The Worcestershire Royal Hospital Primary Angioplasty Protocol

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

Worcestershire Acute Hospitals NHS Trust has been providing a 24/7 primary percutaneous coronary intervention (PPCI) service since 1/10/2012. This document lays out the operational policy with guidance. All patients diagnosed with ST Segment Elevation Myocardial Infarction (STEMI) fulfilling the entry criteria within the catchment area of Worcestershire Royal, Alexandra, Kidderminster and Herefordshire County Hospitals will have access to the PPCI service

This protocol is for use by the following staff groups:

- Cardiology
- ED
- WMAS
- Other referrers to PPCI service

Lead Clinician(s)

Dr Jasper Trevelyan	Consultant Cardiologist/Clinical Lead
Approved by [Cardiology Directorate] on:	11th December 2024
Approved by Medicines Safety Committee on: *Where medicines are included in document.*	N/A
Review Date: This is the most current document and should be used until a revised version is in place	11th December 2028

Key amendments to this guideline

Date	Amendment	Approved by: (name of committee or accountable director)
December 2024	Document approved at Cardiology Directorate	Cardiology Directorate

1. The PPCI Team

During daytime hours, the PPCI Team will comprise:

- Duty Consultant Interventional Cardiologist
- Cardiac Catheter Lab Sister and nurse
- Cardiac Physiologist
- Cardiac Radiographer

If additional medical input is required for an unwell patient (examples: cardiogenic shock, pulmonary oedema, unstable arrhythmias), the following will be urgently contacted:

- Cardiology Registrar (bleep 0467 in hours)
- ITU registrar (bleep 0702)

Out of hours, the PPCI Team will comprise:

- Duty Consultant Interventional Cardiologist
- Cardiac Catheter Lab nurse on call
- CCU nurses x2
- Cardiac Physiologist
- Cardiac Radiographer

If additional medical input is required for an unwell patient (examples: cardiogenic shock, pulmonary oedema, unstable arrhythmias), the following will be urgently contacted:

- Medical Registrar (bleep 0698)
- ITU registrar (bleep 0702)

2. Eligibility Criteria for PPCI

Inclusion Criteria

PPCI provides the optimal method of reperfusion for patients with ST elevation myocardial infarction (STEMI). It carries some risks and should be used in those patients most likely to benefit from the procedure:

- Alert and conscious.
- Symptoms compatible with a STEMI <12hrs duration.
- Accompanied by ECG criteria of:

- ST segment elevation >1mm in contiguous limb leads or >2mm in contiguous chest leads.
- Left Bundle Branch Block (LBBB) if the clinical presentation is consistent with AMI (cardiac chest pain lasting >15 mins often associated with dyspnoea and diaphoresis, see below)

- Patients resuscitated from cardiac arrest at the scene not requiring intubation/ventilation who have ECG criteria for STEMI are eligible.

Cases Requiring Discussion

For other patients, the diagnosis of or the optimal treatment for STEMI may not be clear. Examples are shown below and such patients should be discussed with the interventional cardiologist or general cardiologist (depending on how likely the clinical scenario is to represent STEMI) on call:

- Patients resuscitated from cardiac arrest but ventilated at presentation to an emergency department or in hospital (these patients are most likely to benefit from PPCI if there is a history of chest pain preceding the arrest or ST elevation on the ECG after resuscitation, but mortality is high and cases need to be considered on an individual basis. Suggested clinical criteria to consider are included in appendix 2).
    - For patients with ST elevation, intubated and requiring transfer from a non-PCI centre to WRH, consideration can be given to thrombolysis initially if transfer is prolonged – please discuss with the on call interventional cardiologist
- Prolonged pain starting >12 hours prior to call for help
- Decreased conscious level.
- Paced rhythm.
- Acute haemorrhage.
- Trauma (CPR not included).
- Patients with advanced malignancy, advanced dementia, extreme frailty and/or requiring full time nursing care

Cases Excluded

For some patients, PPCI is inappropriate. Patients with STEMI who are excluded should be transferred immediately to the nearest emergency department.

Examples are:

- Unresuscitated cardiac arrest at the scene-any diagnosis.
- Resuscitated cardiac arrest at the scene-diagnosis uncertain.

(Intubated/ventilated patients pre hospital should be taken to the nearest emergency dept in the first instance).

LBBB

Diagnosis of MI in the presence of LBBB is difficult. Additional ECG criteria have been published but are difficult to use in real life and not widely applied as a result. Patients with MI and LBBB have a worse prognosis and should not be denied potentially effective treatments, but many patients with LBBB and chest pain do have an MI (as many as 85% in some series). Determining whether LBBB is new or old is often not possible.

For these reasons, patients with chest pain and LBBB should be considered for PPCI only **IF THE CLINICAL PRESENTATION IS HIGHLY SUGGESTIVE OF MYOCARDIAL INFARCTION**. This usually means prolonged (>15 minutes) cardiac sounding chest pain (tight/heavy, central pain, often radiating to the arms and jaw NOT pleuritic or positional pain), resistant to treatment with GTN and usually associated with other symptoms of MI (dyspnoea, nausea, pallor, sweating).

If there is doubt about these criteria, please discuss the case with the PPCI team via the PPCI phone (01905 760526, internal 30196).

3. Assessment and Transfer of PPCI Patients to Worcestershire Royal Hospital

Patients presenting with STEMI are either diagnosed pre-hospital (usually by paramedics with West Midlands Ambulance Service Trust (WMAST), or the Welsh Ambulance Service for patients on the Wales/Herefordshire border) or in hospital (either within the PPCI centre (WRH) or in a referring centre. The assessment and process for transfer will be described separately for the two groups

3.1 Diagnosis of STEMI Pre-Hospital (usually by WMAST in the community)

Patients will be identified by trained ambulance crews making a pre-hospital diagnosis of STEMI using on-board 12 lead ECG. The ambulance crews will directly transfer patients to the Worcestershire Royal Hospital bypassing the nearest Emergency Department. WMAST have working regional guidelines in place for the diagnosis and pre-hospital management of PPCI patients

3.1.1 Protocol for the Management of a community Referral by the Ambulance Service

- Paramedics: clinical signs and symptoms of AMI suspected. Take BP in both arms.
- Paramedics obtain a 12 lead ECG as soon as possible.

- Paramedics examine and assess patient in accordance with the regional guidelines (Appendix 1).
- Paramedics insert IV cannula, and administer:

  a. Aspirin 300mg orally.
  b. Oxygen (if needed) and analgesia

  Thrombolytic therapy should NOT be given.

- The paramedic ambulance crew treating the patient is responsible for contacting Worcestershire Royal Hospital PPCI phone **(01905 760526, internal 30196)**, confirming the patient is suitable for PPCI. The following details will be given and recorded in the PPCI folder:

  - Patient name.
  - Patient date of birth or age.
  - Patient symptoms
  - Infarct territory if known.
  - Current location.
  - Whether patient has been treated in Worcestershire Royal previously.
  - Estimated time of arrival.
  - Crew call sign in case further contact required (Urgent control room number for contact: 01384 215510 OR helpdesk: 0121 3079119; Welsh ambulance hub number 01267229466)

Daytime Hours

- The senior CCU nurse taking the call on the PPCI phone will contact the consultant interventional cardiologist working in the cardiac catheter lab **(ext 39176/30910/39919)** with the clinical details.
- If the duty consultant interventional cardiologist agrees the patient should be considered for PPCI, the patient will usually be admitted directly to the cardiac catheter suite; if ED care is required, the senior CCU nurse will inform the emergency department **(30503/30596/DDI 01905 760540 OR bleep 0419 nurse in charge)** that a possible PPCI case is expected and give the estimated time of arrival
- If the duty consultant interventional cardiologist does not agree that PPCI should be considered, WMAST will be informed to take the patient to either the emergency department at WRH or the nearest emergency department for medical assessment.

Out of Hours

- The senior CCU nurse taking the call on the PPCI phone will contact the duty consultant interventional cardiologist with the clinical details.
- If the duty consultant interventional cardiologist agrees the PPCI team should be activated, the nurse will contact all members of the PPCI team (on call radiographer, on call cardiac technician, on call catheter laboratory nurse) and give the estimated time of arrival. The patient will usually be admitted directly to the cardiac catheter suite (via OLD ED entrance); if ED care is required, the nurse will also inform the emergency department **(30503/30596/DDI 01905 760540 OR bleep 0419 nurse in charge)** that a PPCI case is expected and give the estimated time of arrival. If there is a clinical reason for additional medical support, the medical registrar **(bleep 0698)** will be informed that a PPCI case is expected
- If the duty consultant interventional cardiologist does not agree that the PPCI team should be activated, WMAST will be informed to take the patient to either the emergency department at WRH or the nearest emergency department for medical assessment.
- If any PPCI team members do not respond, the senior CCU nurse will urgently inform the consultant interventional cardiologist on call.
- To reduce risk of delayed contact, staff on call will provide a secondary back up phone number

3.2 Diagnosis of STEMI In-Hospital

STEMI patients presenting to the emergency departments of Worcestershire Royal, Alexandra, and Herefordshire County Hospitals or the nurse led minor injuries unit at Kidderminster hospital or hospital in-patients will also have access to PPCI via immediate WMAST transfer using the same entry/exclusion criteria (patients in Worcestershire Royal Hospital will not need ambulance transfer but should follow the pathway for activation of the PPCI team as below). These patients will be transferred as ***an emergency under blue light conditions. WMAST should be phoned on 01384 215520 and will respond to the following request: "I require a paramedic crew to undertake an emergency transfer from (state unit/ward ambulance should attend) to take to Worcestershire Royal PPCI centre".***

- In the event of a STEMI, the treating clinician will insert an iv cannula, and administer:

  - Aspirin 300mg orally.
  - Prasugrel 60mg od (or alternate antiplatelet if advised by PPCI team)
  - Oxygen and analgesia if required

  Thrombolytic therapy should NOT be given.

- The referring clinician is responsible for contacting Worcestershire Royal Hospital PPCI phone **(01905 760526, internal 30196),** confirming the patient is suitable for PPCI. The following details will be given:

    - Patient name.
    - Patient date of birth or age.
    - Infarct territory if known.
    - Current location.
    - Whether patient has been treated in Worcestershire Royal previously.
    - Time of call to WMAST for emergency transfer

- The referring clinician is responsible for ensuring the following documentation accompanies the patient.
    - ECGs.
    - Hospital notes if available or photocopy.
    - wah-tr.primarypciworcester@nhs.net can be used if required

Daytime Hours

- The senior CCU nurse taking the call on the PPCI phone will contact the consultant interventional cardiologist working in the cardiac catheter lab **(ext 39176/30910/39919)** with the clinical details.
- If the duty consultant interventional cardiologist agrees the patient should be considered for PPCI, the patient will usually be admitted directly to the cardiac catheter suite; if ED care is required, the senior CCU nurse will inform the emergency department **(30503/30596/DDI 01905 760540 OR bleep 0419 nurse in charge)** that a possible PPCI case is expected and give the estimated time of arrival
- If the duty consultant interventional cardiologist does not agree that PPCI should be considered, the case will be discussed directly with the referring clinician.

Out of Hours

- The senior CCU nurse taking the call on the PPCI phone will contact the duty consultant interventional cardiologist with the clinical details.
- If the duty consultant interventional cardiologist agrees the PPCI team should be activated, the nurse will contact all members of the PPCI team (on call radiographer, on call cardiac technician, on call catheter laboratory nurse) and give the estimated time of arrival. The patient will usually be admitted directly to the cardiac catheter suite (via OLD ED entrance); if ED care is required, the nurse will also inform the emergency department **(30503/30596/DDI 01905**

760540 OR bleep 0419 nurse in charge) that a PPCI case is expected and give the estimated time of arrival. If there is a clinical reason for additional medical support, the medical registrar **(bleep 0698)** will be informed that a PPCI case is expected

- If the duty consultant interventional cardiologist does not agree that the PPCI team should be activated, the case will be discussed directly with the referring clinician.
- If any PPCI team members do not respond, the senior CCU nurse will urgently inform the consultant interventional cardiologist on call.
- Patients within the Worcestershire Royal Hospital will be attended by the CCU nurses and transferred to the cardiac catheter laboratory as soon as the PPCI team arrives in the hospital

3.3 Transfer of Patients to Worcestershire Royal Hospital by WMAST

- The patient should be delivered to the Worcestershire Royal Hospital cardiac catheter suite via the OLD emergency department entrance
- The paramedic monitors the patient's condition and observations continuously on the journey to Worcestershire Royal Hospital noting any change on the patient record file (PRF).
- A label should be attached to the PRF. The top copy of the checklist and PRF as well as a copy of the ECG are handed over to the receiving cardiac assessment or emergency department sister at Worcestershire Royal Hospital.
- Patients should be transferred with the paramedic defibrillator attached, supplemental oxygen and emergency drugs

4. Care Within Emergency Department (if required, default is admission direct to cardiac catheter suite)

- If the patient requires admission via ED, on arrival in hospital, the patient will be admitted via the emergency department ambulance entrance.
- Reception procedure:
    - Patients are triaged on arrival by an ED nurse. Category 1 patients (arrests/unstable/low GCS) will be seen immediately by ED nursing and medical staff. Category 2 patients (stable) must be seen within 10 minutes. If the cardiology team is not available, the medical registrar will be called in the first instance,

but if he/she is unable to see the patient within 10 minutes, the nearest ED doctor should attend.

- In most cases, the patient will need review by the cardiologist or deputy (registrar or cardiac nurse specialist) while in the ED Department to confirm the diagnosis of STEMI and the indication to proceed to primary PCI.

- In some cases the diagnosis of STEMI and indication for primary PCI will already have been confirmed before arrival at WRH. If the consultant cardiologist indicates that the cardiac catheter laboratory is ready, these patients should be admitted directly to the cardiac catheter laboratory without stopping in the emergency department. If the lab is not ready, the cardiac and ED staff will liaise to direct the patient to an appropriate ED or catheter lab bay while the lab is made ready.

- Unstable patients should be assessed and treated in the ED Department before transfer to the cardiac catheter lab because the ED Resuscitation Room is optimised for this purpose. This will involve joint working between the ED doctors and nurses, medical registrar and cardiology team (see 5.1 below). The cardiologist should assess the patient to determine the immediate management including suitability for PPCI.

- If on arrival the patient is in extremis due to cardiogenic shock/pulmonary oedema, the duty medical SpR (bleep 0698) and anaesthetic SpR (bleep 0702) should be bleeped to assist the cardiology/ED teams in initial medical stabilisation, including potentially intubating and ventilating prior to angiography.
- In occasional cases, the interventional cardiologist may recommend that thrombolysis should be administered as PPCI cannot be performed (for example multiple cases arriving at the same time or in the event of lab failure)
- If STEMI is excluded at initial assessment in the emergency department by the consultant cardiologist or ED clinician or nominated deputies, the patient will be managed according to standard procedures in ED.
- Many patients in whom STEMI is excluded will require admission by the medical team for further assessment; the senior cardiac nurse will refer to the medical registrar on call (bleep 0698). If the registrar is not available or does not answer, it may be appropriate for the ED nursing staff or medical staff to be involved. Team-working and communication are paramount.
- Some patients in whom STEMI is excluded, either within the department or after telephone advice via the PPCI line, but the underlying diagnosis is uncertain will be best managed according to standard procedures in ED by the ED nursing and

ED medical staff. It is crucial that the cardiology and ED teams communicate about who is taking responsibility for these patients. The cardiology medical and nursing team are available for consultation. Again, team-working and communication are paramount.

4.1 Nursing Care within the Emergency Department (if required, default is admission direct to the cardiac catheter suite)

- Patients who are expected and suitable for immediate admission to the cardiac catheter laboratory will be met on arrival in the emergency department by one of the cardiac nursing team (cathlab nurses in the daytime, CCU nurses out of hours) and directed with paramedics in attendance straight into the cardiac catheter laboratory, or into an adjacent patient bay.

- Patients who are unstable on arrival should be assessed and treated in ED Resuscitation Room. This will involve joint team working, with ED nurses/doctors leading the reception/emergency management role and cardiology nurses leading in the cardiac monitoring/cath lab preparation role. The cardiologist will review suitability for PPCI, and direct transfer of the patient to the cardiac catheter laboratory if appropriate.
- The cardiac nursing team will be responsible for preparing the patient for the procedure in line with the pre-PPCI check list (appendix 2).

5. Management of the Patient in the Worcestershire Royal Hospital Cardiac Catheter Laboratory

- On arrival in the cardiac catheter laboratory all patients must have a 3 point check (name, address, date of birth) regardless of the mode of referral. The time-out / WHO checklist will be undertaken verbally with all members of the team present and documented on the whiteboard and paper.

- Cardiac catheter laboratory sister will check that the pre-PPCI check list (appendix 1) has been completed and the patient has been prepared for the procedure

- Duty consultant interventional cardiologist will explain the procedure to the patient and take VERBAL consent for PPCI

- After venous or arterial cannulation, bloods should be taken for biochemistry, haematology, clotting, lipids, glucose, group and save.

- All patients should have a long intravenous line attached.

- After the case is completed, the patient will be transferred to the primary PCI bed on CCU

- If STEMI is excluded in the cardiac catheter laboratory before emergency angiography, the patient may be admitted direct to CCU/Aconbury 1; if admission elsewhere is required, the on call capacity site manager (bleep 0557) will be contacted; if immediate medical input is required, medical registrar (bleep 0698) will be informed

6. Duties of Team Members

6.1 Consultant Interventional Cardiologist

- The duty interventional cardiologist of the day will be a nominated consultant in the cath lab 0800-1800 hrs and thereafter the on call consultant.
- When a PPCI call is received, the consultant will indicate whether the cardiac catheter laboratory can be made ready in time for the ETA, or whether the patient should be admitted to ED while the cardiac catheter laboratory is made ready
- If a PPCI procedure cannot be performed in an appropriate timescale the cardiologist will indicate whether thrombolysis should be administered
- Briefly take a history and examine the patient. If VSD or acute MR is suspected, an echocardiogram will be performed.
- Explain the procedure and take verbal consent. Instigate the time-out / WHO checklist when the team are all present.
- Assist with patient transfer and escort if necessary.
- Assist with catheter lab preparation and documentation if necessary.
- Proceed with appropriate emergency medical management.
- Upon case completion within the catheter lab outline a medical plan including an initial assessment regarding the likely length of stay and whether the patient may require a period of convalescence.
- In the event of the primary PPCI service being closed the consultant is responsible for notifying the cardiac catheter laboratory sister who will notify WMAST and the referring hospitals

6.2 Cardiac Cathlab Nurse /CCU Nurse

- Respond immediately to a call from the PPCI phone
- Meet the potential PPCI patient at the old ED entrance if brought in by ambulance, or assess the patient in WRH if an in-patient already
- Ensure CCU nurse takes the PPCI emergency grab bag

- Interpret the presentation ECG and confirm criteria for PPCI met
- Consult with consultant interventional cardiologist if doubt about suitability for PPCI procedure
- Provide nursing care to PPCI patient while the cardiac catheter laboratory is made ready for patient
- Complete the pre-PPCI checklist
- Transfer patient to the cardiac catheter laboratory
- Provide additional nursing care out of hours during and after PPCI procedure
- Hand over patient with catheter laboratory staff to CCU nurses if required

6.3 Catheter Lab Sister and Nurse

- Three point check + participate in time-out / WHO checklist
- Greet the patient and family and orientate them to the clinical area
- Apply wrist bracelets.
- Connect to oxygen therapy and hospital portable defibrillator.
- Ensure the pre-PPCI check list (appendix 1) has been completed, the patient is prepared for the procedure (right wrist and groin shaved and) and aspirin and ticagrelor have been administered
- Undress patient. Cut clothes off only if the patient is unable to assist
- Ensure IV access and send blood samples (full blood count, biochemistry, clotting, group and save, usually taken after arterial access obtained).
- Relieve pain and give anti-emetics as appropriate
- Prepare patient for angioplasty as time allows, including gowning, or provide on going care and management of clinical condition.

- Scrub and assist cardiologist during PPCI procedure as standard angioplasty case
- Extra IV drugs may be required during the angioplasty, for example adenosine, phenylephrine, eptifibatide, verapamil.
- After angioplasty for all patients ensure IV access.
- Ensure all blood samples have been taken.
- Obtain 12 lead ECG.
- Ensure aspirin and prasugreal/ticagrelor have been given.
- Clarify the need for IIb/IIIa inhibitors. If they are currently being given ensure correct administration.
- Closely supervise for vascular access complications.
- Communicate medical management with patient and family.
- In the event of the relatives arriving to the unit before the patient they should be given information regarding the whereabouts and condition of the patient.

6.4 Cardiac Technician

- Put up pressure bag and ensure the defibrillator is switched on and in working order.
- Check patient in if the radiographer or nurse is unable to do so. Participate in time-out / WHO checklist
- Connect patient to ECG monitor
- Apply defibrillator pads
- Defibrillate patients is VT/VF occur, as guided by medical staff
- Prepare the IABP if necessary.
- Patient details and document procedure on Cardioreport system

6.5 Cardiac Radiographer

- Switch on Siemens imaging system if not already done so
- Test fluoro on before patient goes on table
- Check patient ID. Participate in WHO checklist
- Check patient in if needed.
- Patient details on radiology cris system.
- Check pregnancy status in women of child bearing age.
- Check for contra indications to IV contrast agent
- Check creatinine level.
- Assist the nurse pre and post procedure..

6.6 Duty Medical Registrar

- Attend ED or cardiac catheter laboratory to assist in management of medical condition of patient if required
- Take over care of patient if STEMI is excluded at initial assessment

7. PPCI Service Closure

Only the duty Consultant Interventional Cardiologist can close the service.

The consultant will be notified of operational issues such as lab failure (this will be a very rare circumstance). Cardiac catheter servicing may also lead to closure of the PPCI service on a planned basis.

- The duty Consultant Interventional Cardiologist will notify the senior cardiac catheter laboratory sister that the PPCI service is closed.
- The Trust Emergency Preparedness Resilience Response team will be informed immediately

- The duty Consultant Interventional Cardiologist will inform the interventional cardiologist at local tertiary centres (e.g. UHB/UHCW/RWHT) that the service at WRH has been closed and determine whether these centres can accept patients near enough for transfer for PPCI or rescue PCI in the event of failed thrombolysis
- The cardiac catheter laboratory sister will notify WMAST on **01384 215520 Or helpdesk: 0121 3079119** who will then cascade the information to WMAST crews.
- The cardiac catheter laboratory sister will also notify the referring emergency departments participating in the service
- A time of next call to advise on when the service will re-open will also be given.
- Patients presenting with STEMI during a period of PPCI service closure will be treated with thrombolysis, either pre-hospital or in ED.
- When the service reopens the duty Consultant will inform the Ambulance Trust Clinical Advisor and each of the Sector emergency rooms.

8. PPCI Bed

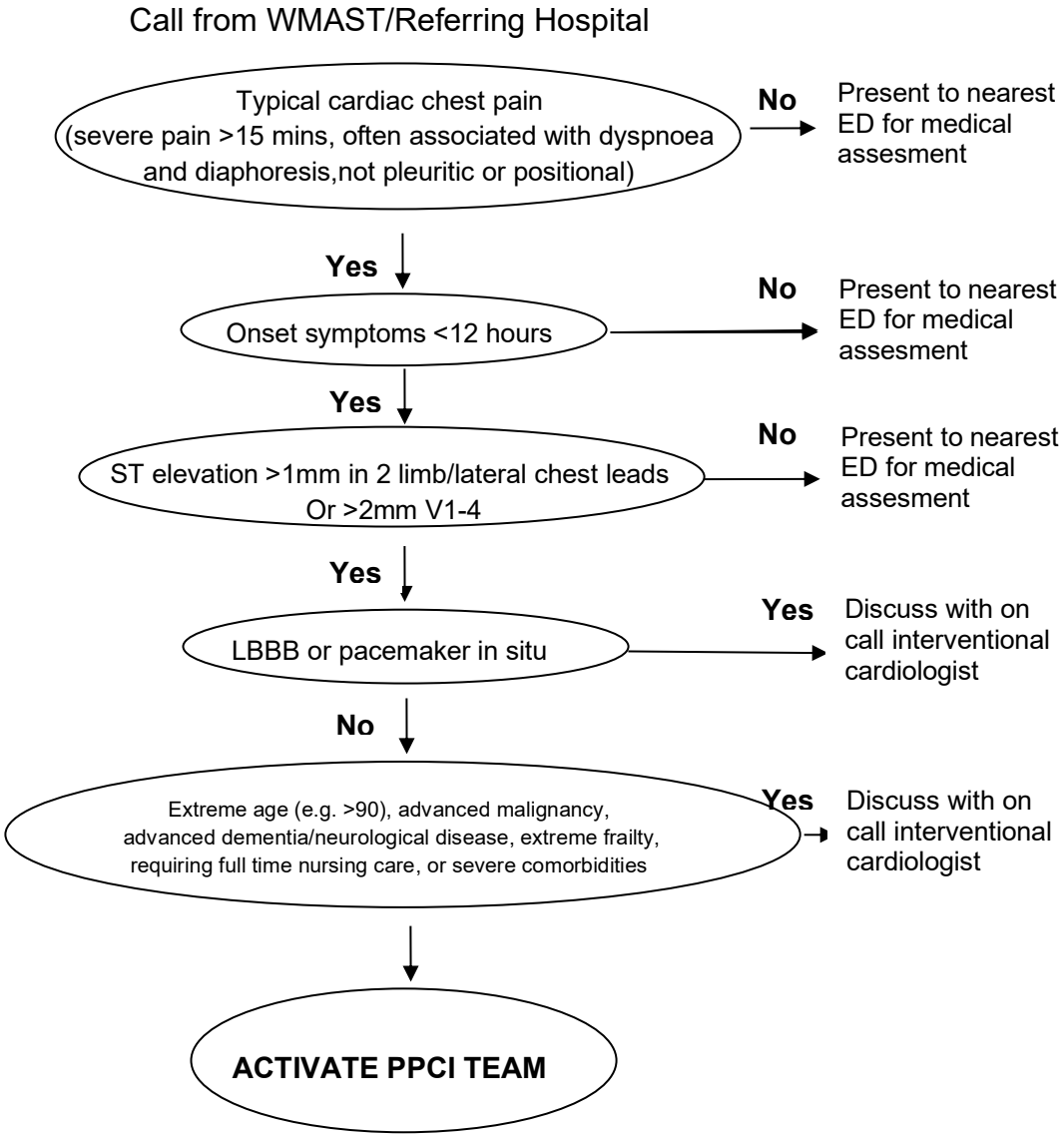
- CCU at WRH intends to always have a bed available for PPCI patients, to allow timely transfer from the cardiac catheter laboratory after PPCI to CCU. If the PPCI bed is occupied the following processes are followed to recreate the PPCI bed
    - Full handover from nurse in charge (NIC) on one shift to the next
    - During handover NIC will identify patients that can be stepped down to our cardiology ward, Aconbury 1, to one of the 8 monitored beds
    - Patients that can transferred to discharge lounge at the earliest opportunity will be identified
    - Liaising with capacity for support to transfer any identified patients that are suitable to outlie on other areas (use of Outlying status box on Sunrise is encouraged to aid this process)
    - Identify any stable patients that can reverse board (discuss with on call consultant if required)
    - Discuss with family members if they can assist with bridging gaps of care for those patients MFFD awaiting pathway 1
    - Golden discharges for the following day are identified and prepped with EDS and TTO's and transport arranged and transfer to discharge lounge or sit out on ward if unable to go to discharge lounge
    - Criteria led discharge is utilized to identify patients who can be discharged outside of ward round times
    - Liaising with Alex ward 6 and CCU and HCH to repatriate patients.
- In the event of bed pressures at WRH, it has been agreed that this bed may only be used for a non-PPCI admission when the hospital activates the level 4

capacity policy, and only after discussion with the on call consultant interventional cardiologist and on call executive.

9. Cardiac Rehabilitation

- The cardiac catheter laboratory staff will let the cardiac rehabilitation team at the referring hospitals (Alexandra Hospital, Redditch and County Hospital, Hereford) know which patients have undergone PPCI each day so that cardiac rehabilitation can be offered. Cardiac rehabilitation teams can be contacted on the following email addresses:
    - Hereford: wvt.cardiacrehab.department@nhs.net
    - Worcester/Redditch: wah-tr.worcs.cardiacrehabilitation@nhs.net

Flow Chart for Decision to Activate PPCI Team Out of Hours



Appendix 1. Primary PCI Checklist

Patient Label

☐ Name Band ☐ Patient Labels

☐ Medical notes / Drug charts ☐ ECG

☐ Cannula (ideally left side / 18g (green))

☐ Jewellery/Nail Varnish removed ☐ Rings taped

☐ Ticagrelor 180mg ☐ Aspirin 300mg

☐ Verbal consent (cardiologist) ☐ Take bloods if time

(FBC/U+E/G+S/Clotting/CK/TnT)

NBM since: Diet …… Previous bloods: Hb…..Plts..
Cr……
Fluids …… Clotting…..

Weight: …… Height: ……

Baseline Obs: BP: …… Pulse: …… Sats: …… Temp: ……:

Is the patient Diabetic? Yes ☐ No ☐

If diabetic last BM: …… (Time ……)

Allergies: ……

Checklist completed by: …….. (Signature and designation)

Date: ……

Appendix 2

Resuscitated Out of Hospital Cardiac Arrest and Interventional Cardiology

Patients suffering out of hospital cardiac are a complex and varied group. Acute myocardial infarction is an underlying pathology amenable to treatment, usually by interventional cardiology procedures, but such procedures may be unhelpful, or dangerous, in patients with other pathological processes, and even in some patients with acute MI.

It is not possible to provide clear guidelines on the management of such patients, and each case should be assessed on it's own merits, usually involving discussion between the Intensive Care and Interventional Cardiology consultants.

Recent research presentations can give some guidance to aid these discussions and decisions on management:

Decision to Perform Cardiac Catheterisation After OOH Cardiac Arrest

Clinical indications for cardiac catheterisation after resuscitated OOH cardiac arrest are:

- STEMI on ECG after resuscitation
- Other cases should be decided on an individual basis

Decision to Not Perform Cardiac Catheterisation After OOH Cardiac Arrest

Similarly, clinical criteria have been used to attempt to identify groups in whom the likelihood of recovery after resuscitated cardiac arrest is low. The MIRACLE$_2$ score is composed of seven variables with a potential total of 10 points. Higher scores predict an increasing risk of poor neurological outcome (CPC 3–5). The score components are: unwitnessed cardiac arrest (1 point), non-shockable initial rhythm (1 point), changing rhythms (any two of VF, pulseless electrical activity (PEA) or asystole; 1 point), any adrenaline dose (2 points), no pupil reactivity at ROSC (1 point), initial blood pH <7.20 (1 point) and age category (≤60 years, 0 points; 61–80 years, 1 point; >80 years, 2 points).

Timeliness of Cardiac Catheterisation After OOH Cardiac Arrest

It must be emphasised that the benefits of cardiac catheterisation/PCI in such patients are highly dependent on rapid treatment to open the infarct related artery. If patients are to be considered for cardiac catheterisation, this must be considered urgently

Monitoring

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the Policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: (Responsible for also ensuring actions are developed to address any areas of non-compliance)	Frequency of reporting:
	WHAT?	HOW?	WHEN?	WHO?	WHERE?	WHEN?
This area is monitored as part of the national CCAD audit, to which the Trust has always contributed	All STEMI patients treated by PPCI against CCAD audit outcomes	All CCAD audit outcomes	Monthly	Cardiology audit clerk	Dr H Routledge (cardiology audit lead) or Dr J Trevelyan (cardiology lead clinician)	Quaterly or earlier if serious untorward incidents

References

Contribution List

This key document has been circulated to the following individuals for consultation:

Designation
Dr Trevelyan

This key document has been circulated to the chair(s) of the following committee's / groups for comments:

Committee
Cardiology Directorate Meeting

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form

Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	✓	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	Dr Jasper Trevelyan

Details of individuals completing this assessment	Name	Job title	e-mail contact
	Dr Jasper Trevelyan	Consultant Cardiologist, Clinical Lead Cardiac Services	Jasper.Trevelyan@nhs.net
Date assessment completed	13.1.25		

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	Title: The Worcestershire Royal Angioplasty Protocol			
What is the aim, purpose and/or intended outcomes of this Activity?	This document lays out the operational policy with guidance			
Who will be affected by the development & implementation of this activity?	x x ❑ ❑	Service User Patient Carers Visitors	x ❑ ❑ ❑	Staff Communities Other _____

Is this:	x Review of an existing activity ❑ New activity ❑ Planning to withdraw or reduce a service, activity or presence?
What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	Update to previous document with updated pathway/contact details, no significant change to service or effect on protected groups
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	
Summary of relevant findings	

Section 3
Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale**. Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age		x		
Disability		x		
Gender Reassignment		x		
Marriage & Civil Partnerships		x		
Pregnancy & Maternity		x		
Race including Traveling Communities		x		
Religion & Belief		x		
Sex		x		

Equality Group	Potential positive impact	Potential neutral impact	Potential negative impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Sexual Orientation		x		
Other Vulnerable and Disadvantaged Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)		x		
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)		x		

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
		.		
How will you monitor these actions?				

When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)	

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Signature of person completing EIA	J Trevelyan
Date signed	13.1.25
Comments:	
Signature of person the Leader Person for this activity	
Date signed	
Comments:	

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.