

Standard Operating Procedures

Non-medical requesting of CT Coronary angiography for cardiology specialist nurses(CNS/ANPs)

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Date of Review: This is the most current document and is to be used until a revised version is available	Annually or upon changes in NHS policies, data protection regulations or departmental needs.

Aim and scope of Standard Operating Procedure (SOP):

To establish a standardised procedure for Cardiology Nurse Specialists (CNS) in the safe and appropriate referral of patients for Coronary Tomography Coronary Angiography (CTCA) ensuring quality care, patient safety and adherence to clinical guidelines.

The SOP applies to all cardiology specialist nurses (CNS) and Advanced Nurse Practitioner (ANP) within Worcestershire Acute Hospitals NHS Trust involved in the assessment of patients for CTCA and the referral process.

Responsibilities:

CNS's/ ANPs, as non-medical referrers, may request a CTCA on behalf of a medically qualified responsible referrer, provided that the referrer has delegated the responsibility in accordance with the departmental protocols.

The CNS/ANP is responsible for:

1. Patient Assessment:
 - Undertaking a thorough and detailed assessment of the patient, ensuring that the decision to request a CTCA is based on clinical need.
2. Decision Making for CTCA
 - Making the decision regarding the appropriateness of the CTCA test, in line with clinical guidelines and patient criteria.
3. Safe Requesting of CTCAs
 - Ensuring that the requesting of CTCAs is done safely, following relevant governance processes and ensuring that patient safety is prioritised.
4. Review and Action of CTCA Report
 - Once the CTCA report is complete, the CNS/ANP will review the findings and take appropriate action in accordance with the results, which may include further referral, medication initiation, or discharge.

Consultant Cardiologists responsible for:

- Overseeing the clinical decision-making,
- Providing support in complex cases, and
- Reviewing any significant or unexpected findings from the CTCA.

Target Staff Categories:

- Cardiology assessment CNS's.
- Cardiology Advanced Nurse Practitioners (ANP)

Key amendments to this Standard Operating Procedure

Date	Amendment	Approved by:
	New document	

1. Introduction

A significant component of the CNS's/ANP's role within the Worcestershire Heart Centre involves the assessment of patients presenting with chest pain. This assessment takes place across multiple settings, including:

- A&E,
- the Worcestershire Heart Centre, and
- Rapid Access Chest Pain Clinics.

As part of this responsibility, the CNS/ANP undertakes a comprehensive cardiac history and clinical assessment. Where clinically appropriate, the CNS/ANP may refer patients for further diagnostic investigations, including CTCA.

Referrals for CTCA are made only when patients meet the established criteria, as outlined in Appendix 1.

2. Background

The Royal College of Nursing (RCN) has developed a cross-professional guidance document to support non-medically qualified professionals involved in clinical imaging referrals (RCN, 2021). The guidance emphasises the importance of a collaborative, multidisciplinary approach to imaging, which is believed to enhance both the quality and efficiency of patient services.

This document outlines the responsibilities and eligibility criteria for referrers under the Ionising Radiation (Medical Exposure) Regulations 2017 (IR(ME)R 2017). These regulations set clear expectations for professionals who refer patients for imaging involving ionising radiation. According to IR(ME)R 2017, a referrer must:

- Undertake a detailed and sufficient medical history and clinical assessment (e.g., cardiac assessment) to justify the exposure to ionising radiation.
- Understand their professional accountability, in line with their regulatory body's code of conduct or equivalent, including awareness of relevant medico-legal implications within their scope of practice.
- If entitled to refer for imaging using ionising radiation, have completed appropriate IR(ME)R awareness training and gained relevant experience, including understanding the risks associated with radiation exposure.
- Ensure that IR(ME)R-related functions are clearly stated in their job description or defined scope of practice.
- Engage in continuing professional development (CPD) and be able to provide evidence of self-audit relevant to their role and responsibilities as a referrer.

This framework ensures that imaging referrals by non-medical professionals are safe, justified, and legally compliant, thereby supporting optimal patient outcomes.
(Royal College of Nursing & Health Education England, 2017)

3. CTCA Referrals by Cardiology Assessment Nurses/ Advanced Nurse Practitioners.

CTCA is a well-established and widely recognised imaging modality for the evaluation of patients presenting with chest pain. Empowering Cardiology CNS/ANPs to refer directly for CTCA supports timely assessment, expedites the diagnostic process, and enables the early initiation of secondary prevention therapies or other appropriate treatment plans.

All nurses who are authorised to request CTCAs will have completed the necessary training and competency assessments, in accordance with the Radiology Governance Framework. This includes:

- Successful completion of Ionising Radiation (Medical Exposure) Regulations (IR(ME)R) training
- Completion of a CTCA competency document
- Approval via the governance process outlined in Worcestershire Acute Hospitals NHS Trust Key Document: WHAT-KD-024

This framework ensures that referrals are clinically justified, safe, and compliant with regulatory and governance standards.

4. Criteria for Competence in Requesting CTCA

To ensure safe and effective practice, the CNS/ANP must meet the following criteria before being authorised to request CTCA:

1. Training Requirements

The CNS/ACP must complete appropriate training to request CTCA, which is approved through the Radiology Governance Process. This includes the successful completion of IR(ME)R training via the e-Learning modules 01-03, available through Electronic Service Record (ESR)/e-LfH.

The training must be refreshed every 3 years to maintain competence.

2. Supervised Practice

Evidence of satisfactory supervised practice must be provided by the CNS/ANP, with the practice being witnessed by an already competent practitioner. Refer to Appendix 2 for further details.

The required number of supervised practices to achieve competence will be determined by the CNS/ANP and their supervisor, considering the CNS/ANPs learning needs. A minimum of 5 supervised practices is required.

3. New CNS to the Trust

CNS/ANPs who are new to the Trust but have performed this skill elsewhere must:

1. Read and understand the protocol for requesting CTCA.
2. Sign off against the protocol, confirming understanding and compliance.
3. Provide evidence of appropriate education and competence, which must be checked and confirmed by the CNS/ANPs Line Manager and the Trust IR(ME)R Lead.

4. Professional Responsibility and Continuing Development

In line with codes of professional practice, the CNS/ANP must recognise and work within the limits of their competence.

The CNS/ANP is responsible for practising within the boundaries of current evidence-based practice, and following Trust policies and national guidelines.

Evidence of Continuing Professional Development (CPD) and maintenance of skill levels must be demonstrated and confirmed during the CNS/ANPs annual appraisal with their line manager.

5. Risk management and patient safety

1. Clinical Assessment Criteria

The CNS/ANP must perform a thorough clinical assessment of the patient before proceeding with any CTCA referrals. The assessment should include the following:

1. Patient History:

- Collect a detailed medical history, including previous cardiac events, surgeries, and relevant family history.

2. Current Medications:

- Document current medications, including prescribed drugs, over-the-counter medications, and supplements.

3. Allergies:

- Check and record any known allergies and confirm contrast allergy status if applicable.

4. Risk Factors:

- Assess common cardiac risk factors, including
 - Diabetes
 - Hypertension
 - Hypercholesterolemia
 - Smoking.

5. Cardiac Examination:

- Conduct a comprehensive cardiac examination, including auscultation for heart sounds, palpation, and other relevant assessments.

6. Review of Blood Test Results:

- Review blood test results, with particular attention to renal function to ensure that levels are within normal limits.

7. Pregnancy Status:

- Pregnancy status must be asked for any patient of childbearing age to assess the appropriateness of radiation exposure.

8. Pause and Think Document:

- Refer to the Pause and Think Trust document (Appendix 3) to ensure all clinical decision-making has been thoroughly considered and documented.

2. Contraindications:

The following criteria must be considered when determining whether a patient is not suitable for a CTCA referral by the CNS/ANP:

1. Lack of Patient Consent:

- The patient lacks capacity to make the decision or explicitly does not give consent for the CTCA referral.

2. Failure to Meet Departmental Criteria:

- The patient does not meet the agreed departmental criteria for CTCA referral as outlined in Appendix 1.

3. Allergic Reaction to Iodinated Contrast Medium:

- The patient has a known history of allergic reactions to iodinated contrast medium, making the use of contrast in CTCA inappropriate.

3. Limitations to Practice:

If the CNS/ANP has any concerns regarding the patient's condition, the following steps must be taken:

1. Discussion with Cardiologist:

- The CNS/ANP must discuss the patient's condition with the appropriate cardiologist before proceeding with the referral for CTCA.

2. Documentation:

- The discussion and any decisions made during the consultation with the cardiologist must be documented in the patient's medical records to ensure clear communication and continuity of care.

4. Documentation:

1. Request Submission via ICE:

- The CNS/ANP will submit the CTCA request through the ICE system.
- The responsible consultant must be clearly stated on all requests to ensure appropriate clinical oversight.

2. Detailed Referral Letter – a full, detailed letter will be written by the CNS/ANP, which includes:

- Findings of the consultation
- The clinical reason for the requested investigation
- The plan for further management

3. Medication Awareness:

- The CNS/ANP must ensure that the patient and their General Practitioner (GP) are informed about the need for any rate-limiting medications (e.g., beta-blockers or calcium channel blockers) prior to the investigation.

4. Ivabradine Prescriptions:

- For patients requiring ivabradine prescriptions before the investigation, please refer to Appendix 4 for specific guidelines on prescribing and monitoring.

5. Post-Investigation Actions by Cardiology Specialist Nurse

Upon completion of any investigations, the CNS/ANP will act upon the findings, which may include:

1. Reassurance and Discharge:

- If the findings are within normal limits, the CNS/ANP may reassure the patient and discharge them back to primary care for continued monitoring and follow-up as appropriate.

2. Initiation/Modification of Medications and Referral:

- If clinically indicated, the CNS/ANP will initiate or modify medications as required and refer the patient to the cardiology clinic for further management or follow-up.

3. Referral of Significant or Unexpected Results:

- If the investigation reveals significant or unexpected findings, the CNS/ANP will promptly refer these results to the supervising consultant for review and ongoing management.

Appendix 1: CTCA Referral Criteria

Request.	Referral criteria.
Computed Tomography Coronary Angiogram.	<ul style="list-style-type: none"> • When knowledge of coronary anatomy and the presence of atheroma or significant coronary stenosis would be useful in guiding management. • Patients under 35 years to be discussed with a cardiologist prior to referral. • No prior evidence of coronary artery disease. • Creatinine to be within normal range. • Not had coronary imaging CTCA, MPI invasive angiogram in last 2 years. • Women of childbearing age need to be asked pregnancy status 55 years or below. • Providing it is safe to do so heart rate limiting drugs should be used so that a patient's heart rate is <65bpm. • If known Atrial fibrillation patient needs to be rate controlled and this stated on the request for radiology to direct to CT1 at Worcester. • Unsuitable test for patients who have a high ectopic burden >10%. • Does not have an allergy to contrast.

Appendix 2: Radiology Competencies



Assessment of Competency for Requesting imaging under Protocol on behalf of a GP/Consultant

Assessment Specification:	The candidate should be able to demonstrate competence in requesting imaging using the following knowledge evidence and performance criteria.		
Knowledge Evidence:	<p>Following completion of the IR(ME)R e-Learning programme the candidate should be able to:</p> <ul style="list-style-type: none"> A) Demonstrate knowledge of the Trust policy for requesting imaging B) Demonstrate knowledge of the hazards associated with radiology C) Demonstrate knowledge of the IR(ME)R regulations D) Identify the reasons for requesting imaging E) Awareness of allocated protocol <p><i>You will require a mentor who is a doctor/ senior radiographer or a trained nurse who has completed a recognised requesting training course and ENB997/998 or C&G730 or APPS3059 – Assessment in Clinical Practice.</i></p> <ul style="list-style-type: none"> ➤ Please attempt to complete competencies within 6-8 weeks of completing the e-learning course ➤ Any problems, please contact the Superintendent Radiographer of the relevant site. 		
Clinical Mentor (please print):	Signature:	Date:	
Candidate (please print):	Signature:	Date:	
Ward/Department:	Directorate/PCT	Location:	
Comments by Mentor	Comments by Candidate:		

Issue date: 14.12.23 v5. Review date 14.12.26



Performance Criteria for Assessment of Competency for Requesting Imaging under Protocol

IR(ME)R e- Learning Programme completed			
Certificate inspected as evidence of training:		Mentor Signature	Date
Trust Guidelines for Nurse/Allied Health Professional Requesting imaging			
I confirm that I have read Trust Guidelines (WAHT-KD-024), available on the Radiology section of the Key Documents page: (Home Page (worcsacute.nhs.uk))		Candidate signature	Date
Protocol			
Demonstrates knowledge of individual/ward protocol: Protocol Number:.....		Mentor signature	Date
Ionising Radiation			
		Candidate signature	Date
I understand the implications and hazards associated with radiological examinations:			
		Mentor signature	Date
Demonstrates Knowledge of the Ionising Radiation (Medical Exposure) Regulations – IR(ME)R 2017			
Requesting imaging			
Completes 5 imaging requests correctly, <i>including</i> : Demographic Details; Date; Ward; Referral Information; Investigation Required; Relevant Clinical History, Referrer's Details:		Mentor signature	Date
Hospital numbers:			
Main Clinical Mentor (<i>please print</i>):		Candidate (<i>please print</i>):	
Signature: Date:		Signature: Date:	

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Appendix 3: Pause and Think Document

Diagnostic Radiology Referral

Have you “Paused & Checked”?

An IR(ME)R Referrers checklist for referring a patient for a diagnostic imaging examination

P	Patient	Ensure correct patient (3-point ID) Ensure it is physically possible for the patient to undergo the examination (e.g. any mobility issues) Ensure patient has been given adequate information and understands and agrees to examination
A	Anatomy	Ensure correct body part/laterality specified
U	User Checks	Confirm most appropriate investigation and consider non ionising radiation alternative (use of iRefer/local referral guidelines) Check previous investigations Confirm timing of examination (is date required clear?) Ensure pregnancy/breastfeeding status is verified Ensure any special needs/interpreter/disabilities/mobility documented (eg hoist required?) Ensure implantable cardiac defibrillator devices documented Ensure allergies documented and appropriate pathology results are available where requested
S	System & Settings	Confirm correct examination (code) requested Confirm correct imaging modality selection Confirm relevant clinical information is adequate to enable the Practitioner to justify the examination Confirm relevant clinical information will assist in the evaluation of the study
E	End	Confirm entitled Referrer against IR(ME)R procedures – eg unique identifier/correct user login Final check that this is the CORRECT patient Confirm the above and submit request
D	Draw to a Close	Ensure you have received an evaluation of the examination Ensure the results are discussed with the patient Confirm whether further investigation is required



IR(ME)R requires all duty holders to comply with their local employer's procedures. This 'pause and check' poster does **not replace** these procedures but represents a shortened summary of the main **checks**. **You must adhere to your local procedures at all times.**

Appendix 4: Use of Ivabradine as rate control pre CTCA

As stated in the Herford and Worcester formulary:

Red category Prior to planned CT angiogram in asthmatic patients (Specialist initiation only):

Ivabradine 5mg bd for 3 days. This off-label, non-formulary indication is used in patients who cannot have beta blockers, as they must have a heart rate less than 65bpm for the CT to give good enough images. Full 3-day supply must be prescribed and dispensed to patients by secondary care i.e. not for primary care prescribing.

For Non-medical prescribers in clinic:

- Confirm the patient's address is current and accurate before posting.
- Ask the patient to call and acknowledge receipt of prescription.
- Ensure the prescription is placed in a discreet envelope to protect patient confidentiality and avoid identification as a prescription. Include a return address in case delivery fails.

In log book document:

- Date the prescription was posted.
- Patient name and address.
- Medications prescribed.
- Staff member who posted it.

References.

- Department of health (2009) Reference guide to consent for examination of treatment 2nd edn. HMSO. London.
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- National Institute of clinical Excellence (NICE) (2010). Chest pain of recent onset: Assessment and diagnosis of recent onset chest pain or discomfort of suspected cardiac origin. NICE clinical guideline 95. <https://www.nice.org.uk/Guidance/CG95> [accessed 02/04/2025]
- Nursing and Midwifery council (NMC) updated 2018. The Code: Professional standards of practice and behaviour for nurses and midwives. Nursing and midwifery council. London. <https://www.nmc.org.uk/standards/code/read-the-code-online>
- RCN (2021) Clinical imaging request for non-medically qualified referrers, Royal College of Nursing London.
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- Worcestershire acute hospitals (current version 2022) Radiology Key documents WHAT-KD-024: Information for referrers for diagnostic imaging procedures.
- Worcestershire Acute Hospitals (current version 2024) Policy for consent to examination or treatment. WHAT-CG-075.
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