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

and Cardiac Chest Pain Pathway

History and Examination (Note 1)

If 1st 2 ECGs show no acute changes & patient considered to be low risk, discuss with AEC

If the clinical picture is suggestive of ACS, also 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 as appropriate (Note 2) and check blood sugar

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

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

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

Take blood for Troponin T on arrival using the approved method (note 7)

ABNORMAL ECG (Note 5)
Suspect ACS. Commence ACS treatment (Note 6). Follow Troponin T Flow Chart.

NORMAL ECG with a suspicious history
Follow Troponin T Flow Chart. Discuss with AEC

IMMEDIATE TRANSFER TO CGH/BHI
999 Blue light ambulance

Continue to monitor symptoms/ECGs/observations

MOVE BETWEEN CATEGORIES/ESCALATE AS PATIENT’S CONDITION DICTATES:
ongoing chest pain, dynamic ECG changes, dysrhythmia, pulmonary oedema
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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 guideline
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/prominent R in V1-2

LEFT BUNDLE BRANCH BLOCK
- New or with a good history
- Discuss with senior clinician.

Note 4
ACTIVATE PPCI Pathway

Current anti platelet treatment for STEMI in this Trust is ticagrelor 180mg po STAT Trust guideline

Contact:
Hartpury Suite CGH (Mon – Fri. 8.30am – 4.30pm) ext 722995
OOH – 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: ASK a senior Dr if in doubt
ST DEPRESSION
T WAVE INVERSION (isolated in AVR or V1 is OK)
LVH, PACED – difficult interpretation masking abnormalities.

Note 6
Current Trust recommendations:
Aspirin 75mg od (after initial 300mg dose)
Clopidogrel 300mg po stat then 75mg od
Fondaparinux 2.5mg s/c od
Renal impairment (eGFR <20ml/min) use Enoxaparin 1mg/kg SC, ONCE a day Trust guideline
Bisoprolol 2.5mg od
Ramipril 2.5mg nocte
Atorvastatin 80mg nocte
GTN infusion 0.1%–10mg/hr (1–10ml/hr)
IF symptoms persist & BP>100 systolic Trust guideline
Tirofiban IF symptoms are ongoing AND ECG is diagnostic AND Troponin T +ve Trust guideline

NOTE – Anticoagulated patients: Treatment dose Fragmin® (to start once INR below therapeutic range or when next dose of omitted NOAC would be). Renal impairment (eGFR <30ml/min) use Enoxaparin 1mg/kg SC, ONCE a day Trust guideline

Bloods: FBC, U&E, Troponin T, Glucose, lipids.

Note 7
Venepuncture: DO NOT USE A SYRINGE Use a vacutainer with a needle/butterfly or cannula into a rust bottle. Add a ‘ED ACS Pathway’ sticker to blood form & specify ‘presentation’ or ‘repeat’ sample with collection time.
Troponin T Interpretation Flow Chart starting from initial/presentation Troponin T result (where eGFR is >40)

**UNSCHEDULED CARE ONLY**
Always discuss with a senior doctor if in doubt.

**<5ng/L**
- If symptoms >3 hours ago
- If symptoms <3hrs ago, repeat ≥3hrs after symptoms

**5 – 11.9 ng/L**
- Repeat minimum 1 hr after the first sample. **If CHANGE is:**
  - <3 ng/L
  - ≥5ng/L
  - 3.0 - 4.9ng/L

**12 – 51.9 ng/L**
- Repeat minimum 1 hr after the first sample. **If CHANGE is:**
  - <5 ng/L
  - ≥5ng/L

**≥52 ng/L**
- ACS RULE IN: ADMIT to cardiology
  - Start ACS treatment (note 6)

**Consider all causes of raised Troponin T** click here for details

**RISK STRATIFY**
- **NO**
  - *High Risk Features:
    - Ongoing/Recurrent Chest Pain
    - Dynamic (Changing) ECG changes
    - Crescendo Angina Symptoms

**GRACE 2 <109 LOW RISK**
- Start aspirin 75mg od.
- Discharge
- **RACPC referral if suitable:** complete form and leave in tray with paper ED notes & all ECGs click here for referral form and referral criteria

**GRACE 2 109 – 140 MEDIUM RISK**
- Start aspirin 300mg stat then 75mg od & clopidogrel 300mg stat then 75mg od.
- Admit AMU/ACUC for further review & refer to cardiology if ACS suspected.

**GRACE 2 >140 HIGH RISK ACS**
- ADMIT to cardiology
  - Start ACS treatment (note 6)

**Calculate ‘6 month death’ GRACE 2 SCORE** click here

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