Acute Coronary Syndrome Guidelines
Unstable angina, ST Elevation Myocardial Infarction (STEMI), Non ST Elevation Myocardial Infarction/Acute Coronary Syndrome (NSTEMI/NSTE-ACS)

History and Examination (Note 1)
Clinical picture suggestive of ACS, exclude other important causes.

12-LEAD ELECTROCARDIOGRAM every 15 minutes during symptoms. ECG when symptom-free, then at one and four hours after end of symptoms

Give oxygen & GTN spray prn (Note 2), as appropriate and check blood sugar

If symptoms suggest ACS:
give aspirin 300mg stat
IV opiate & IV anti emetic (Note 2)

NORMAL ECG
Symptoms settled, Troponin T negative

STEMI / new LBBB ECG (Note 3)
Discuss with senior NOW

ABNORMAL ECG (Note 5)

ACS UNLIKELY

ACTIVATE PRIMARY PCI PATHWAY (Note 4)
Give TICAGRELOR 180mg po STAT

NSTEMI / NSTE-ACS (Note 6)
Add remaining ACS treatment.
Calculate GRACE 2 risk score (click here)
Send blood for Troponin T

Read the LOW RISK PATHWAY / Troponin T flowchart (click here)

CONSIDER REFERRAL TO Ambulatory Emergency Care (click here) for details

IMMEDIATE TRANSFER TO CGH/BHI
999 Blue light ambulance

REFER TO CARDIOLOGY

MOVE BETWEEN CATEGORIES/ESCALATE AS PATIENT’S CONDITION DICTATES:
ongoing chest pain, dynamic ECG changes, dysrhythmia, pulmonary oedema
Acute Coronary Syndrome Guidelines
Unstable angina, ST Elevation Myocardial Infarction (STEMI), Non ST Elevation Myocardial Infarction/Acute Coronary Syndrome (NSTEMI/NSTE-ACS)

Explanatory notes:

Note 1
History and Examination
Symptoms may include: Persistent or intermittent chest discomfort ie tightness, heaviness, restriction lasting for more than 15 mins.
Radiation to the jaw, throat or left arm, nausea, sweating, dyspnoea, hypotension
Increased likelihood of ACS: Diabetes, smoking, hypertension, hypercholesterolaemia, significant early family history, previous history of ischaemic heart disease, increasing age. Symptoms present as above. Recent exertional anginal symptoms.
Exclude likelihood of other significant causes of chest pain ie: acute aortic dissection, pericardial effusion, pulmonary embolus.

Note 2
Current Trust recommendation:
Oxygen if indicated, according to Trust guidelines
GTN spray 1-2 sprays SL prn
Morphine 5-10mg, slow IV then a further 5-10mg if needed.
Metoclopramide 10mg IV stat

Note 3
ST ELEVATION in 2 contiguous leads (ie same cardiac territory):
- ≥2 mm in chest leads (V1-6)
- ≥1 mm in limb/other leads
- ST depression V1-2

LEFT BUNDLE BRANCH BLOCK
- New or with a good history

Note 4
ACTIVATE PPCI Pathway
Current anti platelet treatment for STEMI in this Trust is ticagrelor 180mg po stat (Trust guideline)
Give prior to transfer to CGH/BHI, can be given even if patient is subsequently declined for procedure.

Contact:
Hartpury Suite CGH (Mon – Fri. 8.30am – 4.30pm) ext 722995
Out-of-hours – contact Bristol Heart Institute (DW Adult Cardiology Registrar) PPCI team 0117 342 5999
Transfer: this should be an immediate emergency 999 ambulance, on blue lights & sirens.

Note 5
Abnormal ECG:
ST DEPRESSION >0.5 mm
T WAVE INVERSION >2 mm deep (not AVR or V1)
LVH, PACED – difficult interpretation masking abnormalities.

Note 6
Current Trust recommendations:
Aspirin 75mg od
Fondaparinux 2.5mg SC od (Trust guideline)
Orally anticoagulated patients: Stop oral anticoagulant and prescribe Clexane® 1mg/kg SC bd (Trust guideline)
Renal impairment (eGFR <20ml/min) Clexane® 1mg/kg SC, ONE a day (Trust guideline).
Clopidogrel 300mg po stat then 75mg od
Bisoprolol 2.5-5mg od
Atorvastatin 40mg noce
GTN infusion 0.1%-1.10mg/hr (1-10ml/hr) IF symptoms persist & BP>100 systolic (Trust guideline).
Tirofiban IF symptoms are ongoing & ECG is diagnostic and Troponin T +ve (Trust guideline).
Bloods: FBC, U&E, Troponin T, glucose, lipids.

Read our current Troponin T interpretation guidelines on our website – includes non-ACS causes of elevated Troponin T
Find out more about our Troponin T reporting of results for secondary care

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Troponin T: reporting of results:

To bring us in line with the Suspected Acute Cardiac Chest Pain Guidance form the AGWCS Network (September 2012) - from 4th August 2014 the Department of Chemical Pathology at GHNHSFT will start reporting results of the high sensitivity Troponin T assay to a lower limit of 14ng/L. This is because 99% of normal subjects will have a result less than 14ng/L.

This will enable rule out of MI in patients presenting with low risk cardiac sounding chest pain who have a Troponin T result of <14ng/L at 6 hours post chest pain and eliminate the need to wait till 12 hours post chest pain for a Troponin result in these patients.

Low risk patients with a Troponin T result between 14ng/L and 30ng/L at 6 hours post chest pain will need a repeat sample taken at 12 hours to determine whether the level is stable or rising. This result may be consistent with non-ischaemic conditions.

Troponin T >30ng/L at any time post chest pain is consistent with MI or unstable angina:

Results will be reported with the report comment:

<table>
<thead>
<tr>
<th>Cut-offs at 6 hours post Chest Pain</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>&lt;14 ng/L</td>
<td>Normal Troponin.</td>
</tr>
<tr>
<td>14-30 ng/L</td>
<td>Indeterminate Troponin: Cannot exclude Acute Coronary Syndrome: consider ACS in conjunction with the clinical picture. Repeat at 12 hours post chest pain to determine if rising or stable level. Consistent with many non-ischaemic causes (see <a href="http://tinyurl.com/pnek6tl">http://tinyurl.com/pnek6tl</a>)</td>
</tr>
<tr>
<td>&gt;30 ng/L</td>
<td>Positive Troponin. Consistent with (but not diagnostic of) Acute Coronary Syndrome, consider the clinical setting and please refer to: <a href="http://tinyurl.com/pnek6tl">http://tinyurl.com/pnek6tl</a></td>
</tr>
</tbody>
</table>

For more information about the use of Troponin T (including non-ACS causes of Troponin T elevation) please refer to the Cardiology Troponin T Interpretation Guidance webpage: [http://tinyurl.com/pnek6tl](http://tinyurl.com/pnek6tl)
Low Risk Pathway
Cardiac Sounding Chest Pain resolved
AND NORMAL or Non-Diagnostic ECG

Presentation Troponin T

>30ng/L

And Repeat Troponin T at 6 hours post onset of chest pain

14 – 30 ng/L

< 14 ng/L

< 14 ng/L

< 14 ng/L

14 – 30 ng/L

Repeat Troponin T at 12 hours post onset of chest pain

14 – 30 ng/L

LOW RISK
Consider other diagnoses.
If angina is still possible ask GP to consider referral of patient to RACPC.
If ongoing symptoms, consider alternative diagnosis or refer to cardiology for consideration of specialist investigation.

Escalate to NSTEMI/Unstable Angina pathway

LOW RISK
If angina is still possible ask GP to consider referral of patient to RACPC.
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