Rapid Access Chest Pain Clinic
Service Guideline

Purpose of the Clinic

The Rapid Access Chest Pain Clinic aims to provide a prompt assessment of patients with suspected new onset or recent worsening of previously diagnosed angina. To investigate patients with chest pain and quickly reassure patients if chest pain is of non cardiac origin.

The overall responsibility for the patient lies with the consultant cardiologist assigned to each clinic.

Referral Procedure

Patients should be referred to the clinic according to the agreed referral policy, example referral form and patient information is shown in the Appendices.

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Exclusion Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ History of exertional chest pain in the preceding two months prior to referral.</td>
<td>▪ Suspected symptoms due to current UAP or MI - admit, if symptoms more than 72hrs ago, assessment as per NICE CG 95 is appropriate which may include Rapid Access assessment.</td>
</tr>
<tr>
<td>▪ Pain that is suggestive of cardiac ischaemia and/or has some atypical features but is accompanied by significant cardiac risk.</td>
<td>▪ Symptoms clearly not due to angina</td>
</tr>
<tr>
<td></td>
<td>▪ Other life threatening conditions that make assessment / investigation inappropriate</td>
</tr>
<tr>
<td></td>
<td>▪ Severe cognitive impairment that makes assessment / investigation inappropriate</td>
</tr>
</tbody>
</table>

There is no age limit for patients attending the RACPC. Doctors are reminded to take the age of younger patients into consideration prior to referral. Age is a powerful risk factor for CHD. Anyone under the age of 30 is unlikely to be at high risk.

Inability to perform an exercise tolerance test (ETT) is **not** a contraindication to referral.

Known LBBB is **not** a contraindication to referral

Known AF is **not** a contraindication to referral

Procedures for referral (done by GP prior to patient seen in clinic)

▪ Blood test - FBC, U&E, LFT, TSH, lipid profile, random glucose
**Via Choose and Book – 2 week wait referral process for GP practices**

This process applies to referrals to the Rapid Access Chest Pain Clinic. If not using the Choose and Book system 2 week wait referrals should continue to be made by fax.

As 2 week (14 calendar days) referrals fall outside of the patient choice policy, choice of provider does not need to be discussed.

**Via Fax**

- The RACPC referral form should be used and faxed to the booking office. Referrals via post may fall outside the 2 week (14 calendar days) appointment target.
- The GP should provide patients with a clinic information sheet advising them that the hospital will contact them with an appointment during the following 48 hours. To assist with this GPs to provide the patient’s daytime telephone number with the referral.
- The booking team will contact the patient by phone to offer the first available appointment within two weeks of the date of the referral, if the patient has agreed to this. For confidentiality reasons, a brief message only may be left, requesting the patient to contact the booking team; no further information is given.
- The booking team provides the patient with the essential information over the phone and this is followed up by a patient information letter sent by post (if there is sufficient time).

If the patient cannot be contacted by phone, an appointment will be forwarded to them by first class post within 48 hours. The patient is requested to contact the hospital on receipt of the letter to confirm their attendance.
Clinic Process for Unknown Coronary Artery Disease

1. Take a history as usual. Include those factors below to assess pre-test likelihood, but consider other features which influence the likelihood of the diagnosis of angina due to coronary disease e.g. is the pain anginal pain at all (but consider what may be causing the pain). Features which make stable angina less likely include continuous or very prolonged pain:
   - pain unrelated to activity
   - pain brought on by breathing in
   - pain associated with symptoms of dizziness, palpitations, tingling (suggesting perhaps hyperventilation) or difficulty swallowing (suggesting oesophageal pain perhaps).

Other Risks to be recorded and taken into consideration in the overall assessment of the patient include:

a) Family History
   - To confirm whether the patient has known family history of premature coronary disease

b) Hypertension
   - To confirm whether the patient has a diagnosis of hypertension

2. Clinical examination with review of blood results and blood pressure

3. Resting 12 lead ECG

4. Estimate pre-test likelihood in patients where you are considering coronary disease using the Pryor Risk Equation (Duke Probability of having CHD). This is available on the NECVN website.

Confirm the following features and undertake scoring as per NICE guideline:

a) Chest pain descriptors
   - Constricting discomfort in front of chest, or in the neck, shoulders, jaw, or arms
   - Precipitated by exertion
   - Relieved by rest or GTN

b) Anginal pain definition
   - Three of the features above are defined as typical angina.
   - Two of the three features above are defined as atypical angina.
   - One or none of the features above are defined as non-anginal chest pain.

c) Risk factors:

The Pryor risk equation includes the following risk factors:
   - Age
   - Sex
   - Type of chest pain (non-anginal, atypical angina or typical angina)
   - History of MI
   - Q waves on ECG
   - Smoking status
   - Hyperlipidaemia
   - Diabetes mellitus
   - ST/T wave changes on ECG
Definition of risk factors:

Smoking status
- Current
- Ex-smoker (including patients who have quit less than a year ago) and details of when quit, number smoked

Hypercholesterolemia
- Currently on a statin if cholesterol unknown;
- Known cholesterol over 6.47mmol

Diabetes
- Confirmed diagnosis of diabetes, please state either Type 1 or 2

Low risk patients in the table have none of these features, if patients have one or two features, either interpolate within the table or better use the on line scoring tool:

5. Prescribing

6. Advice and education

7. Referral on for further investigations / treatment as per NICE guidance:

For patients with typical and atypical angina-like chest pain, consider as first line the following investigations:

- If the estimated likelihood of CAD is 61–90%, offer invasive coronary angiography as the first-line diagnostic investigation if appropriate
- If the estimated likelihood of CAD is 30–60%, offer functional imaging as the first-line diagnostic investigation.
- If the estimated likelihood of CAD is 10–29%, offer CT calcium scoring as the first-line diagnostic investigation. If calcium score is 1-400 progress to CT angiography, if above 400 progress to invasive angiography (or functional testing if angiography is not acceptable to the patient.

Patients with non anginal chest pain will generally be referred back to the GP. Where there is suspicion that there is an underlying serious diagnosis that is not cardiac chest pain this should be investigated appropriately.
Clinic Process for patients with a history of established coronary artery disease

1. History and clinical examination with review of blood results and blood pressure
2. Resting 12 lead ECG
3. Exercise Tolerance Test (ETT) if applicable (other testing for ischaemia may be more appropriate – e.g. abnormal ECG etc).
4. Prescribing
5. Advice and education
6. Referral on for further investigations when appropriate

Clinic Procedures

- A trained and competent practitioner will obtain history and perform examination. A trained and competent practitioner will perform cardiac auscultation to check for the presence of significant valvular disease, particularly aortic stenosis or other cardiac conditions which could cause chest pain e.g. Hypertrophic Cardiomyopathy.
- ETT should be performed in the presence of two suitably trained practitioners. One (the supervisor) will be responsible for the care of the patient; the other (the assistant) will be responsible for operating the equipment.

Outcomes and Management

If assessment detects evidence of any of the following:

<table>
<thead>
<tr>
<th>Clinical Findings</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMI / Unstable Angina</td>
<td>Arrange for immediate admission to CCU</td>
</tr>
<tr>
<td>ST elevation pre test</td>
<td>Arrange for immediate admission to CCU / transfer for PPCI</td>
</tr>
<tr>
<td>Aortic stenosis</td>
<td>Arrange echocardiogram and discuss with cardiologist to determine the urgency</td>
</tr>
<tr>
<td>Untreated Atrial Fibrillation</td>
<td>Refer to cardiologist. Ensure appropriate medication</td>
</tr>
<tr>
<td>Current Chest Pain</td>
<td>Assess nature of chest pain and discuss with Cardiologist regarding admission to CCU</td>
</tr>
</tbody>
</table>

Exercise Tolerance Test (ETT) End Points:

<table>
<thead>
<tr>
<th>Clinical Findings</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest pain, breathlessness or faintness such that the patient feels unable to continue</td>
<td>End test immediately</td>
</tr>
<tr>
<td>Fall in heart rate (&gt;10 bpm) or blood pressure (&gt;20mmHg) in the presence of symptoms and especially if the patient looks pale and clammy</td>
<td>End test immediately</td>
</tr>
<tr>
<td>The onset of sustained ventricular tachycardia or supra-ventricular arrhythmia</td>
<td>End test immediately</td>
</tr>
<tr>
<td>Chest pain and plus 2 mm horizontal or down sloping ST depression, or in the absence of chest pain 3 mm horizontal or down sloping ST depression (assuming normal baseline)</td>
<td>End test immediately</td>
</tr>
<tr>
<td>Marked ST depression in absence of</td>
<td>End test immediately</td>
</tr>
</tbody>
</table>
symptoms (3 mm in one or more leads)
Chest pain and onset of conduction defect (AV Block or BBB)  End test immediately
Onset of 2nd or 3rd degree AV Block or BBB in the absence of symptoms  End test immediately
Non sustained ventricular tachycardia (salvo of 5-10 beats)  End test immediately

**Defining Results of ETT**

For *prognostic* studies, calculate the treadmill score as follows:

The treadmill score = exercise time – 5 x (amount of ST segment deviation in mm) – 4 x exercise angina index (which has a value of 0 if there was no exercise angina, 1 if exercise angina occurred, and 2 if angina was the reason for the patients stopped exercising).

The high risk group defined by this score (score -11 or below) have average annual cardiovascular mortality ≥ 5%. Low risk patients have a score ≥ +5 or above and have an average annual cardiovascular mortality rate of 0.5%.

**Ordering of Other Tests**

**Possible Indications for Cardiac Echocardiogram**
- valvular problems
- history suggestive of ventricular dysfunction
- suspected cardiomyopathy
- ECG evidence of LVH
- ‘New’ LBBB

**Possible Indications for Stress Imaging**
- For people with confirmed CAD (for example, previous MI, revascularisation, previous angiography), offer non-invasive functional testing when there is uncertainty about whether chest pain is caused by myocardial ischaemia.
- Refer to NICE Guidance for unknown coronary artery disease (likelihood 30%–60%)
- For risk stratification and prognosis

**Possible Indications for Chest X Ray (CXR)**
- smoker atypical chest pains
- breathlessness / chest tightness – normal XT

**Possible Indications for Blood Tests**
- routine screen if not done by GP

**Possible Indications for Coronary Angiography**
- high risk, positive ETT
- Recurrent angina despite maximal medical therapy
- When results of functional imaging are inconclusive
- Refer to NICE Guidance for unknown coronary artery disease (likelihood of CAD 61% - 90%)
The supervisor should have the competency to order all of the above tests. An echocardiogram if required will be performed as part of the clinic visit if possible as per the Network ECHO Standards.

Prescribing

Newly diagnosed angina with positive ETT and history (see page 11)
Aspirin 75 mgs od
Beta Blocker
Simvastatin 40mg nocte
GTN spray 400mcgs prn

*if beta blockers are contra indicated according to PGD then add rate limiting calcium antagonist e.g. Calcium channel blocker 180mgs od

Increasing anti anginal therapy in patients as per angina guideline.

Communication of results and outcomes must be sent back to GP.
High Level Patient Pathway

Stable chest pain pathway

1. Presentation

- Carry out a detailed assessment and review
- History
  - the age and sex of the person
  - the characteristics of the pain and any associated symptoms
  - any history of angina, MI, coronary revascularisation, or other cardiovascular disease
  - any cardiovascular risk factors.
- Examination
  - identify risk factors and signs of cardiovascular disease
  - identify non-coronary causes of angina (for example, severe aortic stenosis, cardiomyopathy)
  - Exclude other causes of chest pain

Box 1 Typical stable angina symptoms
- Constricting discomfort in the front of the chest, in the neck, shoulders, jaw, or arms
- Precipitated by physical exertion
- Relieved by rest or GTN within about 5 minutes

Typical angina: all of the above
Atypical angina: two of the above
Non-anginal chest pain: one or none of the above

See recommendation 1.3.3.4 for risk factors which make angina more likely.

Box 2 Stable angina is unlikely if chest pain is:
- continuous or very prolonged and/or
- unrelated to activity and/or
- brought on by breathing and/or
- associated with symptoms such as dizziness, palpitations, tingling or difficulty swallowing

Box 3 Changes on a resting 12-lead ECG consistent with CAD which may indicate ischaemia or previous infarction
- pathological Q waves in particular
- LBBB
- ST-segment and T wave abnormalities (for example, flattening or inversion).

Results may not be conclusive. Consider resting 12-lead ECG changes together with people's clinical history and risk factors. Note that a normal resting 12-lead ECG does not rule out stable angina.

Box 4 If symptoms suggestive of angina, consider:
- Investigate other causes of chest pain
- Consider chest X-ray if other diagnoses are suspected
- Consider other causes of chest pain
- Exclude other causes of chest pain

Features of pain are non-anginal (see boxes 1 and 2) and assessment does not raise clinical suspicion of stable angina

Person has confirmed CAD

See part 3 of the pathway on page 52

Take resting 12-lead ECG (see box 3)

Use clinical assessment and typicality of anginal pain features to stratify the likelihood of CAD (see box 1 and table 1)

Likelihood of CAD is less than 10%

Likelihood of CAD is greater than 50%

Likelihood of CAD is 10-90%

- Arrange blood tests to identify conditions which exacerbate angina
- Treat as stable angina

Consider aspirin only if the chest pain is likely to be stable angina until diagnosis made
- Follow local protocols for stable angina while waiting for the results of investigations if symptoms are typical of stable angina.
Stable chest pain pathway

3. Established prior diagnosis of coronary artery disease

People with confirmed CAD and typical features of anginal pain

YES

Treat as stable angina

Uncertain

Carry out appropriate functional imaging test (see box 5) or exercise ECG

Investigate other causes of chest pain*

NO

Reversible myocardial ischaemia

YES

Treat as stable angina

Box 5

When offering non-invasive functional imaging for myocardial ischaemia use:
- myocardial perfusion scintigraphy with single photon emission computed tomography (MPS with SPECT) or
- stress echocardiography or
- first-pass contrast-enhanced magnetic resonance (MR) perfusion or
- MR imaging for stress-induced wall motion abnormalities.

Take account of locally available technology and expertise, the person and their preferences, and any contraindications, when deciding on the imaging method.

Note: This recommendation updates and replaces recommendation 1.1 of NICE technology appraisal guidance 73.

* Consider investigating other causes of angina, such as hypertrophic cardiomyopathy or syndrome X in people with typical angina-like chest pain if investigation excludes flow-limiting disease in the epicardial coronary arteries.
**Treatment Algorithm**

Newly diagnosed angina with good history and +/-ve ETT

- All patients are supplied a **Glyceryl Trinitrate Spray** (using 400mcg when required).
- Start **aspirin 75mg** each morning (unless contra-indicated)
- Start **statin 40mg**

Is beta blocker contra-indicated?
- No – start patient on **Beta Blocker** each morning
- Yes – then start a calcium channel antagonist.

Start patient on **calcium channel blocker 180mg** each day

**Increasing anti anginal medication**

If patient is experiencing frequent symptoms on existing anti anginal medication increase treatment as per angina guidance
**Information Giving / Health Education**

- Educate the patient about angina
- Advice should be given on risk factor reduction
- Stopping smoking and provide "smoking cessation" information card / referral to stop smoking clinic
- Healthy eating and weight advice
- Advice on exercise and who to contact for exercise programmes
- Use of GTN spray (when appropriate) and information card

**Referral to health care professionals**

- Cardiac Rehabilitation
- Smoking Cessation Advisor

**Referral to other departments**

- Emergency admission to CCU for development of ST elevation / AMI or sustained cardiac arrhythmia which is clinically compromising
- Emergency admission for any acute medical emergency resulting from ETT
- To be discussed with cardiologist on call
  - patients with inconclusive ETT and difficult history
  - positive ETT but unsuitable for angiography
  - other cardiac diagnosis (cardiomyopathy and valvular disease – arrange for echocardiogram at RACPC visit - atrial fibrillation )
  - patients presenting with ‘other diagnosis’ - difficult history

**Data Collection**

Data will be collected which will provide audit data for National Service Framework for Coronary Heart Disease targets.

Providers should collect data on the patient pathway from referral to treatment. NECVN are working towards a regional solution by developing a web based database in line with NICE Guidance - chest pain of recent onset. This will inform commissioners and help plan service provision and identify deviation from best practice.

The clinician is responsible for the quality of this data.

**Audit**

- Clinic Outcome
- Length of time from referral for angiogram to date procedure performed
- Length of time to send clinic letter to GP
Vital Signs Monitoring Return (VSMR) – Provider Based Version 1.0
A- Coronary Heart Disease

Part 1

Rapid Access Chest Pain Clinics

2502
Line Descriptor: Number of patients in quarter
Detailed Definition:
Actual figures for the number of patients who attend a RACPC.
Collection Information:
Level: NHS Trust
Basis: Provider
Returns: ‘Activity’ in period

2503
Line Descriptor: Number of patients seen in RACPCs after decision to refer (where referral was received within 24 hours)- within 14 days
Detailed Definition:
A referral will be considered to have been received within 24 hours if it is received by the end of the next calendar day from the date the GP makes the decision to refer the patient. This is to ensure that Trusts have the maximum possible time to arrange an appointment within 14 days. NHS Trusts and PCTs are asked to work with GPs to maximise the number of referrals received within 24 hours.
The waiting time, measured in calendar days, will start from the date that the GP refers. The date of the decision to refer will be included on the referral letter (if any referral letter does not include the decision to refer date, the waiting time should be measured from the date of the letter or phone call, whichever is the earlier). The waiting time will end on the day that the patient is seen in the RACPC.
Patient views should be considered when monitoring the two-week standard. Some patients might, for social or personal reasons, decline an appointment within 14 days. The waiting time of those patients who are offered an appointment but turn it down should be calculated from the date of the last appointment they were offered.
If a patient does not want an appointment within 14 days before an offer is made, e.g. because they are going on holiday, the patient should be excluded from the return and monitoring of the two-week standard.
The waiting time of patients who do not turn up, whether giving advance warning or not, for their first appointment at the RACPC, should be calculated from the date of the last appointment for which they did not attend. Patients that DNA and then do not rearrange an appointment are not to be included.
Patients who are referred back to their GP after a ‘Did Not Attend’ should only be counted again when they are re-referred for an urgent referral. Their waiting time should be calculated from the latest decision to refer date by their GP.
Collection Information:
Level: NHS Trust
Basis: Provider
Returns: ‘Activity’ in period

2504
Line Descriptor: Number of patients seen in RACPCs after decision to refer (where referral was received within 24 hours)- in 15+ days
Detailed Definition:
See guidance for line 2503.
Collection Information:
Level: NHS Trust
Basis: Provider
Returns: 'Activity' in period

2508
Line Descriptor: Number of patients seen in RACPCs after decision to refer (where referral was received after 24 hours)- within 14 days
Detailed Definition:
See guidance for line 2503.
Collection Information:
Level: NHS Trust
Basis: Provider
Returns: 'Activity' in period

2509
Line Descriptor: Number of patients seen in RACPCs after decision to refer (where referral was received after 24 hours)- in 15+ days
Detailed Definition:
See guidance for line 2503.
Collection Information:
Level: NHS Trust
Basis: Provider
Returns: 'Activity' in period

2513
Line Descriptor: Outcome for patients from RACPC- Not cardiac in origin
Detailed Definition:
Patient’s symptoms do not arise from cardiac disease. This is referring to any symptoms cardiac origin.
Collection Information:
Level: NHS Trust
Basis: Provider
Returns: 'Activity' in period

2514
Line Descriptor: Outcome for patients from RACPC - Cardiac in origin
Detailed Definition:
Patient’s symptoms originate from cardiac disease:
- and considered suitable for treatment in primary care. No intervention necessary or possible.
- further referral necessary.
- and require immediate admission for stabilisation and possible intervention.
This is referring to any symptoms cardiac origin.
Collection Information:
Level: NHS Trust
Basis: Provider
Returns: 'Activity' in period
Bibliography

1. Cleland JGF, Findlay IN, Gilligan D & Pennell DJ 1993 The Essentials of Electrocardiography Currant Medical Literature Ltd London


9. Sutcliffe SJ, Fox KF & Wood DA How to set up and run a rapid access chest pain clinic www.nelh.nhs.uk/nsfchd

Table 1 Percentage of people estimated to have coronary artery disease according to typicality of symptoms, age, sex and risk factors

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Non-anginal chest pain</th>
<th>Atypical angina</th>
<th>Typical angina</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
<td>Men</td>
</tr>
<tr>
<td>35</td>
<td>3</td>
<td>35</td>
<td>1</td>
</tr>
<tr>
<td>45</td>
<td>9</td>
<td>47</td>
<td>2</td>
</tr>
<tr>
<td>55</td>
<td>23</td>
<td>59</td>
<td>4</td>
</tr>
<tr>
<td>65</td>
<td>49</td>
<td>69</td>
<td>9</td>
</tr>
</tbody>
</table>

For men older than 70 with atypical or typical symptoms, assume an estimate > 90%.
For women older than 70, assume an estimate of 61–90% EXCEPT women at high risk AND with typical symptoms where a risk of > 90% should be assumed.

Values are per cent of people at each mid-decade age with significant coronary artery disease (CAD). Hi = High risk = diabetes, smoking and hyperlipidaemia (total cholesterol > 6.47 mmol/litre). Lo = Low risk = none of these three.
The shaded area represents people with symptoms of non-anginal chest pain, who would not be investigated for stable angina routinely.

Note:
These results are likely to overestimate CAD in primary care populations.
If there are resting ECG ST-T changes or Q waves, the likelihood of CAD is higher in each cell of the table.
Appendix 2

<table>
<thead>
<tr>
<th>age</th>
<th>sex</th>
<th>typical angina</th>
<th>atypical angina</th>
<th>history of MI</th>
<th>ECG Q waves</th>
<th>Smoking</th>
<th>Hyperlipidaemia</th>
<th>Diabetes mellitus</th>
<th>ECG ST-T wave changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Enter variable in this row

All entries should be 0 or 1 except for age
Please see notes

Probability of significant disease (Pryor)

58.4%

Notes

<table>
<thead>
<tr>
<th>Variable</th>
<th>Enter:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>age in years</td>
</tr>
<tr>
<td>Sex</td>
<td>0=male, 1=female</td>
</tr>
<tr>
<td>Typical angina</td>
<td>0=no, 1=yes</td>
</tr>
<tr>
<td>Atypical angina</td>
<td>0=no, 1=yes</td>
</tr>
<tr>
<td>Nonanginal pain</td>
<td>enter 0 for typical angina and atypical angina</td>
</tr>
<tr>
<td>ECG Q waves</td>
<td>0=no, 1=yes</td>
</tr>
<tr>
<td>Smoking</td>
<td>0=no, 1=yes</td>
</tr>
<tr>
<td>Hyperlipidaemia</td>
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</tr>
<tr>
<td>Diabetes mellitus</td>
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