BHF).

Foreword

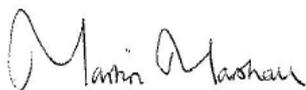
1. The NHS workforce has a remarkable record in providing safe, effective and equal care for everyone. But, like many healthcare systems around the world, the NHS is facing significant day-to-day challenges, made worse by the outbreak of Covid-19 and the resulting effects on health and social care.
2. While it is for society to decide the level of resources that should be committed to meet this growing demand, we all have a duty to make sure 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 is the most appropriate and clinically effective.
3. In 2018, the Evidence-Based Interventions (EBI) programme was established as a joint enterprise between four national partners: the Academy of Medical Royal Colleges (AoMRC), NHS Clinical Commissioners (NHS CC), the National Institute for Health and Care Excellence (NICE) and NHS England and Improvement (NHS E/I).
4. Clinical evidence is the foundation of the programme and so we, a new and independent Expert Advisory Committee, were formed in May 2019. Our task was to expand the programme and make recommendations. During 2019, we developed and agreed an approach to examining tests, treatments and procedures that are only proven to be clinically appropriate in certain circumstances when specific criteria are met.
5. The aims of the programme are to improve the quality of care patients receive by:
 - taking account of the best available evidence about whether a clinical intervention is appropriate.
 - making sure clinical interventions are offered to the right person for the right reasons and when the correct clinical criteria are met.
 - encouraging patients and clinicians to consider alternatives which are proven to be safer or more effective, or in some cases, doing nothing; and.
 - making sure tests, treatments and procedures are carried out more uniformly across the country, to avoid unnecessary differences.
6. In line with the aims of the EBI programme, we aim to work with systems, commissioners, providers and patients to do the following:
 - Reduce avoidable harm to patients. The risk of complications from clinical interventions can never be entirely eliminated. Weighing the risks and benefits of appropriate treatments should be done jointly with patients. When

deciding what is right for them, patients should have the opportunity to discuss with their doctor the risks, benefits and alternatives, and what will happen if they do nothing.

- Save precious professional time. When the NHS is severely short-staffed, professionals should only offer appropriate and effective treatment to patients. If resources are used on treatments that are not appropriate, fewer resources can be allocated to tests, treatments and procedures that are often more effective or deliver better outcomes for patients.
 - Achieve the best value possible and avoid waste. Inappropriate care is poor value for the taxpayer. Resources should be focused on effective and appropriate NHS services.
 - Help clinicians maintain their professional practice and keep up to date with changing evidence and best practice.
 - Create room for innovation. To speed up how quickly new and proven innovations can be taken on board, the NHS should reduce the number of inappropriate interventions. This allows innovation in prescribing and technology to improve patients' ability to care for themselves and live with long-term conditions.
7. We identified a list of 31 interventions to consult the public on. This document represents our work, and we are now inviting comments on the proposals in it.
8. Once the consultation period is complete, we will consider the responses that have been submitted and make a final recommendation. We believe that the impact of Covid-19 on the NHS has reinforced the importance of our work. The necessary pause in elective care to deal with the pressures of Covid-19 has resulted in longer waiting lists. As treatments are rescheduled, it is critical that clinicians' time is freed from providing inappropriate care to focus on providing effective care to people who need it.

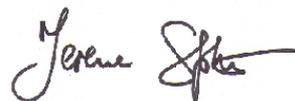
Signatures

Expert Advisory Committee



Professor Martin Marshall

Chair of the Royal College of General Practitioners

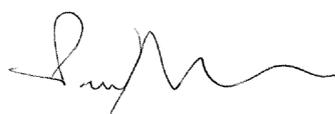


Professor Sir Terence Stephenson

Chair of Health Research Authority



Professor Derek Alderson



Dr Paul Chrisp



Professor Adam Elshaug



Pam Essler

[to follow]

Dr Ash Paul



Professor Danny Keenan



Dr Josephine Sauvage



Catherine Thompson



April Wareham



Dr Tim Wilson

The independent Expert Advisory Committee

9. As healthcare evolves, it is right that all tests, treatments and procedures offered by the NHS are reviewed to see if they are effective and appropriate. At the same time, with an ever-growing demand on the healthcare system, it is important that doctors take responsibility for making the best use of the resources that are available, in line with the General Medical Council's guidance for doctors, '*Good Medical Practice*'.²
10. Our independent Expert Advisory Committee was set up by the four partners of the EBI programme in May 2019. It is chaired jointly by Professor Sir Terence Stephenson, former Chair of the General Medical Council and current Chair of the Health Research Authority, and Professor Martin Marshall, Chair of the Royal College of General Practitioners. It includes senior clinicians, patient representatives, leading experts on value in healthcare, and clinical commissioners.
11. Our job is to independently:
- recommend a list of interventions in the NHS that are proven to be inappropriate and which should not be routinely commissioned, or should only be commissioned when specific clinical criteria are met;
 - draft the clinical guidance based on firm evidence and agreement between patients, clinicians and commissioners;
 - carry out a public consultation on the guidance and use feedback from that consultation to produce final guidance on specific interventions that should not be routinely commissioned or the criteria for when they should be commissioned (or both);
 - put evidence-based guidance in place in a way that best reduces unnecessary and inappropriate interventions, and aim to provide a number of recommended procedures to be put into practice; and
 - promote the EBI programme as appropriate.
12. During 2019 we agreed our approach and the methodology we would use to carry out our task (see appendix 3 for further details). Using this approach, we identified an initial long-list of interventions from clinical evidence, including NICE guidance, Choosing Wisely recommendations,³ academic studies and clinical commissioning groups' policies on procedures of limited clinical effectiveness (PoLCE) collected

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

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

through NHS CC, suggestions from specialist clinicians, academics, commissioners, the views of 13 sustainability and transformation partnerships (STPs) and integrated care systems (ICSs) that support the EBI programme (known as our demonstrator community), feedback from the consultation we ran in 2018 on the first phase of EBI and in line with the Long Term Plan (National policy paper) priorities for quality of care and outcomes improvement.

13. We discussed the guidance for each test, treatment or procedure, taking account of the following:

- advice from the medical royal colleges, specialist societies, clinicians, clinical commissioners, professional leaders and specialist medical charities;
- opinions from patients, gained by working with patients and patient representative groups (including the Strategic Co-Production Group at NHS England and NHS Improvement, the Academy of Medical Royal Colleges' Patient and Lay Committee and the Patients Association) to test the proposals and understand patients' priorities;
- the number of interventions, geographical differences, strength of evidence and pace of change that we could use to put guidance in place relatively quickly and on a large scale;
- the views of commissioners and providers as well as partner teams in NHS England and Improvement, such as Getting It Right First Time (GIRFT) and RightCare, on what are reasonable actions to put in place to encourage the change needed in health systems to put the guidance in place;
- the importance of focusing on shared decision-making and self-care, where clinicians and patients work together to decide on treatments based on clinical evidence and patients' preferences once they have been given the appropriate information.

14. The list of 31 interventions outlined in the following section represents our work so far, and we would like your views on these proposals. We will consult the individuals and groups listed in paragraph 13 above again and host a series of webinars. Based on the feedback we receive; we will update the proposals later in the year before submitting them as a final recommendation.

15. The detail of medical interventions is often complicated, so we have provided explanations in the clinical guidance in appendix 2. The guidance aims to summarise in what circumstances we may recommend interventions, where they should not be done at all, and where more appropriate alternatives should replace them in line with best available evidence.

16. You can find our terms of reference and methodology in appendix 3.

31 new interventions

17. When developing the list of 31 interventions and associated guidance, we received comments from the medical royal colleges, clinical commissioners and patient groups. As with the initial list of 17 interventions published in 2018,⁴ the interventions fall into two categories:

- Category-1 interventions – those interventions that should not be routinely commissioned by CCGs or carried out, unless a successful individual funding request (IFR) is made.
- Category-2 interventions – those interventions which are only effective in certain situations when specific clinical criteria are met.

18. The proposed list of 31 interventions is broader than the initial list of 17 as it includes tests and treatments as well as medical procedures. In some cases, we found the quality and availability of data was limited. As a result, we have put the 31 interventions into three groups as follows:

(A) Interventions for which enough data is available to determine the amount and how different they are across healthcare systems, can be used to establish a target goal for activity using the same methodology as in the initial list of 17 interventions. There are 13 interventions in this category;

(B) Interventions for which data is available to determine the amount and how different they are across healthcare systems, but for which more work is needed (for example, linking with additional data sets such as the diagnostic imaging data set) to establish target goals for activity. There are 12 interventions in this category

(C) Interventions for which data is not currently available, but for which further data sets are being explored to assess their accessibility and quality. There are six interventions in this category.

19. One of the programme's strengths is the ability to use data and measurement to inspire improvement and guide how interventions are put in place. However, we felt that despite the limitations of the data, the clinical evidence is clear and, depending on feedback, national guidance should be issued for all 31 proposed interventions. Where the quality of the data means that we cannot accurately measure how

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

guidance is put in place, we propose that the data should be improved by working with experts in systems and the public in line with the programme's aim for continuous improvement. For further details on data and measurement, including a detailed explanation of the programme's methodology, see 'Measurement for additional interventions' on page 22 - 29 and appendix 5.

20. We have developed guidance on the further 31 interventions and have set out summaries of those interventions in tables 1A to 1C below. The interventions are grouped by data quality rather than by category 1 or category 2. For full clinical guidance, see appendix 2.

Table 1A: Interventions where data are sufficiently robust to measure implementation of the guidance.

	Test, treatment or procedure	Recommendation	Summary
Cardiology – caring for the heart			
A	Invasive angiogram to investigate stable chest pain	<i>Diagnostic angiogram should not be used as first-line investigation for low risk, stable chest pain</i>	<p>Invasive diagnostic angiogram should not be used as first-line investigation in patients with low-risk, stable chest pain where clinical assessment alone cannot rule out a diagnosis of stable angina. Invasive angiogram can sometimes cause haematoma and exposes the patient to radiation. Instead, CT coronary angiography should be offered. This test is safe and reliable and exposes the patient to a lower dose of radiation.</p> <p>Invasive coronary angiography should be offered to patients who have significant findings on a CT coronary angiogram, or if further non-invasive imaging shows it is necessary.</p>
General surgery			
B	Surgery for inguinal hernia	<i>Repair of minimally symptomatic inguinal hernia is not indicated</i>	<p>It is not appropriate to repair a hernia that has minimal symptoms. Delaying surgery until and if symptoms increase is acceptable. Urgent problems with hernia, for example acute hernia incarcerations, where the bowel gets trapped in the hernia, are rare, and patients who develop symptoms have no greater risk of complications from an operation than those undergoing hernia repair to prevent symptoms.</p> <p>'Watchful waiting' is a safe option for people with minimal symptoms of an inguinal hernia (hernia in the groin). Many people with an</p>

			inguinal hernia have minimal or no symptoms and may never need surgery.
ENT – surgery on the ear, nose and throat			
C	Surgery for sinusitis	<i>Surgical intervention for chronic sinusitis is rarely indicated</i>	<p>Endoscopic sinus surgery should only be considered if medical treatment has failed. Surgery carries some risks, including bleeding, infection, scar tissue and, very rarely, orbital (eye socket) injuries or cerebrospinal fluid leak (with the associated risk of meningitis). There is also a risk of symptoms recurring after surgery and having to continue with medical treatment to maintain improvement.</p> <p>First-line treatment for sinusitis is maximal medical therapy, which should include intranasal steroids and nasal saline irrigation. In the case of chronic rhinosinusitis with nasal polyposis (CRSwNP), a trial of a short course of oral steroids should also be considered.</p>
D	Removal of the adenoids	<i>Removal of the adenoids is rarely indicated</i>	<p>NICE guidance recommends that adenoidectomy should not be carried out to treat glue ear if the patient has no persistent or frequent upper respiratory tract symptoms. The benefits to hearing compared with grommets alone are very limited. Risks of adenoidectomy include damage to teeth, lips or gums, bleeding (usually only minor and which resolves itself) and, rarely, speech problems.</p> <p>Adenoidectomy is advised in some children, as described in this guidance (for example, if the child has persistent or frequent upper respiratory tract symptoms).</p>
Orthopaedics – caring for bones and joints			
E	Surgery to treat knee problems	<i>Arthroscopic surgery for meniscal tears should be performed following the published BASK clinical guidelines</i>	<p>Most patients with a degenerate meniscal tear should not have arthroscopic meniscectomy as first-line treatment. Instead, patient education, physiotherapy, weight-loss advice and muscle-strengthening exercises are extremely effective. Paracetamol and non-steroidal anti-inflammatories (gels, sprays and so on) should also be tried. Many patients treated this way will improve and do not need surgery.</p>

			<p>However, surgery is advised for patients with:</p> <ul style="list-style-type: none"> • a tear that can be repaired; • a locked knee; or • mechanical symptoms and a tear (shown by an MRI scan) that does not respond to three months of non-surgical treatment. <p>Arthroscopic surgery carries a small risk of serious complications, including infection and deep vein thrombosis.</p>
Blood tests			
F	Specialised blood tests (troponin) for investigation of chest pain	<i>Troponin blood testing should be used to diagnose acute myocardial infarction only where a clinical diagnosis of acute coronary syndrome is suspected or for prognosis in pulmonary embolism</i>	<p>Troponin testing should be used to diagnose acute myocardial infarction (heart attack). Where troponin tests are used for anything other than suspected acute coronary syndrome they are rarely associated with cardiac disease, cause unnecessary investigations, and increase the length of hospital stays.</p> <p>Troponin testing should only be used if a clinical diagnosis of acute coronary syndrome is suspected, or for prognostic purposes when pulmonary embolism is confirmed.</p>
Urology – caring for the parts of the body that make urine			
G	Removal of stones from the kidneys	<i>Shockwave lithotripsy (SWL) or surgical intervention for treatment for kidney stones should only be offered according to this guidance</i>	<p>How kidney stones are managed depends on the type, size and location of the stone, as well as whether the patient has any other medical condition or is pregnant, for example.</p> <p>Some stones can be observed to see if they pass spontaneously. However, if treatment is advised, SWL should be considered first, unless a patient's condition means it would be unwise. SWL is non-invasive and so has fewer major negative effects than surgery. If SWL is not appropriate or effective, surgery such as ureteroscopy (URS) and percutaneous stone surgery can be considered.</p>
H	Camera test of the bladder in men	<i>Cystoscopy for men with uncomplicated lower urinary tract</i>	Cystoscopy should not be offered routinely to men with LUTS. Cystoscopy can cause temporary discomfort, occasional pain, and

		<i>symptoms (LUTS) should only be offered according to this guidance</i>	<p>blood in the urine, and is associated with a small risk of infection.</p> <p>Assessment should initially focus on a thorough history and examination, alongside the use of a frequency and volume chart, urine dipstick analysis and the International Prostate Symptom Score, if appropriate. This assessment may be started in primary-care settings.</p>
I	Surgery for enlarged prostate	<i>Surgical intervention for Benign Prostatic Hypertrophy should only be offered according to this guidance</i>	<p>Surgery should only be offered to men with severe voiding symptoms, or when other conservative management options and drug treatment have been unsuccessful. Complications of surgery vary and include discomfort, bleeding and, rarely, urinary incontinence.</p> <p>Men considering surgery should be counselled thoroughly about the outcomes and about any alternatives to surgery.</p>
Back pain treatment – caring for the back			
J	Spinal surgery for a slipped disc	<i>Discectomy is only recommended in carefully selected patients according to this guidance</i>	<p>Discectomy should only be offered to patients with signs and symptoms of a compressed nerve root that last more than six weeks, despite best efforts to relieve them. Complications of discectomy include dural tear, nerve root damage, bleeding and infection. Generally, the symptoms of a compressed nerve will settle without an operation.</p> <p>Primary-care management typically includes reassurance, advice on physical activity, weight loss, pain relief, physiotherapy, and screening patients (for example, through STaRT Back) who are at high risk of developing chronic pain.</p>
Orthopaedics – caring for bones and joints			
K	A procedure to numb nerves for low back pain	<i>Radiofrequency facet joint denervation is rarely indicated</i>	<p>Radiofrequency facet joint denervation is only recommended to manage chronic lower back pain when non-surgical treatment has failed, and the main source of pain is thought to come from one or more degenerate facet joints. Risks of facet joint injections include bleeding and infection or, rarely, damage to nerves or the spinal cord.</p>

			Physiotherapy, with appropriate psychological therapies if necessary, should be considered as an early intervention to support the patient.
Cardiology – caring for the heart			
L	Treadmill test for heart disease	<i>Exercise ECG is not recommended for screening for coronary heart disease</i>	Exercise ECG should not be used to screen patients who have no symptoms of coronary heart disease (or are at low risk) because there is very little probability of it identifying disease. Instead, risk calculators such as systematic coronary risk evaluation (SCORE) are recommended to identify patients who are at greater risk of coronary heart disease.
Gastroenterology – care of the digestive system			
M	Endoscopy to investigate gut problems	<i>Upper GI endoscopy should not be used as first line for investigation of suspected gastrointestinal disease</i>	Upper GI endoscopy should not be used as first-line investigation in all patients. Endoscopy is an invasive procedure that is not always well tolerated and carries significant risks. It should be offered only as recommended in guidance from NICE and the British Society for Gastroenterology (as included in this guidance). Non-invasive tests and procedures such as urea breath-testing or stool antigen testing should be used instead, if appropriate.

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

	Test, treatment or procedure	Recommendation	Summary
Gastroenterology – care of the digestive system			
N	Colonoscopy of the lower intestine	<i>Colonoscopy should only be offered to at risk people identified through risk stratification</i>	Colonoscopy should not be used as first-line investigation in all patients. Colonoscopy is an invasive procedure which carries a small risk of serious complications, for example a perforated intestine. Colonoscopy should be offered only as recommended by the British Society for Gastroenterology (as included in this guidance). Instead, risk stratification is recommended to identify those patients at risk, and non-invasive tests and other procedures such as a faecal immunochemical test (FIT test) should

			be used as first-line investigation where appropriate.
O	Follow up colonoscopy of the lower intestine	<i>Surveillance colonoscopy should only be offered to at risk people identified through risk stratification</i>	Follow-up colonoscopy is not always recommended following surgical resection of colorectal lesions. Colonoscopy is an invasive procedure which carries a small risk of serious complications, for example a perforated intestine. Follow-up colonoscopy should be offered only as recommended by the British Society for Gastroenterology (as included in this guidance). Instead, risk stratification is recommended to identify patients who need follow-up colonoscopy.
General surgery – operations on the stomach and intestines			
P	Test of the gallbladder	<i>Early endoscopic retrograde cholangiopancreatography (ERCP) is not indicated for investigation of acute gallstone pancreatitis without cholangitis</i>	ERCP should not be used when investigating acute gallstone pancreatitis where there is no evidence of cholangitis or ongoing obstruction of the biliary tree. ERCP is a very invasive procedure and includes risks such as pancreatitis and bleeding. Instead, clinical observation is recommended, as many gallstones are passed spontaneously. If there is clinical deterioration, delayed ERCP can be advised.
Q	Removal of an inflamed gallbladder	<i>Cholecystectomy should be considered on the same admission as acute cholecystitis or gallstone pancreatitis</i>	In patients with acute cholecystitis or gallstone pancreatitis, the gallbladder should be removed (without discharging the patient). This reduces the rate of gallstone-related complications recurring (for example, Gram-negative bloodstream infections in patients with mild gallstone pancreatitis) and carries a very low risk of cholecystectomy-related complications. In patients with mild biliary pancreatitis, removing the gallbladder (without discharging the patient) significantly reduces the rate of gallstone-related complications recurring, from 17% to 5%.
R	Tests to confirm appendicitis	<i>Appendicitis should be confirmed prior to appendicectomy. Imaging is indicated in some patients, with ultrasound as first-line, followed by</i>	Where patients present with symptoms of appendicitis, a scan should only be offered if appendicitis is not confirmed after clinical history, physical examination and blood analysis. If a patient's symptoms are vague or uncommon, a scan should be requested to

		<i>CT or MRI as appropriate</i>	confirm appendicitis. Ultrasound is preferred as a first-line investigation. However, CT may be more appropriate in older patients (who are more likely to have more than one condition which shares similar signs and symptoms) or patients with a high BMI (where ultrasound is not possible). MRI should be considered if the patient is not suitable for CT and ultrasound is not possible. Appropriate scanning in line with this guidance can reduce unnecessary surgery and associated complications.
Orthopaedics – caring for bones and joints			
S	Tests to investigate low back pain	<i>Imaging for low back pain is rarely indicated</i>	Scans for lower back pain should be offered only where serious underlying disease is suspected. If no red flags are present after the patient's medical history has been assessed and they have been examined, scans should not be offered. Scans can lead to further unnecessary investigations and treatment, including surgery and increased risk of harm. Instead, conservative management of low back pain, including physiotherapy and weight loss, is recommended.
T & U	Tests to investigate knee pain	<i>Knee MRI should not be routinely used to initially investigate knee pain. An MRI scan may be required to identify pathology within the knee in secondary care</i>	<p>MRI is not usually needed to manage knee pain initially, except in the limited circumstances described in this guidance.</p> <p>If a patient presents with symptoms of knee osteoarthritis or degenerate meniscal tear and no uncommon features or red flags are present, an initial diagnosis can be made by clinical assessment only. Non-surgical treatment should be offered instead, including exercise, therapy, weight loss, bracing, topical or oral pain relief, and injections into the joint.</p> <p>If imaging is needed to confirm the diagnosis of osteoarthritis, weight-bearing x-rays should be the first line of investigation.</p> <p>Patients with persistent arthritic mechanical knee symptoms should be referred to secondary care for weight-bearing x-rays. If x-rays show minimal change, an MRI scan of the knee should be used to investigate early arthritis, isolated cartilage lesions, osteonecrosis or other disease. If a meniscal</p>

			tear is suspected, an MRI scan should be used. An MRI scan is also required in some patients who are being investigated in secondary care before having partial joint replacement.
V	Procedures to build up brittle spine bones	<i>Vertebroplasty should not be routinely offered for painful osteoporotic vertebral fractures</i>	Vertebroplasty should not be routinely offered as a treatment for painful osteoporotic fractures of the spine. Instead, conservative management should be offered, including pain relief, bracing and physiotherapy. Normal healing takes between two and 12 weeks. Risks related to vertebroplasty include cement leaking, which can cause pulmonary embolism, and compressed nerves or spinal cord. The procedure may be complicated by haemorrhage, infection, fractured ribs or sternum, haemothorax or pneumothorax.
W	Scans for shoulder pain	<i>Imaging for shoulder pain should be offered under the guidance of shoulder specialists where possible</i>	X-rays are the only appropriate radiological investigations for shoulder pain in primary, intermediate and secondary care. Ultrasound, MRI and CT scans are only recommended after consultation with the local specialist shoulder service or by referrals made through them. Guided shoulder injections should only be offered in secondary care and with guidance from the specialist shoulder service where possible.
X	MRI scan of the hip for arthritis	<i>MRI scan of the hip for arthritis is not indicated</i>	Hip MRIs should not be requested when patient history, examination and x-ray show typical features of osteoarthritis. MRI scans rarely add useful information to guide diagnosis or treatment. Requesting MRI scans can cause unnecessary anxiety and prolong waiting times for patients. It can also delay MRI scans for appropriate patients.
Y	Surgery to fuse the bones in the back for back pain	<i>Spinal fusion is not indicated for the treatment of non-specific, mechanical back pain</i>	Fusion of the spine is not recommended as treatment for mechanical axial back pain in the absence of a focal structural pathology and consistent mechanical or neurological symptoms. Complications include infection, bleeding and sometimes pseudarthrosis if the fusion doesn't work and the back-pain returns.

			Primary-care management typically includes reassurance, advice on physical activity and weight loss, pain relief, physiotherapy, and screening patients (for example, through STaRT Back) who are at high risk of developing chronic pain.
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Table 1C: Interventions where data are not currently available but are included because best available evidence suggests they are clinically ineffective unless performed in certain circumstances.

	Test, treatment or procedure	Recommendation	Summary
Paediatrics – caring for children			
Z	Helmets to reshape flat heads in babies	<i>Helmet therapy is not recommended in the treatment of non-synostotic/positional plagiocephaly and brachycephaly in babies</i>	<p>Helmets should not be used to reshape flat heads in babies because they are not proven to affect the natural course of skull growth. Helmets may be associated with significant risks, such as pain and pressure sores, and may affect the bond between baby and parents.</p> <p>Instead, pressure can be reduced on the flattened head by changing the baby’s position while they are awake.</p>
Anaesthetics – care before, during and after operations			
AA	Chest X-ray before an operation	<i>Routine pre-operative chest X-ray is not indicated</i>	<p>Chest x-rays should not be routinely carried out in adults before planned surgery. They are labour-intensive, produce false results and may cause anxiety for patients, delays in treatment and further unnecessary investigation or treatment.</p> <p>Chest x-rays before surgery are appropriate in certain circumstances, for example if the patient is having cardiac or thoracic surgery.</p>
BB	Heart tracing (ECG) before an operation	<i>Routine pre-operative electrocardiogram (ECG) is not indicated</i>	<p>ECGs should not be routinely carried out before planned surgery in low-risk adults who do not have heart disease. They are labour-intensive and may cause anxiety for patients, delays in treatment and further unnecessary investigation or treatment.</p> <p>ECGs before surgery are appropriate in certain circumstances, for example if patients have a history of cardiovascular or renal (kidney) disease, or if they have diabetes.</p>

Blood tests			
CC	Prostate-specific antigen (PSA) testing	<i>PSA testing in asymptomatic patients is not recommended</i>	<p>Routine PSA testing in men who have no symptoms is not recommended. This is because the benefits of testing have not been shown to clearly outweigh the possible harm, which includes overdiagnosis, infection and complications of treatment for indolent disease. There is also a high risk of false positives.</p> <p>If PSA testing is advisable, or if the patient requests it, there should (ideally) first be a digital rectal examination and, after careful discussion about the possible risks and benefits of PSA testing (which allows the patient and his clinician to come to a decision together), a PSA blood test.</p>
DD	Regular blood tests when taking tablets to lower cholesterol	<i>Blood analysis for patients taking lipid lowering therapy should be performed in accordance with this guidance</i>	<p>Creatine kinase testing Routine monitoring of creatine kinase is not advised in people who have no symptoms and who are taking lipid-lowering therapy.</p> <p>Liver function testing Routine monitoring of liver function tests in people with no symptoms is not advised after 12 months of starting lipid-lowering therapy.</p> <p>Lipid testing Routine monitoring of lipid levels is not always advised in people who have no symptoms after three months of starting lipid-lowering therapy.</p> <p>A yearly non-fasting blood test for non-HDL cholesterol should be considered.</p>
EE	Blood transfusions	<i>Red blood cell (RBC) transfusions should only be given where indicated and then in single-units unless there are exceptional circumstances</i>	Blood transfusion can be advised if a patient has a shortage of red blood cells. NICE recommends restrictive thresholds and single-unit transfusion for adults (or the equivalent based on body weight for children or adults with low body weight) who are not actively bleeding, do not have acute coronary syndrome or need regular blood transfusions for chronic anaemia. Restrictive thresholds do not apply to some patients, as described in this guidance.

			<p>Possible risks and harm associated with red blood cell transfusions include pulmonary complications (where giving two or more 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 transfusions with a restrictive transfusion trigger. This means the safest option is to transfuse a single unit and check the blood level. There is no need to give more units if the blood level is satisfactory.</p>
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21. The Committee will revise the list of interventions following any additional feedback received.

Engagement questions
<p><i>Question 1. Would you like to make any suggestions of interventions to be included in future guidance? If so, why? Please provide supporting evidence.</i></p> <p><i>Question 2. Through the EBI programme, what positive and negative impact will the proposed recommendations make to improving access, experience and outcomes for the following groups and how can any risks be mitigated to ensure the changes do not worsen health inequalities for:</i></p> <ul style="list-style-type: none"> • <i>Groups protected under the Equality Act 2010: age; disability; gender reassignment; marriage and civil partnership; pregnancy and maternity; race; religion or belief; sex; sexual orientation?</i> • <i>Those individuals who experience health inequalities such as people who are homeless or insecurely housed, former prisoners, gypsy, Roma, traveller, veterans and carers?</i>

22. The complete list of questions can be found at page 32.

Measuring improvements

23. The list of 31 interventions broadens the range of the programme by, for example, including diagnostic procedures, and so changes how we monitor how they are put into practice. Measuring how these additional interventions are put in place is not always as straightforward as for the 17 interventions published in 2018.⁵
24. The agreed evidence-based interventions methodology for monitoring activity is based on calculating the age-sex standardised activity rate of each intervention performed in secondary-care settings for every 100,000 people. By looking at the age-sex standardised activity rate, we can be sure that any differences we are seeing in the data are not due to the age or gender make-up of an area.
25. For the category-1 interventions in the list of 17, 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 that the relevant commissioner has approved an IFR. We recognise that some interventions may not be suitable for IFRs, for example, due to the urgency of clinical need or funding pathways.
26. Of the list of 31 interventions, there are two category-1 interventions (exercise ECG and helmet therapy). The remaining 29 are category-2 interventions. The nature of the two category-1 interventions and the quality of the data supporting them is limited. They do not lend themselves to the level of measurement established by the programme because diagnostic codes cannot be identified for either procedure, and they are not suitable for tariff changes (NHS Tariff payment system is a set of prices and rules to help commissioners and providers of NHS care provide best value to their patients). Using IFRs to put the guidance in place for these two procedures may be challenging (see appendix 5 for further details).
27. In line with the aims and objectives of the programme to reduce patient harm and free up clinical time, it is recognised that for Category 2 interventions there is inappropriate activity at population level and the benefits of interventions should outweigh the risks. While there is limited first-hand evidence for clinically appropriate rates of intervention for an area, through public consultation in 2018 and based on comparable international practice, a target activity goal was set for Category 2 interventions. This was done by looking at activity (the age-sex standardised rate, see point 14 for explanation) across the CCGs in England for each Category 2 intervention and setting the target activity goal to be in the bottom quarter range of that activity or the 25th percentile.
28. Based on the above methodology, for 13 interventions, data is reliable enough to outline suggested activity levels. On that basis a total of 358,083 periods of activity

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

do not need to be reinstated from a total of 859,242 from before Covid-19. There are considerably more inappropriate interventions being performed for which there is enough data to establish total volume, but not enough to track activity levels. The total volume of that remaining activity is at least 921,765 periods. For those interventions where not enough data is available to achieve a goal, we welcome feedback on how to improve the data, for example, by using the diagnostic imaging data set.

29. The following tables contain a summary of the data and data-quality issues for the 31 interventions. For further details, see appendix 5.

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

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

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

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

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

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

G. Shockwave lithotripsy (SWL) or surgical intervention for treatment for kidney stones should only be offered according to this guidance	14,457 ¹⁰	24.3	2.1	3,220	Considered sufficiently robust to set a goal.
H. Cystoscopy for men with uncomplicated lower urinary tract symptoms (LUTS) should only be offered according to this guidance	50,685	85.3	11.7	31,687	Considered sufficiently robust to set a goal, though due to the high rate of intervention at the 90 th percentile, the 25 th percentile-based reduction opportunity is large.
I. Surgical intervention for Benign Prostatic Hypertrophy (BPH) should only be offered according to this guidance	14,562	24.5	2.4	4,096	Considered sufficiently robust to set a goal.
J. Discectomy is only recommended in carefully selected patients according to this guidance	3,488	5.9	6.7	1,942	Considered sufficiently robust to set a goal
K. Radiofrequency facet joint denervation is rarely indicated	1,618	2.7	21.6 ¹¹	1,247	Considered sufficiently robust to set a goal, however exploring the option of using additional data such as Diagnostic Imaging Dataset (DIDs), expected to be available later this year.
L. Exercise electrocardiogram (ECG) is not recommended for screening for coronary heart disease	49,095	82.6	14.5	49,095	A 'do not do' intervention according to NICE guidelines and therefore activity should be zero. However, outpatient data is not sufficiently robust to code diagnoses for this procedure.
M. Upper GI endoscopy should not be used as first-line for investigation of suspected gastrointestinal disease	20,772	35.0	2.7	6,966	Considered sufficiently robust to set a goal, however exploring the option of using additional data such as DIDs, expected to be available later this year.
Sub-total – for this category of intervention	859,242	-	-	358,083	-

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

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

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

Description	No. of spells - 2018/19	Age / sex std rate per 100,000 – 2018/19	CCG Variation (n-fold)	Activity reduction opportunity (based on 25 th percentile)	Comments (including future actions to improve data / coding)
N. Colonoscopy should only be offered to at risk people identified through risk stratification	445,981	750.7	1.5	-	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures. Exploring the option of using additional datasets.
O. Surveillance colonoscopy should only be offered to at risk people identified through risk stratification					
P. Early endoscopic retrograde cholangiopancreatography (ERCP) is not indicated for investigation of acute gallstone pancreatitis without cholangitis	310	0.5	Not calculated ¹³	-	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures as figure appears low. Exploring the option of using additional data such as DIDs, expected to be available later this year.
Q. Cholecystectomy should be considered on the same admission as acute cholecystitis or gallstone pancreatitis	2,085	3.5	6.4	-	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures as figure appears low. This may not represent all cases of elective cholecystectomy following acute admission. Exploring longitudinal analysis to improve data.
R. Appendicitis should be confirmed prior to appendicectomy. Where imaging is indicated in some patients, with ultrasound as first-line, followed by CT or MRI as appropriate	47,605 ¹⁴	80.1	1.6	-	Appendicectomy data coding sufficient but we are unable to identify which appendicectomies have been supported by a confirm diagnosis. Exploring options to improve data on imaging through DIDs data later this year.
S. Imaging for low back pain is rarely indicated	253,957 ¹⁵	427.5	59.8	-	Currently there is no diagnostic data in outpatients so indication for low back pain imaging not clear. Exploring the option of using additional data, such as DIDs, expected to be available later this year.

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

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

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

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

T. Knee MRI should not be used to diagnose osteoarthritis	80,808	136.0	105.9	-	Currently there is no diagnostic data in outpatients so indication for knee MRI is not clear. Exploring the option of using additional data, such as DIDs, expected to be available later this year.
U. Knee MRI should not be used to diagnose meniscal tears					
V. Vertebroplasty should not be routinely offered for painful osteoporotic vertebral fractures	304	0.5	Not calculated ¹⁶	-	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures. Figures appear low and are subject to further analysis.
W. Imaging for shoulder pain should be offered under the guidance of shoulder specialists where possible	75,388	126.9	84.2		Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures. Exploring the option of using additional data, such as DIDs, expected to be available later this year.
X. MRI scan of the hip for arthritis is not indicated	15,286	25.7	46.1	-	Unable to accurately identify diagnostic and procedure codes and produce reliable activity figures. Exploring the option of using additional data, such as DIDs, expected to be available later this year.
Y. Spinal fusion is not indicated for the treatment of non-specific, mechanical back pain	41 ¹⁷	0.1	Not calculated ¹⁸	-	Unable to identify diagnosis and procedure codes and therefore produce reliable activity figures. Figures appear low.
Sub-total – for this category of intervention	921,765	-	-	-	-

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

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

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

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

Description	No. of spells - 2018/19	Age / sex std rate per 100,000 – 2018/19	CCG Variation (n-fold)	Activity reduction opportunity (based on 25 th percentile)	Comments (including future actions to improve data / coding)
Z. Helmet therapy is not recommended in the treatment of non-synostotic/ positional plagiocephaly and brachycephaly in babies	See footnotes ¹⁹ ²⁰	-	-	-	A 'do not do' intervention according to NICE guidelines and therefore activity levels should be zero. Currently there is no diagnostic data in outpatients so indication for helmet therapy is not clear. However, it is rarely recommended, and numbers are thought to be low.
AA. Routine pre-operative chest X-ray is not indicated	-	-	-	-	Unable to accurately identify diagnostic and procedure codes and produce activity figures. Exploring the option of using linked Diagnostic Imaging Dataset (DIDs) data, expected to be available later this year.
BB. Routine pre-operative electrocardiogram is not indicated	-	-	-	-	Unable to accurately identify diagnostic and procedure codes and produce activity figures. Exploring the option of using additional data, such as DIDs, expected to be available later this year.
CC. Prostate-specific antigen (PSA) testing in asymptomatic men is not recommended	-	-	-	-	Unable to identify diagnosis and procedure codes and therefore produce activity figures. Exploring option of using alternative such as Patient Level Information Costing (PLICS) data.
DD. Blood analysis for patients taking lipid lowering therapy should be performed in accordance with this guidance	-	-	-	-	Unable to identify diagnosis and procedure codes and therefore produce activity figures. Exploring option of using alternative such as PLICS data.
EE. Red blood cell (RBC) transfusions should only be given where indicated and then in single-units unless there are exceptional circumstances	-	-	-	-	Unable to identify diagnosis and procedure codes and therefore produce activity figures. Exploring option of using alternative data such as NHS Blood and Transplant data.

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

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

Engagement Question

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

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

Putting the guidance into practice

32. We recognise that putting the EBI guidance into practice will need strong local leadership and good clinical judgement and will need to focus on delivering evidence-based care. Clinicians, commissioners, providers and patients across ICSs and STPs need to work together to put the guidance in place. As with the list of 17 interventions, we expect that local clinical governance arrangements will oversee this, with the support of regional medical directors. All CCGs, providers, ICSs and STPs should take steps to reduce the number of inappropriate interventions.
33. The programme continues to focus on changing behaviour and being more purposefully involved with those responsible for providing frontline care. Indeed, for the 31 additional interventions, there is a greater need for commissioners, providers and patients to share learning and support each other to encourage a joint approach to putting guidance into practice.
34. The implementation framework developed for the list of 17 interventions is broad and includes amendments to the NHS Standard Contract, updates to planning guidance, and including EBI in the CQC well-led inspection framework. However, due to Covid-19, much of this activity has been suspended until further notice.
35. Once we have gathered views and opinions on the 31 interventions, we will make a final recommendation to the four national programme partners. The medical royal colleges and specialist societies will share further information with their members on putting the criteria in place. Clinical champions will be identified across the health and care system to help pass on information across the system.
36. Involving GPs as well as other clinicians will be the key to testing whether the new programme is put in place successfully. Clearly, GPs will need to be familiar with the guidance when making referrals. Work will continue with the Royal College of General Practitioners to make sure GPs are told directly about the changes. This will include working with frontline GPs from the demonstrator community to understand how the interventions are being put into practice in primary-care settings.

Appendix 1: Glossary

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

Clinical Glossary

A

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

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

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

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

Appendicitis - Appendicitis is a painful swelling of the appendix.

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

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

Arrhythmias - Arrhythmias are abnormal heart rhythms.

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

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

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

B

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

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

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

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

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

C

Cholecystectomy - A surgical procedure that removes the gallbladder.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

D

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

Dural tear - Where the thin covering over the spinal cord is damaged.

Dyspepsia – Indigestion.

E

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

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

F

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

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

H

Haematoma - When the blood vessels under your skin are damaged and blood leaks out and pools, resulting in a bruise.

Haemothorax - A collection of blood between the chest wall and the lung cavity.

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

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

I

Indolent disease - A disease that causes no pain or other symptoms and is not causing immediate health effects.

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

Intermediate care - Care provided to patients who are medically stable but too unstable to be treated in alternative healthcare settings such as home, ambulatory, or a nursing home and need some rehabilitation or step-down care until they are stable enough to go home or elsewhere. (NIHR)

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

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

K

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

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

L

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

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

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

M

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

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

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

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

N

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

O

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

Osteonecrosis - When the bone tissue doesn't get enough blood supply and dies.

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

Overdiagnosis - Making people patients unnecessarily, by identifying problems that were never going to cause harm or by medicalising ordinary life experiences through expanded definitions of diseases. (BMJ)

P

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

Patient body habitus - Physique / Build.

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

Percutaneous - Through the skin.

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

Pneumothorax - A collapsed lung where air leaks into the space between the chest wall and the lung cavity.

Primary care services - Provide the first point of contact in the healthcare system, acting as the 'front door' of the NHS. Primary care includes general practice, community pharmacy, dental, and optometry (eye health) services. (NHS England)

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

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.

Pulmonary oedema - A condition caused by excess fluid on the lungs.

R

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

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

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

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

S

Secondary care - Sometimes referred to as 'hospital and community care', can either be planned (elective) care such as a cataract operation, or urgent and emergency care such as treatment for a fracture. (NHS Providers)

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

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

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

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

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

T

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

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

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

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

U

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

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

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

V

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

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

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

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