

# Evidence-based Interventions – Wave two

## Diagnostics One: Cardiology and Radiology

Introduction from Helen Stokes-Lampard, Chair  
of the Academy of Medical Royal Colleges

Prof Sir Terence Stephenson

Prof Martin Marshall

Dr Aoife Molloy



## Patient empowerment and improving shared decision-making

National EBI guidance provides recommendations on gold-standard care, but this should still be tailored to individuals. Each patient should have an individual-level discussion with their doctor and supported in shared decision-making for their own treatment and care.

## Prioritisation of care to support COVID-19 recovery and reduce patient harm

EBI guidance is based on NICE and NICE-accredited guidance and makes up to date recommendations based on the best available evidence. Implementation of the EBI guidance can aid national plans for COVID-19 recovery by supporting decision-making.

## Access to evidence-based tests, treatments and procedures

Due to the increased pressures on the health and care system following the COVID-19 pandemic access to health and social care may be reduced, including for the interventions we are proposing and their alternatives [for example, physiotherapy and community based care]. We are working with NICE, patients and clinicians to ensure the best available evidence is put into practice and patients have the best possible outcomes.

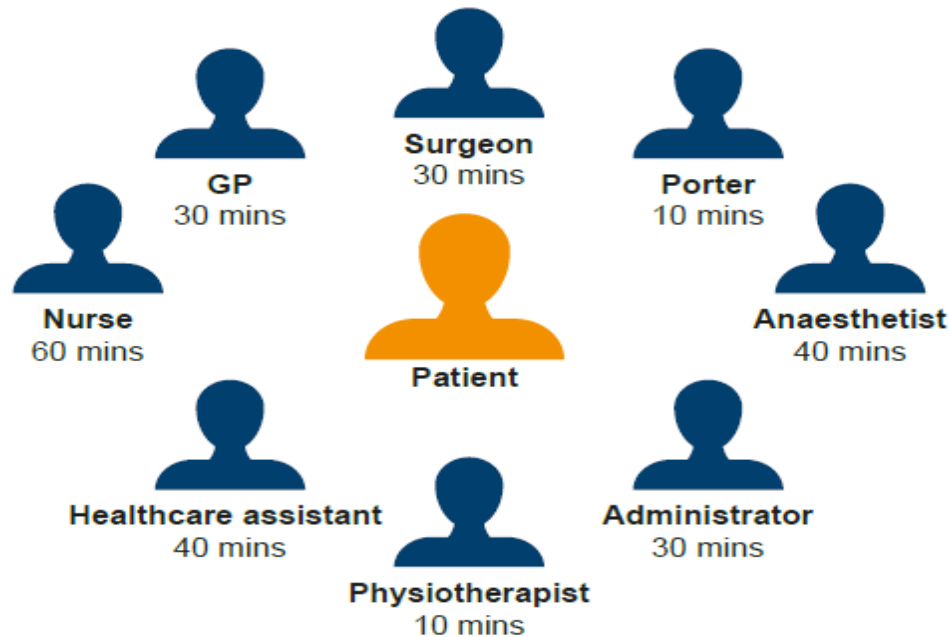
## Data analysis

Measuring uptake of guidance is always challenging. We are continuously improving our data analysis and feedback in collaboration with NHS Digital, GIRFT, HQIP and commissioners and CSUs and welcome any suggestions you can share with us.

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# Knee arthroscopy for patients with osteoarthritis

**Knee arthroscopy should not be used as treatment for osteoarthritis because it is clinically ineffective**



Average NHS time taken for 1 procedure: **370mins** per patient  
In 2017/18 we carried out **3,432** procedures which amounts to **881 days**

A clinically-led Expert Advisory Committee was established in May 2019 to provide independent leadership, advice and guidance to the EBI programme.

## Committee membership

### Chairs

- Professor Sir Terence Stephenson, Chair of the Health Research Authority
- Professor Martin Marshall, Chair of the Royal College of General Practitioners

### Membership includes

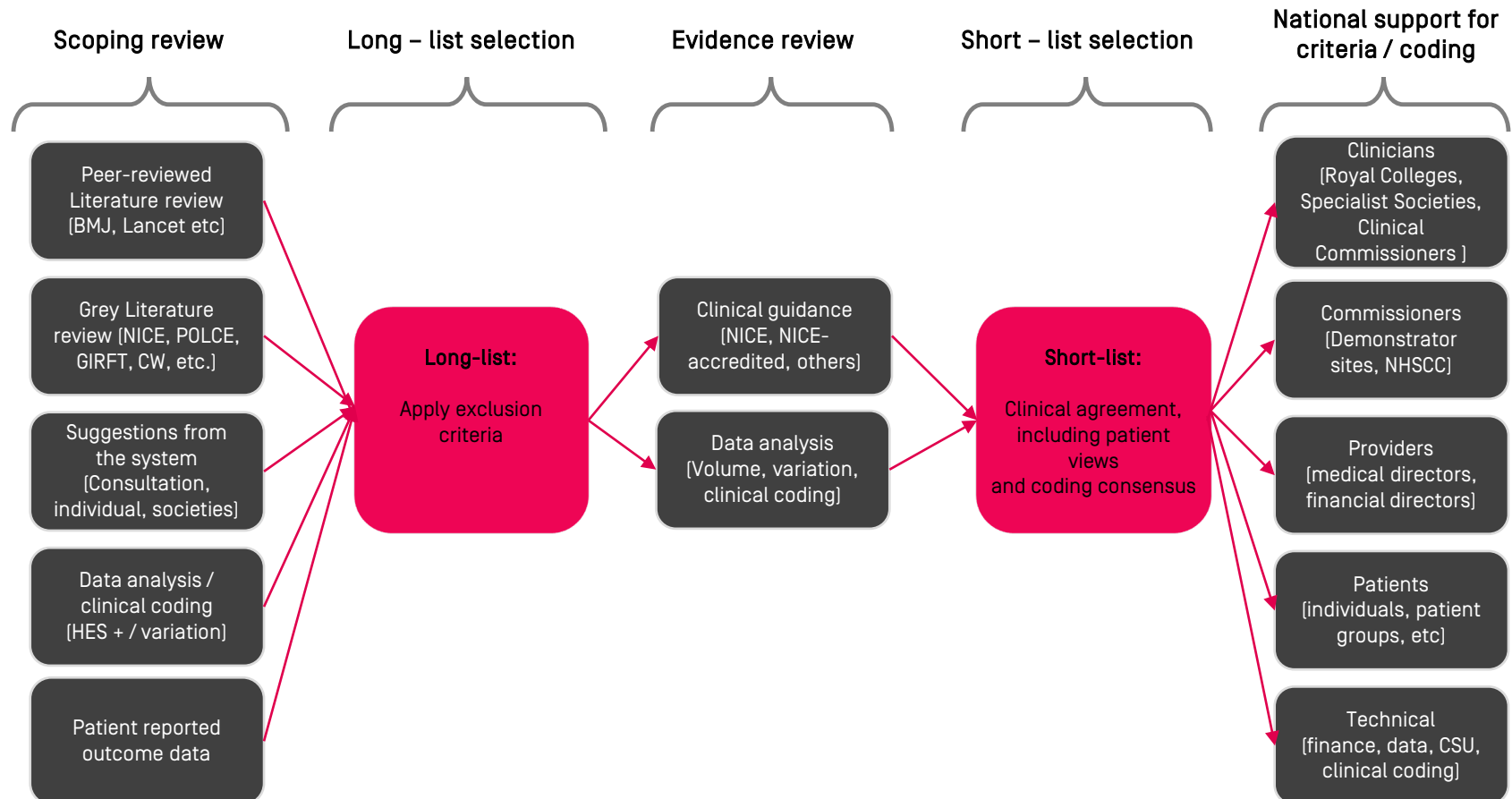
- Patient voices
- Senior clinicians
- Experts on public health
- Clinical commissioners
- Experts on value in healthcare
- Guideline producers

## Committee mandate

### The committee was asked to

- Recommend a list of interventions proven to be inappropriate based on clinical evidence
  - Draft clinical guidance based on rigorous evidence and stakeholder consensus
  - Lead engagement programme with relevant Medical Royal Colleges and sub-specialty groups, patient groups and the public
  - Maximise implementation of evidence-based guidance
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## Process for shortlisting



We have worked with many clinical and patient stakeholder groups over the past year and would welcome continued feedback and input as we continue to develop the guidance now.

Medical Royal Colleges	Sub-speciality groups	Sub-speciality groups
Royal College of Anaesthetists	Association of Surgeons of Great Britain & Ireland	British Society of Cardiovascular Imaging and British Society of Cardiac Computed Tomography
Royal College of General Practitioners		
Royal College of Paediatrics & Child Health	Association of Upper Gastrointestinal Surgeons of Great Britain and Ireland	British Society of Gastroenterologists
Royal College of Pathologists	British Association for Paediatric Otolaryngology	British Society of Gastrointestinal and Abdominal Radiology
Royal College of Physicians		
Royal College of Radiologists	British Association of Perinatal Medicine	British Society of Haematology
Royal College of Surgeons of England and Federation of Surgical Societies	British Association of Otorhinolaryngology [ENT UK]	British Society of Interventional Radiology
	British Association of Urological Surgeons	British Society of Thoracic Imaging
<b>Patient organisations</b>	British Blood Transfusion Society	Craniofacial Society of GB&I
Bladder Health UK	British Cardiology Society	Great Britain and Ireland Hepato Pancreato Biliary Association
Versus Arthritis	British Medical Ultrasound Society	Faculty of Pain Medicine
Prostate Cancer UK	British Orthopaedic Association inc.	Pancreatic Society of GB&I
GUTS UK	BASK, BASS, BESS, BHS	Society of British Neurological Surgeons
Chartered Society of Physiotherapists	British Society of Cardiovascular Imaging/ Cardiac Computed Tomography	
British Heart Foundation		

# Participate in the engagement and next steps

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There will be several online events so the public can comment on the proposals. We would encourage you to attend any of interest to you.

## Engagement events

- Today is the second of three intervention-focused events looking at 10 proposals on diagnostic interventions

### The final intervention-focused event will be

- 18 August, pathology and other investigative procedures

### Additionally there will be

- Data-focused event [19 August]
- Three patient-focused workshops led by the Patients Association [13, 18, 20 August]

Please get in touch at [ebi@aomrc.org.uk](mailto:ebi@aomrc.org.uk) if you would like to join any of these events or if you have any comments/ questions on the proposals.

## Next steps

- All responses to the engagement will be considered and analysed
  - A final recommendation will be submitted to the EBI programme partners by the Committee
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The focus of today's webinar is diagnostic interventions. You can still use Slido to choose the intervention(s) you would like to talk about more later.

- **Diagnostic coronary angiography for low risk, stable chest pain**
- Repair of minimally symptomatic inguinal hernia
- Surgical intervention for chronic sinusitis
- Removal of adenoids
- Arthroscopic surgery for meniscal tears
- **Troponin test**
- Surgical removal of kidney stones
- Cystoscopy for men with uncomplicated lower urinary tract symptoms
- Surgical intervention for benign prostatic hyperplasia
- Discectomy
- Radiofrequency facet joint denervation
- **Exercise ECG for screening for coronary heart disease**
- Upper GI endoscopy
- Appropriate colonoscopy
- Repeat Colonoscopy
- ERCP in acute gallstone pancreatitis without cholangitis
- Cholecystectomy
- Appendicectomy without confirmation of appendicitis
- **Low back pain imaging**
- **Knee MRI when symptoms are suggestive of osteoarthritis**
- **Knee MRI for suspected meniscal tears**
- Vertebroplasty for painful osteoporotic vertebral fractures
- **Imaging for shoulder pain**
- **MRI scan of the hip for arthritis**
- Fusion surgery for mechanical axial low back pain
- Helmet therapy for treatment of positional plagiocephaly/ brachycephaly in children
- **Pre-operative chest x-ray**
- **Pre-operative ECG**
- Prostate-specific antigen (PSA) test
- Liver function, creatinine kinase and lipid level tests – [Lipid lowering therapy]
- Blood transfusion



## Webinar Two

### **Diagnostics one: Cardiology and Radiology**

Cardiology

Radiology

Pre-operative



# Cardiology

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# Invasive angiogram to investigate stable chest pain

Diagnostic angiogram should not be used as first-line investigation for low risk, stable chest pain (Group A)

## Rationale

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.

## Avoidable harms

Bleeding, haematoma, exposure to radiation, irregular heartbeat, stroke, [rarely] death

## Alternatives

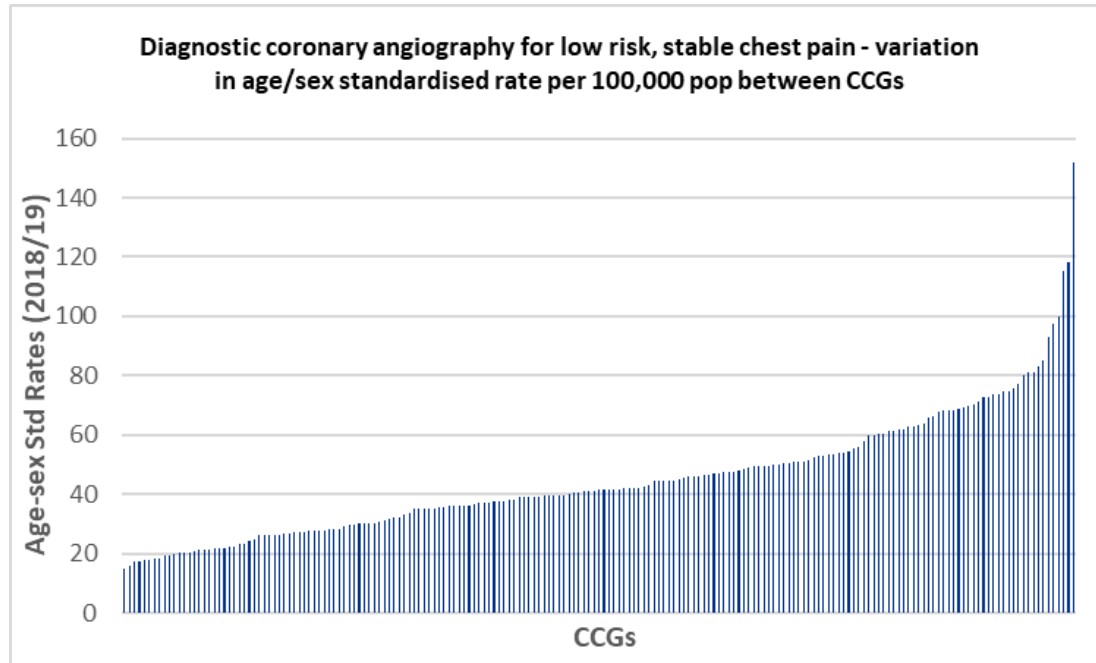
CT coronary angiography, non-invasive imaging

## Wider impacts

This is likely to appropriately increase need for CT angiography, and capacity and skilled workforce may be challenging, especially out of hours testing. However, analysis by NICE indicates there is sufficient capacity across the country and national recommendations must support training where necessary

# Invasive angiogram to investigate stable chest pain

Diagnostic angiogram should not be used as first-line investigation for low risk, stable chest pain (Group A)



## 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

Variation [age/sex std rates]:

- N-fold – 3.2
  - 10<sup>th</sup> percentile – 22.0
  - 25<sup>th</sup> percentile – 30.1
  - 50<sup>th</sup> percentile – 41.4
  - 90<sup>th</sup> percentile – 71.3

# Blood tests for investigation of chest pain

Troponin blood testing should be used to diagnose acute MI only where a clinical diagnosis of ACS is suspected or for prognosis in pulmonary embolism [Group A]

## Rationale

Troponin testing should be used to diagnose acute myocardial infarction. Troponin testing should only be used in cases where a clinical diagnosis of acute coronary syndrome is suspected or for prognostic purposes when pulmonary embolism is confirmed. Where troponin tests are used for indications other than suspected acute coronary syndrome, they are rarely associated with cardiac disease, cause unnecessary investigations and increase length of hospital stay.

## Avoidable harms

Unnecessary investigations, overdiagnosis, increased length of hospital stay

## Alternatives

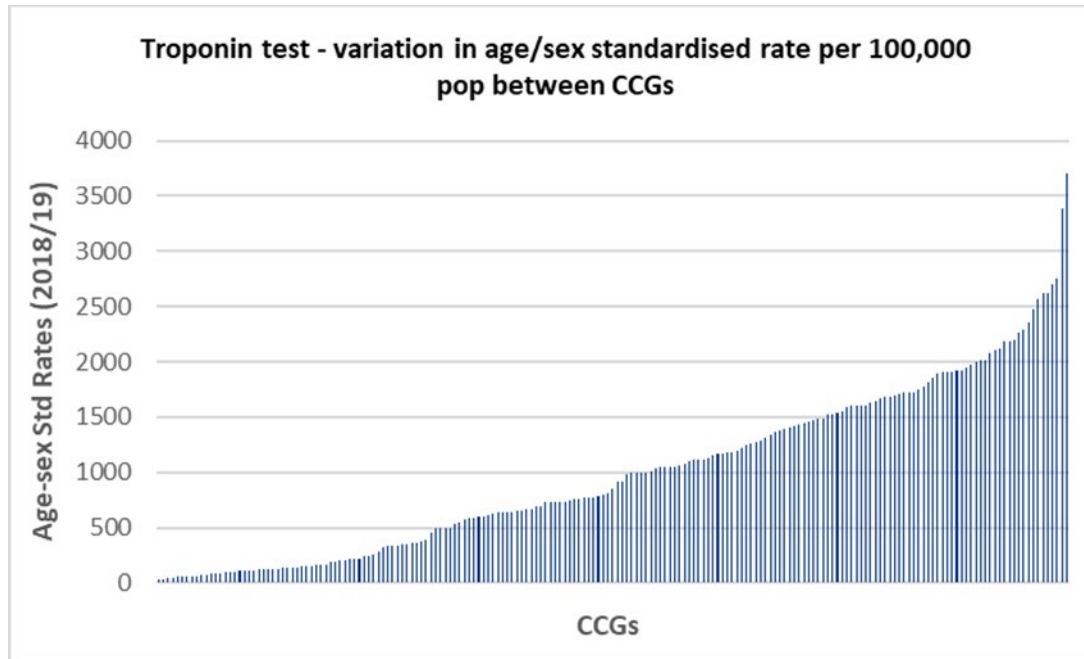
Clinical assessment

## Wider impacts

National initiatives (including NHS Innovation Accelerator and CQUIN) to increase the uptake of high-sensitivity troponin have been launched, therefore we must align recommendations on the appropriate use of high sensitivity troponin

# Blood tests for investigation of chest pain

Troponin blood testing should be used to diagnose acute MI only where a clinical diagnosis of ACS is suspected or for prognosis in pulmonary embolism [Group A]



## Activity

- 577,538 attendances during 2018/19
- Age/sex std rate per 100,000 – 972.1
- Reduction opportunity: 229,114 [45%]  
based on 25th percentile of activity  
across CCGs. \*

## Variation

Variation [age/sex std rates]:

- N-fold – 2.3
  - 10<sup>th</sup> percentile – 357.5
  - 25<sup>th</sup> percentile – 733.0
  - 50<sup>th</sup> percentile – 1,178.9
  - 90<sup>th</sup> percentile – 2,161.5

- N.B. This analysis is based on excluding CCGs served by providers with very poor coding.
- CCGs with zero activity were excluded in the n-fold calculation for this intervention

# Treadmill test for heart disease

Exercise ECG is not recommended for screening for coronary heart disease [Group A]

## Rationale

Exercise ECG should not be used for screening asymptomatic and low risk patients because it has a very low pre-test probability of identifying pathology. Instead, risk calculators such as Systematic Coronary Risk Evaluation [SCORE] are recommended to identify patients who are at greater risk of Coronary Heart Disease.

## Avoidable harms

Unnecessary investigations, increased anxiety

## Alternatives

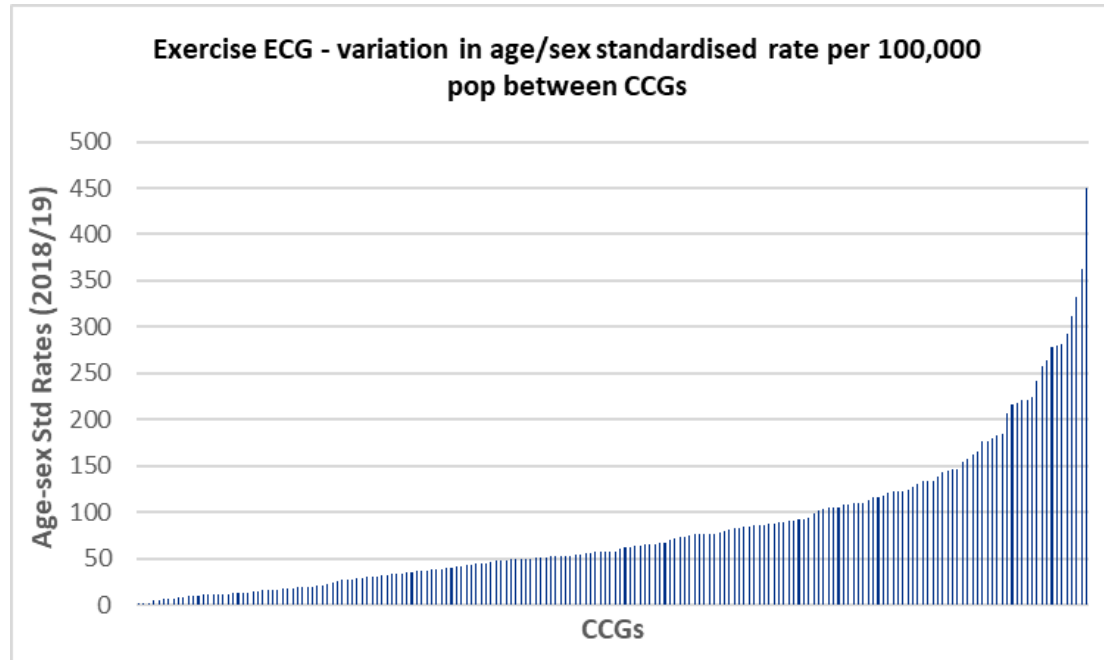
Use of risk calculators

## Wider impacts

Less testing in person and moving towards risk calculation may cause some patients to worry not enough is being done for them so its important to promote patient education and align messaging both nationally and with organisations such as the British Heart Foundation

# Treadmill test for heart disease

Exercise ECG is not recommended for screening for coronary heart disease [Group A]



## Activity

- 49,095 outpatient attendances during 2018/19
- Age/sex std rate per 100,000 – 82.6
- Reduction opportunity – 49,095 [100%] based on 25th percentile of activity across CCGs.

## Variation

Variation [age/sex std rates]:

- N-fold – 14.5
  - 10th percentile – 12.4
  - 25th percentile – 30.6
  - 50th percentile – 57.6
  - 90th percentile – 179.2



# Further questions on cardiology interventions?

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Please share your comments or ask us any questions using the MS Teams comments box and we will do our best to answer

We're especially interested to hear about:

1. Any suggested changes to the guidance
  2. Whether you have any data and supporting evidence you would like to send to [ebi@aomrc.org.uk](mailto:ebi@aomrc.org.uk)
  3. Any impact to access, experience and outcomes for any group protected under the Equality Act 2010 or for individuals who experience health inequalities?
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# Tests to investigate low back pain

Imaging for low back pain is rarely indicated [Group B]

## Rationale

Imaging for lower back pain should be offered only where serious underlying pathology is suspected. If no red flags are present after evaluation of medical history and examination, imaging should not be offered. Imaging can lead to further unnecessary investigations and treatment, including surgery and increased risk of harm. Instead, conservative management of low back pain including physiotherapy and weight-loss are recommended.

## Avoidable harms

Unnecessary investigations, overdiagnosis and treatment including surgery and its associated risks

## Alternatives

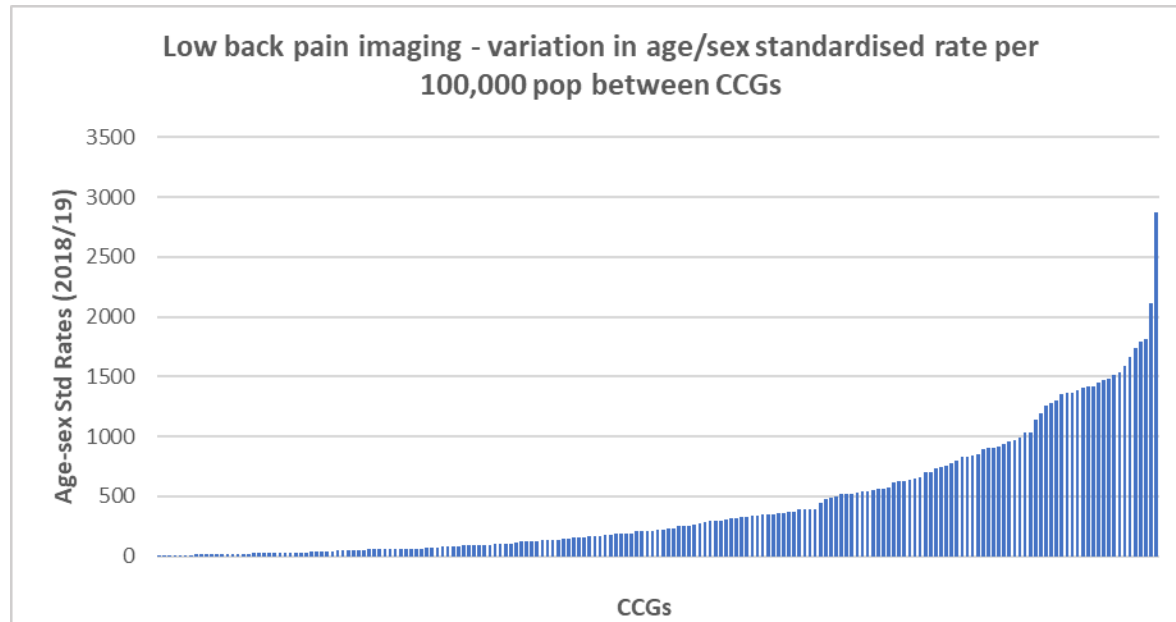
Lifestyle management, physiotherapy

## Wider impacts

This could cause increased pressure on primary care for patients with chronic low back pain, therefore its important to work with First Contact Practitioners to support people with chronic back pain through physiotherapy at presentation. It is important to work with national programmes and organisations (e.g. Faculty of Pain) to ensure appropriate pain services available

# Tests to investigate low back pain

Imaging for low back pain is rarely indicated [Group B]



## Activity

- 253,957 episodes during 2018/19
- Age/sex std rate per 100,000 – 427.5
- Reduction opportunity based on 25th percentile of activity across CCGs: not calculated

## Variation

Variation [age/sex std rates]:

- N-fold – 59.8
  - 10th percentile – 21.8
  - 25th percentile – 62.3
  - 50th percentile – 215.3
  - 90th percentile – 1,302.8

# Tests to investigate knee pain

Knee MRI should not be routinely used to initially investigate suspected OA or meniscal tear [Group B]

## Rationale

MRI for knees is not usually needed in initial management of knee pain, except in the limited circumstances described in this guidance. Where a patient presents with symptoms of knee osteoarthritis or degenerate meniscal tear and no atypical features or red flags are present, an initial diagnosis can be made by clinical assessment only.

If imaging is required to confirm the diagnosis of osteoarthritis, weight-bearing radiographs should be the first-line investigation. In secondary care weight-bearing radiographs are the first-line of investigation. If radiographs show minimal change, then an MRI scan of the knee should be used to investigate early arthritis, isolated cartilage lesions, osteonecrosis or other pathology. If a meniscal tear is suspected, then an MRI scan is the investigation of choice.

## Avoidable harms

Unnecessary investigations, increased anxiety

## Alternatives

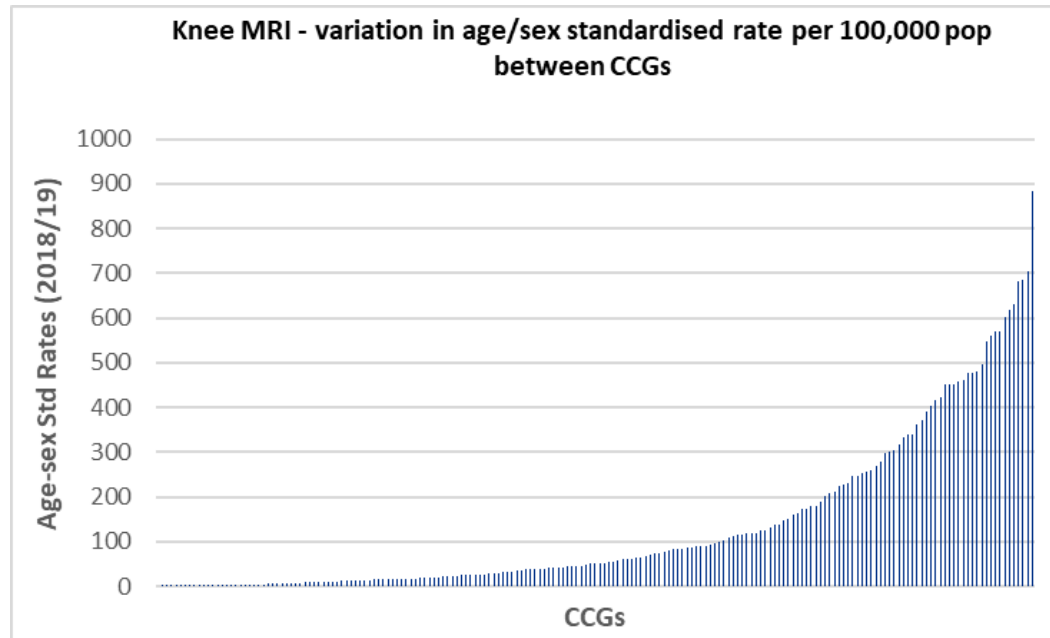
Clinical assessment, plain x-ray

## Wider impacts

This could cause increased demand for inappropriate plain x-rays which are also unnecessary and provide an unnecessary dose of radiation. Its important to work alongside the BOA as well as referring GPs to raise awareness of evidence-based practice and ensure patients do not receive inappropriate tests

# Tests to investigate knee pain

Knee MRI should not be routinely used to initially investigate suspected OA or meniscal tear [Group B]



## Activity

- 80,808 episodes during 2018/19
- Age/sex std rate per 100,000 – 136.0
- Reduction opportunity based on 25th percentile of activity across CCGs: not calculated

## Variation

Variation [age/sex std rates]:

- N-fold – 105.9
  - 10th percentile – 4.3
  - 25th percentile – 15.3
  - 50th percentile – 50.3
  - 90th percentile – 451.0

# Scans for shoulder pain

Specialist imaging for shoulder pain should be offered in secondary care or under the guidance of secondary care shoulder service (Group B)

## Rationale

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.

Published evidence and NICE guidelines support this assertion.

Their use in primary and intermediate care should only be offered if referral pathways have been developed with the local specialist shoulder service.

## Avoidable harms

Unnecessary investigations, increased waiting times

## Alternatives

Clinical assessment, plain x-ray

## Wider impacts

This could cause increased demand for inappropriate plain x-rays which are also unnecessary and provide an unnecessary dose of radiation. Its important to work alongside the BOA and BESS as well as referring GPs to raise awareness of evidence-based practice and ensure patients do not receive inappropriate tests

# Guided injections for shoulder pain

Guided injections for shoulder pain should only be offered under the guidance of the secondary care shoulder service

## Rationale

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.

## Avoidable harms

Unnecessary investigations, increased waiting times

## Alternatives

Landmark injections

## Wider impacts

This could lead to increased referrals to secondary care for guided injections. It is important to work with the BOA, BESS and referring GPs to raise awareness of evidence based practice and ensure appropriate referrals to secondary care

# MRI scan of the hip for arthritis

MRI scan of the hip for arthritis is not indicated [Group B]

## Rationale

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 appropriate patients.

## Avoidable harms

Unnecessary investigations, increased anxiety

## Alternatives

Clinical assessment, plain x-ray

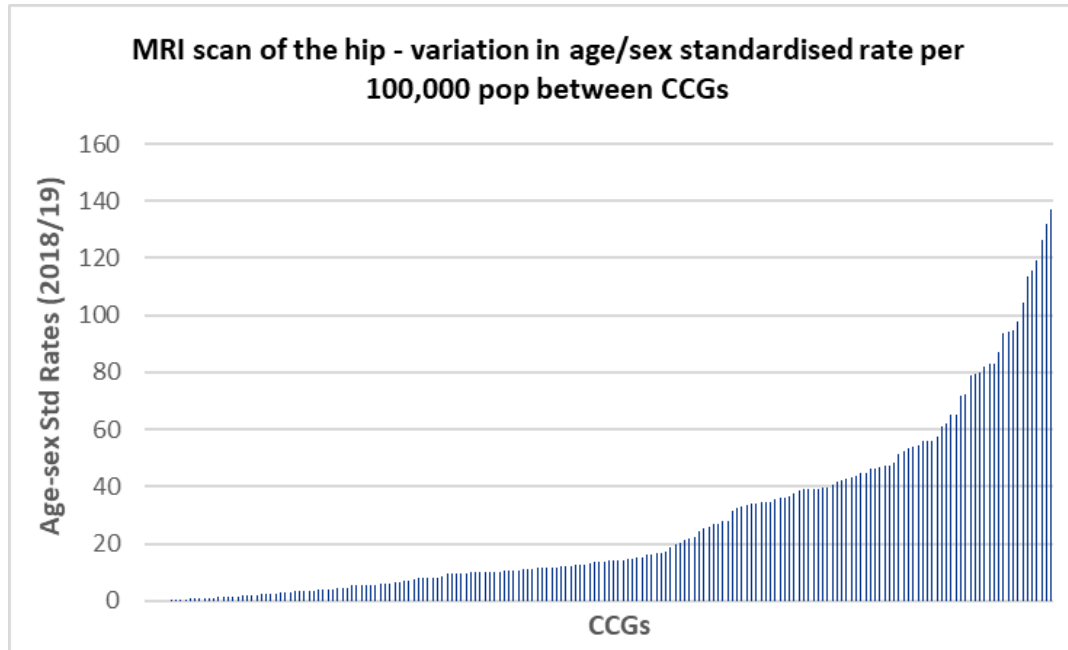
## Wider impacts

This could cause increased demand for inappropriate plain x-rays which are also unnecessary and provide an unnecessary dose of radiation. It's important to work alongside the BOA as well as referring GPs to raise awareness of evidence-based practice and ensure patients do not receive inappropriate tests.



# MRI scan of the hip for arthritis

MRI scan of the hip for arthritis is not indicated [Group B]



## Activity

- 15,286 attendances during 2018/19
- Age/sex std rate per 100,000 – 25.7
- Reduction opportunity based on 25th percentile of activity across CCGs: not calculated.

## Variation

Variation [age/sex std rates]:

- N-fold – 46.1
  - 10th percentile – 1.6
  - 25th percentile – 5.6
  - 50th percentile – 13.7
  - 90th percentile – 71.6

# Further questions on radiology interventions?

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Please share your comments or ask us any questions using the MS Teams comments box and we will do our best to answer

We're especially interested to hear about:

1. Any suggested changes to the guidance
  2. Whether you have any data and supporting evidence you would like to send to [ebi@aomrc.org.uk](mailto:ebi@aomrc.org.uk)
  3. Any impact to access, experience and outcomes for any group protected under the Equality Act 2010 or for individuals who experience health inequalities?
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# Chest X-ray before an operation

Routine pre-operative chest X-ray is not indicated [Group C]

## Rationale

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.

## Avoidable harms

Unnecessary investigations, overdiagnosis and treatment, exposure to radiation, increased anxiety

## Alternatives

Clinical history/ assessment

## Wider impacts

This may cause clinicians and patients to feel a 'full' assessment has not been completed, therefore its important to work with the Academy of Medical Royal Colleges and other stakeholders on pre-operative shared decision making to ensure only appropriate tests are provided and clinicians are implementing the guidance

# Heart tracing (ECG) before an operation

Routine pre-operative electrocardiogram (ECG) is not indicated  
[Group C]

## Rationale

Pre-operative ECGs should not be routinely performed in low-risk, non-cardiac, adult elective surgical patients. They are labour intensive and may cause anxiety for patients, delays in treatment and further unnecessary investigation or treatment.

Pre-operative ECGs are appropriate in specific circumstances, for example patients with a history of cardiovascular or renal disease, or diabetes.

## Avoidable harms

Unnecessary investigations, overdiagnosis and treatment, increased anxiety

## Alternatives

Clinical history/ assessment

## Wider impacts

It is difficult to quantify the benefits of avoiding unnecessary ECGs and may be difficult to change behaviours, therefore its important to work with the Academy of Medical Royal Colleges and the British Cardiovascular Society to align messaging about unnecessary, inappropriate testing

# Further questions on pre-operative interventions?

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Please share your comments or ask us any questions using the MS Teams comments box and we will do our best to answer

We're especially interested to hear about:

1. Any suggested changes to the guidance
  2. Whether you have any data and supporting evidence you would like to send to [ebi@aomrc.org.uk](mailto:ebi@aomrc.org.uk)
  3. Any impact to access, experience and outcomes for any group protected under the Equality Act 2010 or for individuals who experience health inequalities?
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## Share your views / ask questions

Let's recap on the interventions looking at the questions below – please use MS Teams chat function to send your questions or feedback.

1. Do you have any suggested changes to the guidance?
2. Do you have any suggested changes or updates to the data, if so, could you send us supporting evidence?
3. Do you think there will be a negative or positive impact to access, experience and outcomes for any group protected under the Equality Act 2010 or for individuals who experience health inequalities?

Thank you for your time, we would appreciate your feedback on the webinar <https://www.surveymonkey.co.uk/r/6GSFSFF>

Please share any further views or comments, including suggestions for future guidance

Email us [ebi@aomrc.org.uk](mailto:ebi@aomrc.org.uk) or complete the online survey available at [www.aomrc.org.uk/ebi](http://www.aomrc.org.uk/ebi)

