University Hospitals of Derby and Burton NHS Foundation Trust

Division of Cancer, Diagnostics & Support Services

Imaging Business Unit Procedure for CT Examinations.

Referral Guidelines, Justification Criteria & Examination Protocols

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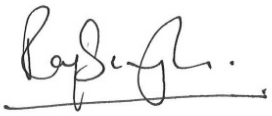
Version / Amendment History	**Version**	**Date**	**Author & Role**	**Reason**
	1.0	01/08/2020	Dr Louise Haine: ACD CT & Ultrasound Leticia Baker: CT Lead Radiographer	First archived version
	1.1	01/08/2020	Dr Louise Haine: ACD CT & Ultrasound Leticia Baker: CT Lead Radiographer	Addition of introduction
	1.2	18/02/2022	Emma Lawson: Superintendent Radiographer	Change to Omnipaque 350 for CT 072
	1.3	01/12/2022	Emma Lawson: Superintendent Radiographer	Changes to CT brain angiogram protocols to reflect change to O350 at RDH. Addition of MAKO protocols. Updated Clinical Directs signatures.
	1.4	01/05/2023	Mike Barnard CM Safety, Accreditation and Compliance	Updates to Clinical Protocols Document management & Signoff via QPulse
	1.5	28/6/2023	Huw Thomas Lead Radiographer, Imaging compliance.	Document management and Signoff via QPulse Biphasic Angiogram (072) updated to not reference outpatients.

				E6 updated to reflect 4ml/s flow rate.
	1.6	07/08/2023	Huw Thomas Lead Radiographer, Imaging compliance.	Updated to show correct contents page numbers.
	1.7	04/10/2023	Emma Lawson: Superintendent Radiographer	Change to contrast for CTPA

Intended Recipients – Essential to Role	**Intended Recipients – For Awareness / Reference**
Operators & Practitioners, ACD CT, CD – Imaging, Chair Trust RPG	Referrers
Communication: Emails via QPulse to Operators and Practitioners working under this protocol. Referrers are notified of the protocol and its location by letter, Available on QPulse and KOHA via Trust internet and Intranet sites,	**Training:** Operators and Practitioners receive training on this protocol and other IRMER Procedures.
To be Read in Conjunction with: Trust Policy Employer's procedures to meet the requirements of Schedule 2 of the Ionising Radiation (Medical Exposures) Regulations and those covering other matters relevant to the conduct of examinations involving the exposure of patients to ionising radiation.	
Groups & Stakeholders Consulted General Manager Clinical Director Key Referrers	**Equality Impact Risk Assessment** **Stage 1:** Completed **Stage 2:** N/A
Approving Groups: Plain Film Medical Exposures Committee, Imaging PQRS, Radiology Advisory Group	
Authorising Committee: The Trust Radiation Group ratify Documents issued in accordance with The Trust Radiation Safety Policy and authorise their uploading to the Trust intranet and internet sites.	
Imaging BU Sign- Off:	



Dr Rathy Kirke
Clinical Director: Imaging
01/05/2023

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Clinical Director: Imaging
01/05/2023

Mr David Tipper
General Manager: Imaging and Lead Radiographer
01/08/2020

Divisional Sign-Off:

Protocols approved by the Trust Radiation Protection Group

Active from: 01/05/2020	Review Frequency: 3 Years	Review Due: Please see QPulse

Uncontrolled when printed. Staff should consult the electronic master copy of each clinical protocol for the definitive version.

This document remains in force until replaced or withdrawn.

Examination Protocols: CT Examinations

Introduction

Evidence Base for these Protocols:

The Royal College of Radiologists: iRefer.

User Groups:

Referrers:

These guidelines are designed to assist the Referrer in selecting the most appropriate investigation for the patient's clinical condition.

These are protocols for each common clinical situation. There are no definite recommendations for each examination. Requests for clinical indications not listed in these protocols but which are within the Royal College of Radiologists 'iRefer guidelines' will be considered but require direct Justification by a practitioner on a case by case basis.

The aim for all examinations is to obtain maximum information with minimum radiation, so as to meet the legal requirement to keep radiation doses as low as is reasonably practicable (ALARP). The examination performed will be based on the referral information provided and may differ from that requested. It is important that referrers are aware of this potential variation, since the imaging undertaken may not be what the referring clinician expects. Where the referrer wishes specific radiographic projections, or for the examination to performed in a particular way, they must provide the rationale for this as part of the referral so that it can be considered by the operator or practitioner as part of the authorisation or justification decision.

Operators

Some operators may authorise CT examinations. Which Operators are entitled to do so is set out in separate documents. These guidelines are designed to assist operators entitled to authorise CT examinations in decision making when authorising referrals.

Examination requests meeting the criteria listed in this protocol may be authorised by these operators. All examinations authorised by an operator under this protocol will be conducted in accordance with the standard examination protocol indicated for the clinical information and referral source.

Examination requests not meeting the criteria listed must be passed to a Practitioner for individual justification. If considered justified, the practitioner will indicate the examination protocol to be followed by the Operator.

Practitioners

These guidelines are designed to assist the practitioner in decision making when justifying referrals.

Examination requests meeting the criteria listed in this protocol may be authorised by entitled operators. The Clinical Director for Imaging acts as Practitioner for all examinations authorised under this protocol; which will be conducted accordance with the standard examination protocol indicated for the clinical information and referral source.

Operators will pass any examination request which cannot be authorised by an operator, due to clinical, or administrative considerations, to a practitioner for individual justification. If considered justified, the practitioner will indicate the examination protocol to be followed by the operator. The individual practitioner making the justification decision is the practitioner for that examination.

All Examinations

All examinations requests will be conducted in accordance with the employer's procedures to meet the requirements of Schedule 2 of the Ionising Radiation (Medical Exposures) Regulations and those covering other matters relevant to the conduct of examinations involving the exposure of patients to ionising radiation.

Implementation, Training and Dissemination

All operators and practitioners undertaking CT examinations will be trained on these protocols and must follow them in their day-to-day work.

The protocols will be available to Operators and Practitioners:

- On QPulse
- On the Radiology Shared Drive (Until QPulse is available at all UHDB sites)
- As printed copies in relevant clinical areas (managed by the Superintendent Radiographer for the area)

All referrers will be notified of these guidelines which will be available to them:

- On the Trust intranet site (Net-i)
- On the Trust internet site

Trust staff have access to the RCR iRefer website via Net-i

Monitoring Compliance

Audit of compliance with each employer's procedure forms part of the Imaging Quality Management Audit programme.

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Abdomen and Pelvis - 65s + IV Contrast	
E-Vetting and CRIS Code	Abdomen/Pelvis 65s +Contrast CABPEC
Clinical indications allowing justification / Authorisation	• Ovarian Cancer - Follow up • Bile duct cancer • Uterine/Cervix Cancer • Acute Abdomen E.g. Appendicitis, Perforated bowel, Ischemic bowel, Sepsis? Cause *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate. • Previous contrast allergy.
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	745mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working. • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table. • Select correct patient and protocol on the CT scanner.
Room Used	All CT scan rooms
Patient Position	Supine / Feet First / Arms raised above head (If possible) If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. 65s Portal Venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100ml at 3ml/s Oral prep will be given as part of this examination, either water, KleanPrep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.
Scan delay	1. N/A 2. N/A 3. Smart Prep with 45 second delay

Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. 65s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential

	treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be outsourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging Procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed, and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Abdomen and Pelvis - No IV	
E-Vetting and CRIS Code	Abdomen and Pelvis - No IV CABPE
Clinical indications allowing justification / Authorisation	• Acute and chronic kidney injury (renal failure) *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	745mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. Abdomen/Pelvis
IV and Oral Contrast	Oral prep will be given as part of this examination, either water, Klean Prep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Abdomen/Pelvis

	Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX

	incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Upper Abdomen - 65s + IV Contrast	
E-Vetting and CRIS Code	Upper Abdomen - 65s +Contrast CABDOC
Clinical indications allowing justification / Authorisation	Completion of staging for intrathoracic malignancy. *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	910mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head (If possible) If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen 2. Lateral Scout Abdomen 3. 65s Portal Venous Abdomen
IV and Oral Contrast	Omnipaque 300 – 100ml at 3ml/s Oral prep may be given as part of this examination, either water, Klean Prep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.
Scan delay	1. N/A 2. N/A 3. Smart Prep with 45 second delay
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20

	3. 65s Portal Venous Abdomen Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.

Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Pelvis – 70s + IV Contrast	
E-Vetting and CRIS Code	Pelvis 70s CPELVC
Clinical indications allowing justification / Authorisation	• Pelvis mass? • Pelvis mass of unknown aetiology *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to iliac crests, horizontal light to middle of body.
Scan Range	1. AP Scout Pelvis 2. Lateral Scout Pelvis 3. Pelvis 70s
IV and Oral Contrast	Omnipaque 300 100mls at 3ml/s Oral prep will be given as part of this examination, either water, Klean Prep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.
Scan delay	1. N/A 2. N/A 3. 70 second scan delay
Scan Parameters	1. AP Scout Pelvis kV – 120 mA – 20

	2. Lateral Scout Pelvis kV – 120 mA – 20 3. Pelvis 70s Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.

Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Pelvis - No IV Contrast + Water	
E-Vetting and CRIS Code	Pelvis + Water – No IV CPELV
Clinical indications allowing justification / Authorisation	• Suspected benign Ovarian Dermoid on Ultrasound • Pelvis mass? • Pelvis mass of unknown aetiology *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to iliac crests, horizontal light to middle of body.
Scan Range	1. AP Scout Pelvis 2. Lateral Scout Pelvis 3. Pelvis
IV and Oral Contrast	Oral prep will be given as part of this examination, either water, Klean Prep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Pelvis kV – 120 mA – 20 2. Lateral Scout Pelvis kV – 120 mA – 20

	3. Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if

	a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Abdomen and Pelvis – 3 Phase – GI Bleed	
E-Vetting and CRIS Code	Abdomen/Pelvis – 3 Phase – GI Bleed CABPE + CABPEC
Clinical indications allowing justification / Authorisation	• ? GI Bleed *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head (If possible) If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. Unenhanced Abdomen/Pelvis 4. Arterial Abdomen/Pelvis using Smart Prep 5. 65s Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s
Scan delay	1. N/A 2. N/A 3. Smart Prep for the arterial abdomen/pelvis with minimum scan delay. 4. Scan delay of 45 seconds post arterial imaging to ensure portal venous phase scan of abdomen and pelvis.
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20

	3. Unenhanced Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 38 4. Arterial Abdomen/Pelvis using Smart Prep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234 5. 65s Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm (For all scan ranges) *MAR reformats may be created additionally if required*

Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Abdomen and Pelvis – Bastion Protocol	
E-Vetting and CRIS Code	Abdomen/Pelvis with Bastion Protocol CABPEC
Clinical indications allowing justification / Authorisation	• Significant trauma to the abdomen and pelvis *Other clinical indications in line with i-refer must be individually justified by a practitioner.*

Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head (If possible) If a patient struggles to raise arms above their head, it is preferable

	to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis/Femur 2. Lateral Scout Abdomen/Pelvis/Femur 3. Single run Abdomen/Pelvis with 65 sec delay
IV and Oral Contrast	150mls Split Bolus - Omnipaque 300 IV contrast 1. 65 ml/s 2mls/sec 2. 85 ml/s at 3.5 ml/s
Scan delay	1. N/A 2. N/A 3.65 seconds timed delay
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Single run Abdomen/Pelvis & proximal femora Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 100 – Max 560) Noise Index – 33.234

Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial – Bone Plus / ASIR 50 / 1.25mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Adrenals - No IV contrast	
E-Vetting and CRIS Code	Adrenals – No IV CABDO
Clinical indications allowing justification / Authorisation	• ? Adrenal mass *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	4. AP Scout Abdomen 1. Lateral Scout Abdomen 2. Abdomen (Above diaphragm to lower costal margin)
IV and Oral Contrast	N/A for all scan ranges
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Abdomen kV – 120 mA – 20 2. Lateral Scout Abdomen kV – 120 mA – 20 3. Abdomen Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm

	kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5m *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance –

	June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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CT Peritoneogram	
E-Vetting and CRIS Code	CT Peritoneogram CPERI
Clinical indications allowing justification / Authorisation	• Continuous Ambulatory Peritoneal Dialysis (CAPD) • Swelling of scrotum • Swelling around catheter site *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	745mGycm
Pre-procedural/ Preparation	• 100mls Omnipaque 300 to be given to nursing staff from renal unit to be administered with 1500mls of dialysis fluid into the abdominal cavity via catheter. • Patient to remain mobile for 1 hour then to attend CT department • PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head (If possible) If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. Abdomen/Pelvis (For males please scan below the scrotum)
IV and Oral Contrast	100mls Omnipaque 300 to be given to nursing staff from renal unit to be administered with 1500mls of dialysis fluid into the abdominal cavity via catheter.
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120

	mA – 20 3. Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.

Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Pneumocolon	
E-Vetting and CRIS Code	Pneumocolon CVCOY
Clinical indications allowing justification / Authorisation	• Anaemia • Change in bowel habit • PR bleed • Strong family history of Ca bowel • Patients with significant cardiovascular or respiratory comorbidity, which would compromise the safety of colonoscopy • Patient considered too frail to undergo bowel preparation for colonoscopy • Patient with history of incomplete colonoscopy *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.

Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	950mGycm
Local Diagnostic Reference Level	Full Dose: 570mGycm
Pre-procedural/ Preparation	• Patient to have followed the 2 day diet restriction and bowel preparation routine of 2x50ml doses of Gastrografin over 2 days. • PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	CT04 and CT03 preferable for privacy, but possible on all scanners.
Patient Position	1. Supine / Feet First / Arms raised above head (If possible) 2. For the second scan range - Prone or Decubitus / Feet First / Arms raised above head (If possible) If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.

Scan Range	1. AP Scout Abdomen/ Pelvis (Supine) 2. Lateral Scout Abdomen/Pelvis (supine) 3. Supine Abdomen/Pelvis with Smart Prep 4. AP Scout Abdomen/ Pelvis (Prone or decubitus) 5. Lateral Scout Abdomen/Pelvis (Prone or decubitus) 6. ***Low Dose*** Prone or decubitus scan (Dependent on the images required) above large bowel to below symphysis pubis.
IV and Oral Contrast	Omnipaque 300 – 100ml at 3ml/s Gastrografin prep and low residue diet followed 2 days before the examination Buscopan to be given to the patient following safety checks
Scan delay	1. N/A 2. N/A 3. Smart Prep with 45 second delay 4. N/A 5. N/A 6. N/A
Scan Parameters	1. AP Scout Abdomen/Pelvis (Supine) kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis (Supine) kV – 120 mA – 20 3. Supine Abdomen/pelvis with SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 80 – Max 560) Noise Index – 33.234

	4. AP Scout Abdomen/Pelvis (Prone or Decubitus) kV – 120 mA – 20 5. Lateral Scout Abdomen/Pelvis (Prone or Decubitus) kV – 120 mA – 20 6. ***Low Dose*** Prone or Decubitus Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 2.5mm kV – 100 Smart mA Used (Min 30 – Max 300) Noise Index – 53
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial (Low dose scan) - Standard filter / ASIR 70 / 1.25mm Axial (Low dose scan) - Standard filter / ASIR 70 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and

	appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Pneumocolon – Failed Colon (Same Day)	
E-Vetting and CRIS Code	Pneumocolon – Failed Colon (Same Day) CVCOY
Clinical indications allowing justification / Authorisation	• Failed colonoscopy on the same day *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	950mGycm
Local Diagnostic Reference Level	570mGycm
Pre-procedural/ Preparation	• Patient to have drank 100mls of Gastrografin 3 hours before the CT examination • PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	CT04 and CT03 preferable for privacy, but possible on all scanners.
Patient Position	1. Supine / Feet First / Arms raised above head (If possible) 2. For the second scan range - Prone or Decubitus / Feet First / Arms raised above head (If possible) If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/ Pelvis (Supine) 2. Lateral Scout Abdomen/Pelvis (supine) 3. Supine Abdomen/Pelvis with Smart Prep 4. AP Scout Abdomen/ Pelvis (Prone or decubitus) 5. Lateral Scout Abdomen/Pelvis (Prone or decubitus) 6. ***Low Dose*** Prone or decubitus scan (Dependent on the images required) above large bowel to below symphysis pubis.
IV and Oral Contrast	Omnipaque 300 – 100ml at 3ml/s Gastrografin prep 3 hours before the examination Buscopan to be given to the patient following safety checks
Scan delay	1. N/A 2. N/A 3. Smart Prep with 45 second delay 4. N/A

	5. N/A 6. N/A
Scan Parameters	1. AP Scout Abdomen/Pelvis (Supine) kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis (Supine) kV – 120 mA – 20 3. Supine Abdomen/pelvis with SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 80 – Max 560) Noise Index – 33.234 4. AP Scout Abdomen/Pelvis (Prone or Decubitus) kV – 120 mA – 20 5. Lateral Scout Abdomen/Pelvis (Prone or Decubitus) kV – 120 mA – 20 6. ***Low Dose*** Prone or Decubitus Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical

	Slice Thickness – 2.5mm kV – 100 Smart mA Used (Min 30 – Max 300) Noise Index – 53
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial (Low dose scan) - Standard filter / ASIR 70 / 1.25mm Axial (Low dose scan) - Standard filter / ASIR 70 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX

	incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Pneumocolon – Bowel Cancer Screening Programme (BCSP)	
E-Vetting and CRIS Code	Pneumocolon – Bowel Cancer Screening Programme (BSCP) CVCOY
Clinical indications allowing justification / Authorisation	• Bowel Cancer Screening programme referral *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	950mGycm
Pre-procedural/ Preparation	• Patient to have followed the 2 day diet restriction and bowel preparation routine of 2x50ml doses of Gastrografin over 4 hours. • PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	CT04 and CT03 preferable for privacy, but possible on all scanners.
Patient Position	1. Supine / Feet First / Arms raised above head (If possible) 2. For the second scan range - Prone or Decubitus / Feet First / Arms raised above head (If possible) If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/ Pelvis (Supine) 2. Lateral Scout Abdomen/Pelvis (supine) 3. ***Low Dose*** Supine Abdomen/Pelvis 4. AP Scout Abdomen/ Pelvis (Prone or decubitus) 5. Lateral Scout Abdomen/Pelvis (Prone or decubitus) 6. ***Low Dose*** Prone or decubitus scan (Dependent on the images required) above large bowel to below symphysis pubis.
IV and Oral Contrast	Gastrografin prep and low residue diet followed 2 days before the examination Buscopan to be given to the patient following safety checks
Scan delay	N/A for all scan ranges

Scan Parameters	1. AP Scout Abdomen/Pelvis (Supine) kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis (Supine) kV – 120 mA – 20 3. ***Low Dose*** Supine scan Rotation Speed – 0.5s Type – Helical Slice Thickness – 2.5mm kV – 100 Smart mA Used (Min 30 – Max 300) Noise Index – 53 4. AP Scout Abdomen/Pelvis (Prone or Decubitus) kV – 120 mA – 20 5. Lateral Scout Abdomen/Pelvis (Prone or Decubitus) kV – 120 mA – 20 6. ***Low Dose*** Prone or Decubitus Rotation Speed – 0.5s Type – Helical Slice Thickness – 2.5mm kV – 100 Smart mA Used (Min 30 – Max 300)

	Noise Index – 53
Reformats	Axial - Standard filter / ASIR 70 / 1.25mm Axial - Standard filter / ASIR 70 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Renal Stone/KUB	
E-Vetting and CRIS Code	Renal Stones/KUB CURIT
Clinical indications allowing justification / Authorisation	• Renal colic • Suspected ureteric stone • ? renal calculi • Haematuria *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	290mGycm
Local Diagnostic Reference Level	300mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. ***Low Dose*** scan above the kidneys to below the symphysis pubis.
IV and Oral Contrast	Water Orally 30 minutes before or as specified by the radiologist
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis

	kV – 120 mA – 20 3. ***Low Dose*** scan above the kidneys to below the symphysis pubis. Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 350) Noise Index – 45
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.

Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

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Low dose Pelvis – Stone Passage	
E-Vetting and CRIS Code	Low dose Pelvis – Stone Passage CURIT
Clinical indications allowing justification / Authorisation	• Assessment of stone location and passage through the urinary tract *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible
Centering point	Vertical light to iliac crest, horizontal light to middle of body.
Scan Range	1. AP Scout Pelvis 2. Lateral Scout Pelvis 3. ***Low Dose*** pelvis
IV and Oral Contrast	Water Orally 30 minutes before or as specified by the radiologist
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. ***Low Dose*** pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm

	kV – 120 Smart mA Used (Min 50 – Max 350) Noise Index – 45
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance –

	June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Urology 2 phase – Renal Stones + 80s +IV Contrast	
E-Vetting and CRIS Code	Urology 2 phase (renal stones +80s) CURIT + CABPEC
Clinical indications allowing justification / Authorisation	*Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	1150mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. ***Low Dose*** scan above the kidneys to below the symphysis pubis. 4. 80s Portal Venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s Water Orally 30 minutes before or as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. N/A 4. 80 second delay

Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. ***Low Dose*** scan above the kidneys to below the symphysis pubis. Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 350) Noise Index – 45 4. 80s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm

Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Urogram - 3 Phase (Renal stones/80s/Delayed)	
E-Vetting and CRIS Code	Urogram - 3 Phase (Renal stones/80s/Delayed) CURIT + CABPEC + CURITC
Clinical indications allowing justification / Authorisation	• Haematuria Investigation • Visible Haematuria **Aged > 50** • Persistent Non-visible Haematuria +/- Risk Factors **Aged > 50** • Pelvis Injury with urethral bleeding • Renal trauma: blunt or penetrating injury with haematuria *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.

Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	1150mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. ***Low Dose*** scan above the kidneys to below the symphysis pubis. 4. 80s Portal Venous Abdomen/Pelvis 5. 15 min delay Abdomen/Pelvis (Full dose)
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s Water Orally 30 minutes before or as specified by the radiologist
Scan delay	1. N/A 2. N/A

	3. N/A 4. 80 second delay 5. 15 minute delay
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. ***Low Dose*** scan above the kidneys to below the symphysis pubis. Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 350) Noise Index – 45 4. 80s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234 5. 15 minute delay Abdomen/Pelvis (Full Dose) Rotation Speed – 0.5s

	Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX

	incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Urogram + Arterial Chest + IV Contrast	
E-Vetting and CRIS Code	Urogram + Arterial Chest CURIT + CCHAPC + CURITC
Clinical indications allowing justification / Authorisation	• Known Transitional Cell Carcinoma (TCC) Bladder >40 years old, High grade • Known Transitional Cell Carcinoma (TCC) Bladder Upper Tract Surveillance *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.

Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen/Pelvis 2. Lateral Scout Chest/Abdomen/Pelvis 3. Arterial Chest with SmartPrep 4. 80s Portal Venous Abdomen/Pelvis 5. 15 min delay Abdomen/Pelvis (Full dose)
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s Water Orally 30 minutes before or as specified by the radiologist
Scan delay	1. N/A

	2. N/A 3. SmartPrep – Auto minimum delay 4. 45 second delay post arterial imaging 5. 15 minute delay
Scan Parameters	1. AP Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 3. Arterial Chest with Smart Prep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 36 4. 80s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234 5. 15 minute delay Abdomen/Pelvis (Full Dose)

	Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 1.25mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local

	investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Split Bolus Urogram + IV Contrast	
E-Vetting and CRIS Code	Split Bolus Urogram CURIT + CABPEC
Clinical indications allowing justification / Authorisation	• Known Transitional Cell Carcinoma (TCC) / Bladder Staging *Aged < 40* *Discuss with radiologist* *Consider MR* • Haematuria Investigation Visible Haematuria **Aged < 50** Persistent Non-visible Haematuria +/- Risk Factors **Aged < 50** • Renal trauma: blunt or penetrating injury with haematuria *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.

Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	1150mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. ***Low Dose*** scan above the kidneys to below the symphysis pubis. 4. 15 minute delay - 80s Portal Venous Abdomen/Pelvis

IV and Oral Contrast	Omnipaque 300 150mls total • 50mls IV contrast injection by hand and wait 15 minutes • 80s Abdomen/Pelvis with 100mls at 3ml/s IV contrast injection Water Orally 30 minutes before or as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. N/A 4. 15 minute delay and then 80 second delay for the scan
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. ***Low Dose*** scan above the kidneys to below the symphysis pubis. Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 350) Noise Index – 45 ***50mls hand injection and 15 minute delay*** 4. 80s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s

	Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.

Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Split Bolus Urogram + Arterial Chest + IV Contrast	
E-Vetting and CRIS Code	Split Bolus Urogram + Arterial Chest CURIT + CCHAPC
Clinical indications allowing justification / Authorisation	• Known Transitional Cell Carcinoma (TCC)/Bladder Staging (High Grade Tumour), **Aged < 40** *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	1150mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen/Pelvis 2. Lateral Scout Chest/Abdomen/Pelvis 3. ***Low Dose*** scan above the kidneys to below the symphysis pubis Then ***(50mls contrast hand injected)*** 4. 15 minute delay – Arterial Chest 5. 80s Portal Venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 150mls. 50mls Hand injected, then 100ml at 3ml/s 15 minutes later Water Orally 30 minutes before or as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. N/A ***(50mls contrast hand injected)*** 4. SmartPrep – Auto minimum delay 5. 45 second delay post arterial imaging
Scan Parameters	1. AP Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen/Pelvis

	kV – 120 mA – 20 3. ***Low Dose*** scan above the kidneys to below the symphysis pubis. Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 350) Noise Index – 45 ***(50mls contrast hand injected and 15 minute wait)*** 4. Arterial chest with SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 36 5. 80s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234

Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 1.25mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Renal Lesion Characterisation	
E-Vetting and CRIS Code	Renal Lesions Characterisation CABDO + CABPEC
Clinical indications allowing justification / Authorisation	• Renal lesion characterisation *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. Kidneys only 4. 80s Portal Venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100mls 3ml/s Water Orally 30 minutes before or as specified by the radiologist

Scan delay	1. N/A 2. N/A 3. N/A 4. 80 second delay
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Kidneys only Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234 4. 80s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234

Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Abdomen and Pelvis – 2 Phase – Pancreas	
E-Vetting and CRIS Code	Abdomen/Pelvis – 2 Phase - Pancreas CABDOC + CABPEC
Clinical indications allowing justification / Authorisation	• Pancreas staging • Pancreatic mass • Weight loss/ Back pain: ?pancreas • Pancreatitis • Suspected Chronic Pancreatitis • Jaundice (Including Follow ups) *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.

Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head (if possible). If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Ranges	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. Arterial Upper Abdomen/Pancreas using SmartPrep and 10 second delay 4. 65s portal venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Water orally 30 minutes before or as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. Arterial phase scan includes Smart Prep with 10 second

	delay. 4. Scan delay of 45 seconds post arterial imaging to ensure portal venous phase scan.
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Arterial Upper Abdomen/Pancreas Using SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 100 – Max 560) Noise Index – 33.234 4. 65s portal venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 100 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*

Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Abdomen and Pelvis – 3 Phase Liver	
E-Vetting and CRIS Code	Abdomen/Pelvis – 3 Phase Liver CABDO + CABPEC
Clinical indications allowing justification / Authorisation	• Liver cancer (MRI more appropriate but CT may be used if MRI contraindicated) *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head (if possible). If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Ranges	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. Unenhanced Liver 4. Arterial Upper Abdomen using SmartPrep 5. 3 minute delay liver
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Water orally 30 minutes before or as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. N/A 4. Smart Prep with minimum auto delay 5. 3 Minute delay
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20

	2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Unenhanced Liver Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 38 4. Arterial Upper Abdomen using SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234 5. 3 minute delay liver Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm

	Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Abdomen and Pelvis – 3 Phase – Post TACE	
E-Vetting and CRIS Code	Abdomen/Pelvis – 3 Phase – Post TACE CABDO + CABPEC
Clinical indications allowing justification / Authorisation	• Post Transarterial chemoembolization (TACE) *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head (if possible). If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Ranges	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. Unenhanced Liver 4. Arterial Upper Abdomen using SmartPrep 5. 65s portal venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Water orally 30 minutes before or as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. N/A 4. Smart Prep with minimum auto delay 5. Scan delay of 45 seconds post arterial imaging
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20

	2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Unenhanced Liver Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 38 4. Arterial Upper Abdomen using SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234 5. 65s portal venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm

	Axial – Standard filter / ASIR 50 / 5mm
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Chest/Abdomen/Pelvis + IV Contrast	
E-Vetting and CRIS Code	Chest/Abdomen/Pelvis + IV Contrast CCHAPC
Clinical indications allowing justification / Authorisation	• Mesothelioma follow up • Breast Cancer • Myeloma • Melanoma • Lymphoma • Iron Deficiency Anaemia • Abdominal pain • Mass (non-specific) • Ascites • Weight loss • Appetite loss • Ovarian Cancer (1st Stage or Follow up with known or suspected Chest disease) • Primary Peritoneal Cancer Staging • Bowel cancer staging • Post PE or DVT (The NICE guidelines suggest CXR and CT Abdo/Pelvis in patients over the age of 40 years) • Uterine/Cervix Cancer (High Grade, Aggressive disease) • Suspected abdominal or thoracic injuries E.g. Penetration injury, stabbing *Other clinical indications in line with i-refer must be individually justified by a practitioner.*

Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	530mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms

Patient Position	Supine / Feet First / Arms raised above head if possible
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen/Pelvis 2. Lateral Scout Chest/Abdomen/Pelvis 3. Arterial chest with SmartPrep 4. 65s Portal Venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s Oral prep will be given as part of this examination, either water, Klean Prep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.
Scan delay	1. N/A 2. N/A 3. SmartPrep – Auto minimum delay 4. 45 second delay post arterial imaging
Scan Parameters	1. AP Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 3. Arterial chest with SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120

	Smart mA Used (Min 50 – Max 450) Noise Index – 36 4. 65s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 1.25mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.

Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Chest/Abdomen/Pelvis + No IV Contrast	
E-Vetting and CRIS Code	Chest/Abdomen/Pelvis + No IV Contrast CCHAP
Clinical indications allowing justification / Authorisation	Indications are as per CCHAPC when contrast administration is contraindicated e.g. acute or chronic kidney injury. *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	660mGycm
Local Diagnostic Reference Level	770mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen/Pelvis 2. Lateral Scout Chest/Abdomen/Pelvis 3. Chest/Abdomen/Pelvis one run
IV and Oral Contrast	Oral prep will be given as part of this examination, either water, Klean Prep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.
Scan delay	N/A for all scan ranges

Scan Parameters	1. AP Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 3. Chest/Abdomen/Pelvis one run Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and

	appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

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Arterial Chest and Upper Abdomen + 65s Abdomen/Pelvis + IV Contrast + Water (Renal staging)	
E-Vetting and CRIS Code	Arterial chest/upper Abdo + 65s Abdo/pelvis (Renal Staging) CCHAPC
Clinical indications allowing justification / Authorisation	• Renal Tumour Staging (RCC) - 1st stage • RCC - Follow up/Surveillance • Bowel cancer staging *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	950mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen/Pelvis 2. Lateral Scout Chest/Abdomen/Pelvis 3. Arterial chest and upper abdomen with SmartPrep 4. 65s Portal Venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s Water Orally 30 minutes before or as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. SmartPrep – Auto minimum delay 4. 45 second delay post arterial imaging

Scan Parameters	1. AP Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 3. Arterial chest and upper abdomen with SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 36 4. 65s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 1.25mm *MAR reformats may be created additionally if required*

Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Chest/Abdomen/Pelvis - Oesophagus/Gastric Staging	
E-Vetting and CRIS Code	Chest/Abdomen/Pelvis - Oesophagus/Gastric Staging CCHAPC
Clinical indications allowing justification / Authorisation	• Oesophageal cancer staging • Stomach cancer staging *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	660mGycm
Local Diagnostic Reference Level	770mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Carbex given to the patient • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen/Pelvis 2. Lateral Scout Chest/Abdomen/Pelvis 3. Arterial chest with SmartPrep 4. 65s Portal Venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s 2 sachets of CARBEX immediately before the scan Water Orally 30 minutes before or as specified by the radiologist

Scan delay	1. N/A 2. N/A 3. SmartPrep – Auto minimum delay 4. 45 second delay post arterial imaging
Scan Parameters	1. AP Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 3. Arterial chest with SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 36 4. 65s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33

Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 1.25mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Single Phase Chest/Abdomen/Pelvis + IV Contrast	
E-Vetting and CRIS Code	Single Phase Chest/Abdomen/Pelvis + IV Contrast CCHAPC
Clinical indications allowing justification / Authorisation	• Lymphoma • Ovarian cancer • Colorectal cancer • Breast cancer *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.

Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	660mGycm
Local Diagnostic Reference Level	770mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen/Pelvis 2. Lateral Scout Chest/Abdomen/Pelvis 3. Single run Chest/Abdomen/Pelvis using Smart prep

IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s Oral prep will be given as part of this examination, either water, Klean Prep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.
Scan delay	1. N/A 2. N/A 3. SmartPrep with a 40s delay
Scan Parameters	1. AP Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 3. Single run Chest/Abdomen/Pelvis using Smart prep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 480) Noise Index – 34.89
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*

Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Trauma Chest/Abdomen/Pelvis Bastion Protocol + IV Contrast	
E-Vetting and CRIS Code	Trauma Chest/Abdo/Pelvis with Bastion Protocol CCHAPC
Clinical indications allowing justification / Authorisation	• Significant trauma to the chest/abdomen/pelvis *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	660mGycm
Local Diagnostic Reference Level	770mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen/Pelvis/Femur 2. Lateral Scout Chest/Abdomen/Pelvis/Femur 3. Single run Chest/Abdomen/Pelvis with 65 second delay
IV and Oral Contrast	150mls Split Bolus Omnipaque 300 1. 65 ml/s 2mls/sec 2. 85 ml/s at 3.5 ml/s

Scan delay	1. N/A 2. N/A 3. 65 second delay
Scan Parameters	1. AP Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 3. Single run Chest/Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 100 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 1.25mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the

	referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

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Neck/Chest/Abdomen/Pelvis + IV Contrast	
E-Vetting and CRIS Code	Neck/Chest/Abdomen/Pelvis + IV Contrast CCHAPC
Clinical indications allowing justification / Authorisation	• Staging of lymphoma and melanoma and follow up of certain cancers with known cervical lymphadenopathy. *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Face/Neck/Chest/Abdomen/Pelvis 2. Lateral Scout Face/Neck/Chest/Abdomen/Pelvis 3. Arterial Neck and Chest using SmartPrep (From skull base) 4. 65s Portal Venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s Oral prep will be given as part of this examination, either water, Klean Prep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.

Scan delay	1. N/A 2. N/A 3. SmartPrep – Auto minimum delay 4. 45 second delay post arterial imaging
Scan Parameters	1. AP Scout Face/Neck/Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Face/Neck/Chest/Abdomen/Pelvis kV – 120 mA – 20 3. Arterial Neck and Chest using SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 36 4. 65s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33

Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 1.25mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Face/Neck/Chest/Abdomen/Pelvis + IV Contrast	
E-Vetting and CRIS Code	Face/Neck/Chest/Abdomen/Pelvis + IV Contrast CCHAPC
Clinical indications allowing justification / Authorisation	*Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Face/Neck/Chest/Abdomen/Pelvis 2. Lateral Scout Face/Neck/Chest/Abdomen/Pelvis 3. Face and Neck scanned at 40 seconds (Above orbits to below clavicles) 4. Arterial Chest immediately 5. 65s Portal Venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s Oral prep will be given as part of this examination, either water, Klean Prep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.

Scan delay	1. N/A 2. N/A 3. SmartPrep – Auto minimum delay 4. 45 second delay post arterial imaging
Scan Parameters	1. AP Scout Face/Neck/Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Face/Neck/Chest/Abdomen/Pelvis kV – 120 mA – 20 3. Face and Neck (Above orbits to below clavicles) Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685 4. Arterial Chest Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 38 5. 65s Portal Venous Abdomen/Pelvis

	Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 1.25mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local

	investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Pre & Post Brain + Chest/Abdomen/Pelvis + IV Contrast	
E-Vetting and CRIS Code	Pre & Post Brain + Chest/Abdomen/Pelvis + IV Contrast CSKUH + CSKUHC + CCHAPC
Clinical indications allowing justification / Authorisation	• Known Malignancy with neurological symptoms • Myeloma *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	Brain (+/- Contrast): 790mGycm CAP: 660 mGycm
Local Diagnostic Reference Level	Brain (+/- Contrast): 680mGycm CAP: 7700 mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms to be moved according to which area of the body we are scanning If a patient struggles to raise arms above their head (for CAP), it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Brain Imaging – Vertical light to lower orbital margin, horizontal light to external auditory meatus Body Imaging - Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Non Contrast Brain 4. AP Scout Chest/Abdomen/Pelvis 5. Lateral Scout Chest/Abdomen/Pelvis 6. Arterial chest with SmartPrep 7. 65s Portal Venous Abdomen/Pelvis 8. AP Scout Head 9. Lateral Scout Head 10. Post Contrast Brain
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s Oral prep will be given as part of this examination, either water, Klean Prep® or Gastrografin®, as deemed necessary at justification by the practitioner. The requesting doctor authorises the administration of all adjuvant drugs when making the referral.

Scan delay	1. N/A 2. N/A 3. N/A 4. N/A 5. N/A 6. SmartPrep – Auto minimum delay 7. 45 second delay post arterial imaging 8. N/A 9. N/A 10. N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 10 2. Lateral Scout Head kV – 120 mA – 10 3. Non Contrast Brain Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 100 – Max 400) Noise Index – 7.65 4. AP Scout Chest/Abdomen/Pelvis kV – 120 mA – 20

	5. Lateral Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 6. Arterial chest with SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 36 7. 65s Portal Venous Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33 8. AP Scout Head kV – 120 mA – 10 9. Lateral Scout Head kV – 120 mA – 10 10. Post Contrast Brain

	Rotation Speed - 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 100 – Max 400) Noise Index – 7.65
Reformats	Axial – Standard filter / ASIR 40 / 5mm (for all ranges) Axial – Bone Plus / ASIR 40 / 0.625mm (for head scans) Sagittal – Standard / ASIR 50 / 3mm (body ranges) Coronal - Standard / ASIR 50 / 3mm (body ranges) *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX

	incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Chest Arterial + IV Contrast	
E-Vetting and CRIS Code	Chest + IV Arterial/30s CCHESC
Clinical indications allowing justification / Authorisation	• Completion of staging for known malignancy where CT chest has not already been performed *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	290mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Arterial Chest with SmartPrep
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s
Scan delay	1. N/A 2. N/A 3. SmartPrep – Auto minimum delay
Scan Parameters	1. AP Scout Chest kV – 120 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20

	3. Arterial Chest with Smart Prep Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 40
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.

Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Chest – No IV Contrast	
E-Vetting and CRIS Code	Chest No IV CCHES
Clinical indications allowing justification / Authorisation	• Lung nodule follow up • Investigation for lung cancer when CXR is normal • Staging for head and neck cancer *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	290mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Unenhanced chest
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Chest kV – 12 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20 3. Unenhanced Chest Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm

	kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – MIP Lung / ASIR 50 / 10mm Axial – Standard filter / ASIR 50 / 5mm Axial - Bone Plus / ASIR 50 / 0.625mm every 10mm Axial – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if

	a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Chest – Limited Range	
E-Vetting and CRIS Code	Chest – limited range No IV CCHES
Clinical indications allowing justification / Authorisation	• Nodule follow ups *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Unenhanced chest (Limited range as specified)
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Chest kV – 120 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20 3. Unenhanced Chest (Limited range as specified) Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm

	kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – MIP Lung / ASIR 50 / 10mm Axial – Standard filter / ASIR 50 / 5mm Axial - Bone Plus / ASIR 50 / 0.625mm every 10mm Axial – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if

	a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

HRCT1 – Conventional HR Chest	
E-Vetting and CRIS Code	HRCT1 – Conventional HR Chest CHRC
Clinical indications allowing justification / Authorisation	• Assessment of the lung tissue • ? Interstitial lung disease *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Unenhanced chest HRCT1
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Chest kV – 120 mA – 80 2. Lateral Scout Chest kV – 120 mA – 80 3. Unenhanced Chest HRCT1 Type – Axial Slice Thickness – 1.25mm on 10mm intervals kV – 120

	mA - Min 10 – Max 450) Noise Index – 40
Reformats	Axial – Standard filter / 1.25mm Axial - Bone Plus / 1.25mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

HRCT2 – Unenhanced spiral Chest with High Resolution Recons	
E-Vetting and CRIS Code	HRCT2 CHRC
Clinical indications allowing justification / Authorisation	• Interstitial lung disease assessment and follow up • Investigation of chronic cough • Investigation for atypical infection *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	290mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen 2. Lateral Scout Chest/Abdomen 3. Unenhanced chest
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Chest/Abdomen kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen kV – 120 mA – 20 3. Unenhanced Chest Rotation Speed – 0.5s Type – Helical

	Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – MIP Lung / ASIR 50 / 10mm Axial – Standard filter / ASIR 50 / 5mm Axial - Bone Plus / ASIR 50 / 0.625mm every 10mm Axial – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX

	incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

HRCT3 – Expiration	
E-Vetting and CRIS Code	HRCT3 – Expiration CHRC
Clinical indications allowing justification / Authorisation	• To assess for air-trapping *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Unenhanced chest ***on expiration***
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Chest kV – 120 mA – 80 2. Lateral Scout Chest kV – 120 mA – 80 3. Unenhanced Chest ***on expiration*** Type – Axial Slice Thickness – 1.25mm on 30mm intervals kV – 120 mA - Min 100 – Max 450

	Noise Index – 40
Reformats	Axial - Bone Plus / ASIR 50 / 1.25mm
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

HRCT4 – Prone	
E-Vetting and CRIS Code	HRCT4 – Prone CHRC
Clinical indications allowing justification / Authorisation	• To differentiate between interstitial disease and dependent lung changes *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	290mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Prone / Feet First / Arms raised. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Unenhanced chest ***Prone***
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Chest kV – 120 mA – 80 2. Lateral Scout Chest kV – 120 mA – 80 3. Unenhanced Chest ***Prone*** Type – Axial Slice Thickness – 1.25mm on 10mm intervals kV – 120 mA - Min 100 – Max 450

	Noise Index – 40
Reformats	Axial - Bone Plus / ASIR 50 / 1.25mm
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Staging Chest + IV Contrast	
E-Vetting and CRIS Code	Staging Chest (Chest/Abdo) CCABDC
Clinical indications allowing justification / Authorisation	• For Abnormal CXR • Where Radiologists CXR report or clinicians request states MDT discussion advising CT chest • Thymoma • FU CT Chest Imaging- Oncology/Surgery/Lung Cancer /Upper GI tract post chemotherapy/ radiotherapy • Completion of staging for known malignancy where CT chest has not already been performed • Renal Tumour (RCC) with No CT Chest done previously. *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.

Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	470mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen 2. Lateral Scout Chest/Abdomen 3. Arterial Chest with SmartPrep 4. 65s Portal Venous Abdomen
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s
Scan delay	1. N/A 2. N/A 3. SmartPrep – Auto minimum delay 4. 45 second delay post arterial imaging

Scan Parameters	1. AP Scout Chest/Abdomen kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen kV – 120 mA – 20 3. Arterial Chest with Smart Prep Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685 4. 65s Portal Venous Abdomen Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 80 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm AX - MIP Lung / ASIR 50 / 10mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*

Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Chest/Abdo - Omnipaque 300 Oral Prep	
E-Vetting and CRIS Code	Chest/Abdo - Omnipaque300 Oral Prep CCABDC
Clinical indications allowing justification / Authorisation	• Oesophageal leak *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	530mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen 2. Lateral Scout Chest/Abdomen 3. Arterial Chest with SmartPrep 4. 65s Portal Venous Abdomen
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s Oral prep - 10mls Omnipaque 300 diluted in 150mls water given 10-15 mins prior to scan
Scan delay	1. N/A 2. N/A 3. SmartPrep – Auto minimum delay 4. 45 second delay post arterial imaging
Scan Parameters	1. AP Scout Chest/Abdomen kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen

	kV – 120 mA – 20 3. Arterial Chest with Smart Prep Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685 4. 65s Portal Venous Abdomen Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 80 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm AX - MIP Lung / ASIR 50 / 10mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.

Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

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Staging Chest – No IV Contrast	
E-Vetting and CRIS Code	Chest and Abdomen (No IV) CCABD
Clinical indications allowing justification / Authorisation	• For Abnormal CXR • Where Radiologists CXR report or clinicians request states MDT discussion advising CT chest • Thymoma • FU CT Chest Imaging- Oncology/Surgery/Lung Cancer /Upper GI tract post chemotherapy/ radiotherapy • Completion of staging for known malignancy where CT chest has not already been performed *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	470mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen 2. Lateral Scout Chest/Abdomen 3. Unenhanced Chest 4. Unenhanced Abdomen
IV and Oral Contrast	N/A
Scan delay	1. N/A 2. N/A 3. N/A 4. N/A
Scan Parameters	1. AP Scout Chest/Abdomen kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen kV – 120 mA – 20

	1. Unenhanced Chest Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685 3. Unenhanced Abdomen Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 80 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm AX - MIP Lung / ASIR 50 / 10mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales.

	For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

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Pleura Chest +IV Contrast	
E-Vetting and CRIS Code	Pleura Chest (+IV @60s) CCHESC
Clinical indications allowing justification / Authorisation	• Mesothelioma • Pleura follow up • Assessment of the pleura *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	290mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Pleural chest with 60s delay
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s
Scan delay	1. N/A 2. N/A 3. 60 second delay
Scan Parameters	1. AP Scout Chest kV – 120 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20

	3. Pleural chest with 60s delay Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local

	investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Pleura Chest + Upper Abdomen + IV Contrast	
E-Vetting and CRIS Code	Pleura Chest + Upper abdomen (+IV @60s) CCABDC
Clinical indications allowing justification / Authorisation	• Mesothelioma • Pleura follow up • Assessment of the pleura *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	470mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Pleural chest and upper abdomen with 60s delay
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s
Scan delay	1. N/A 2. N/A 3. 60 second delay
Scan Parameters	1. AP Scout Chest kV – 120 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20

	3. Pleural chest and upper abdomen with 60s delay Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local

	investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Pulmonary Angio	
E-Vetting and CRIS Code	Pulmonary Angio CAPUG
Clinical indications allowing justification / Authorisation	• ? Pulmonary embolism *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	310mGycm
Local Diagnostic Reference Level	240mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Pulmonary Angio Chest with SmartPrep (ROI over Pulmonary Trunk)
IV and Oral Contrast	Omnipaque 300 – 40mls at 4ml/s Saline - 50mls 4ml/s
Scan delay	1. N/A 2. N/A 3. SmartPrep – ROI over Pulmonary Trunk – Auto minimum delay
Scan Parameters	1. AP Scout Chest kV – 120 mA – 20

	2. Lateral Scout Chest kV – 120 mA – 20 3. Pulmonary Angio Chest with SmartPrep (ROI over Pulmonary Trunk) Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 50 – Max 450) Noise Index – 45
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as

	appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
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Pulmonary Angio + Abdomen/Pelvis 65s	
E-Vetting and CRIS Code	Pulmonary Angio + Abdomen/Pelvis 65s CAPUG + CABPEC
Clinical indications allowing justification / Authorisation	• ? Pulmonary embolism AND ?abdominal pathology *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	CTPA: 240mGycm Abdomen & Pelvis: N/A
Local Diagnostic Reference Level	CTPA: 310mGycm Abdomen & Pelvis: 530mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest/Abdomen/Pelvis 2. Lateral Scout Chest/Abdomen/Pelvis 3. Pulmonary Angio Chest with SmartPrep (ROI over Pulmonary Trunk) 4. Portal Venous Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 300 – 100mls at 4ml/s
Scan delay	1. N/A 2. N/A 3. SmartPrep – ROI over Pulmonary Trunk – Auto minimum delay 4. 40 second delay post chest scan

Scan Parameters	1. AP Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Chest/Abdomen/Pelvis kV – 120 mA – 20 3. Pulmonary Angio Chest with SmartPrep (ROI over Pulmonary Trunk) Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 50 – Max 450) Noise Index – 45 4. Portal Venous Abdomen Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 38
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm

	MAR reformats may be created additionally if required
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Trauma Chest + IV Contrast	
E-Vetting and CRIS Code	Trauma Chest CCABDC
Clinical indications allowing justification / Authorisation	• Trauma to the chest • ? Flail segment • ? Haemothorax *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	290mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Arterial Chest with SmartPrep (extended to include all the ribs)
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s
Scan delay	1. N/A 2. N/A 3. SmartPrep – Auto minimum delay
Scan Parameters	1. AP Scout Chest kV – 120 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20 3. Arterial Chest with Smart Prep (to include off of the ribs) Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120

	Smart mA Used (Min 50 – Max 450) Noise Index – 40
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Neck + IV Contrast (E4)	
E-Vetting and CRIS Code	Neck + IV Contrast (E4) CNECKC
Clinical indications allowing justification / Authorisation	• Cancer of the mouth and or pharynx • Neck mass of unknown aetiology • Difficulty in swallowing *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to midline of the neck.
Scan Range	1. AP Scout Neck (Temporal Bones to just below clavicles) 2. Lateral Scout Neck (Temporal Bones to just below clavicles) 3. Neck scan with 100s delay
IV and Oral Contrast	Omnipaque 300 – 100mls at 1ml/s
Scan delay	1. N/A 2. N/A 3. 100s delay
Scan Parameters	1. AP Scout Neck kV – 120 mA – 20 2. Lateral Scout Neck kV – 120 mA – 20

	3. Neck scan with 100s delay Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 45
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 3.75mm Axial – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.

Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Neck + Chest + IV Contrast (E5)	
E-Vetting and CRIS Code	Neck + Chest + IV Contrast (E5) CNECKC
Clinical indications allowing justification / Authorisation	• Vocal Cord Palsy • Head and Neck malignancy *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to midline of the body.
Scan Range	1. AP Scout Neck and Chest (Base of skull to base of lungs) 2. Lateral Scout Neck and Chest (Base of skull to base of lungs) 3. Neck (Temporal Bones to just below Clavicles) with 100s delay 4. Chest
IV and Oral Contrast	Omnipaque 300 – 100mls at 1ml/s
Scan delay	1. N/A 2. N/A 3. 100s delay 4. N/A
Scan Parameters	1. AP Scout Neck kV – 120 mA – 20 2. Lateral Scout Neck kV – 120

	mA – 20 3. Neck scan with 100s delay Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 45 4. Chest Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm (Both Neck and Chest) Sagittal – Standard filter/ ASIR 50 / 3mm (Both Neck and Chest) Axial – Standard filter / ASIR 50 / 3.75mm Axial – Standard filter / ASIR 50 / 5mm Axial – Bone Plus / ASIR 50 / 1.25mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer.

	Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

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Neck + NO IV Contrast	
E-Vetting and CRIS Code	Neck + NO IV Contrast CNECK
Clinical indications allowing justification / Authorisation	• Neck mass of unknown aetiology *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to midline of the neck.
Scan Range	1. AP Scout Neck (Temporal Bones to just below clavicles) 2. Lateral Scout Neck (Temporal Bones to just below clavicles) 3. Neck scan
IV and Oral Contrast	N/A
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Neck kV – 120 mA – 20 2. Lateral Scout Neck kV – 120 mA – 20 3. Neck scan Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450)

	Noise Index – 45
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 3.75mm Axial – Bone Plus / ASIR 50 / 0.625mm
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Thyroid (E6)	
E-Vetting and CRIS Code	Thyroid (E6) CNECKC
Clinical indications allowing justification / Authorisation	• Goitre? *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to midline of the neck.
Scan Range	1. AP Scout Neck (Temporal Bones to Aortic Arch) 2. Lateral Scout Neck (Temporal Bones to Aortic Arch) 3. Neck scan (Hyoid to Aortic Arch) with smartPrep
IV and Oral Contrast	Omnipaque 300 – 100mls at 4ml/s
Scan delay	1. N/A 2. N/A 3. SmartPrep with minimum delay
Scan Parameters	1. AP Scout Neck kV – 120 mA – 20 2. Lateral Scout Neck kV – 120 mA – 20

	3. Neck scan with 100s delay Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 45
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 3.75mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local

	investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Triple Phase Parathyroid	
E-Vetting and CRIS Code	Triple Phase Parathyroid CNECK + CNECKC
Clinical indications allowing justification / Authorisation	• *Assessment of the parathyroid and neck* *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms by side
Centering point	Vertical light to sternal notch, horizontal light to midline of the body.
Scan Range	1. AP Scout Neck and Chest (Base of skull to base of lungs) 2. Lateral Scout Neck and Chest (Base of skull to base of lungs) 3. Pre Contrast Hard palate to carina 4. Hard palate to carina with SmartPrep in the descending aorta 5. Hard palate to carina with a 30s delay.
IV and Oral Contrast	Omnipaque 300 – 100mls at 4ml/s
Scan delay	1. N/A 2. N/A 3. N/A 4. SmartPrep with minimum delay 5. 30s
Scan Parameters	1. AP Scout Neck and Chest kV – 120 mA – 20

	2. Lateral Scout Neck and Chest kV – 120 mA – 20 3. Pre Contrast Hard palate to carina Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 45 4. Hard palate to carina with SmartPrep Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685 5. Hard palate to carina 30s delay Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 56.5685
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm (All Ranges) Sagittal – Standard filter/ ASIR 50 / 3mm (All Ranges)

	MAR reformats may be created additionally if required
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Carotid Angiogram	
E-Vetting and CRIS Code	Carotid Angiogram CACDB
Clinical indications allowing justification / Authorisation	• Assessment of Carotid Vessels • ? Stenosis *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Neck (Mid brain to just below aortic arch) 2. Lateral Scout Neck (Mid brain to just below aortic arch) 3. Carotid angiogram with SmartPrep (ROI over descending aorta)
IV and Oral Contrast	**Royal Derby Hospital**
	Omnipaque 350 – 80ml at 4ml/s Saline 20mls at 4ml/s
	Queens Hospital Burton
	Omnipaque 300 – 100mls at 4ml/s
Scan delay	1. N/A 2. N/A 3. SmartPrep – ROI over descending aorta – Auto minimum delay
Scan Parameters	1. AP Scout Neck kV – 120 mA – 20

	2. Lateral Scout Neck kV – 120 mA – 20 3. Carotid angiogram with SmartPrep Rotation Speed – 0.4s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 35
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 3.75mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar

	or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Brain + NO IV Contrast (B1)	
E-Vetting and CRIS Code	Brain + NO IV Contrast (B1) CSKUH
Clinical indications allowing justification / Authorisation	• Suspected Stroke • Follow up Stroke, (24 hours post thrombolysis), Haematoma etc. • Suspected TIA • Trauma - include C. Spine if requested and spinal injury suspected • Sudden onset of Headaches • Chronic headaches / Migraine • Suspected cerebral haemorrhage • Investigation of Hydrocephalus • Memory problems / dementia / Alzheimer's • Comment on Medial temporal lobe structures including parahippocampal gyrus, entorhinal cortex, choroid fissure, temporal horns of lateral ventricles, sulci, gyri, white matter, Ischaemic load *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.

Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	790mGycm
Local Diagnostic Reference Level	Standard: 680mGycm Fast: 810mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin tilted down / Arms by side
Centering point	Vertical light to lower orbital margin, horizontal light to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Brain (Vertex to base of skull)
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 10

	2. Lateral Scout Head kV – 120 mA – 10 3. Brain Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 100 – Max 400) Noise Index – 7.65
Reformats	Axial – Standard filter / ASIR 40 / 5mm (Reconstructed manually to the tuberculum sellae-occipital protuberance line TS-OP) Axial – Bone Plus / ASIR 40 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.

Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty/RPS for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-refer
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Brain + IV Contrast (B2)	
E-Vetting and CRIS Code	Brain + IV Contrast (B2) CSKUHC
Clinical indications allowing justification / Authorisation	• Known primary, suspicion of metastases. No clinical suspicion of haemorrhage, i.e., no sudden neurological deterioration • Follow up Cerebral abscess to assess response to treatment • Suspected Space Occupying Lesion (SOL) *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergic reaction to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Very Low Risk 1 in 100,000 – 1 in 10,000
National Diagnostic Reference Level	790mGycm
Local Diagnostic Reference Level	680mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Appropriate cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin tilted down / Arms by side
Centering point	Vertical light to lower orbital margin, horizontal light to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Brain with contrast (Vertex to base of skull)
IV and Oral Contrast	Omnipaque 350 50mls by hand injection
Scan delay	N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 10 2. Lateral Scout Head kV – 120 mA – 10

	3. Brain Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 100 – Max 400) Noise Index – 7.65
Reformats	Axial – Standard filter / ASIR 40 / 5mm Axial – Bone Plus / ASIR 40 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if

	a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Brain Pre and Post + IV Contrast (B3)	
E-Vetting and CRIS Code	Brain Pre and Post + IV Contrast (B3) CSKUH + CSKUHC
Clinical indications allowing justification / Authorisation	• Suspected Space Occupying Lesion (SOL) • Known Tumour, suspicion of recurrence. • Suspected Abscess *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergic reaction to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Appropriate cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin tilted down / Arms by side
Centering point	Vertical light to lower orbital margin, horizontal light to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Brain 4. Brain with contrast
IV and Oral Contrast	Omnipaque 350 50mls by hand injection
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Head kV – 120 mA – 10 2. Lateral Scout Head kV – 120 mA – 10 3. Brain Rotation Speed – 1.0s Type – Helical

	Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 100 – Max 400) Noise Index – 7.65 4. Brain with contrast Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 100 – Max 400) Noise Index – 7.65
Reformats	Axial – Standard filter / ASIR 40 / 5mm Axial – Bone Plus / ASIR 40 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.

Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Cerebral Angiogram – Circle of Willis (B4)	
E-Vetting and CRIS Code	Cerebral Angiogram – Circle of Willis (B4) CAICN
Clinical indications allowing justification / Authorisation	• Aneurysm *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Very Low Risk 1 in 100,000 – 1 in 10,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Head and Neck (Vertex to just below aortic arch) 2. Lateral Scout Head and Neck (Vertex to just below aortic arch) 3. Cerebral Angiogram with SmartPrep (ROI over aorta)
IV and Oral Contrast	**Royal Derby Hospital**
	Omnipaque 350 – 80ml at 4ml/s Saline 20mls at 4ml/s
	Queens Hospital Burton
	Omnipaque 300 – 100mls at 4ml/s
Scan delay	1. N/A 2. N/A 3. SmartPrep – ROI over aorta – Auto minimum delay
Scan Parameters	1. AP Scout Head and Neck kV – 120 mA – 20 2. Lateral Scout Head and Neck

	kV – 120 mA – 20 3. Cerebral Angiogram with SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 400) Noise Index – 14
Reformats	Coronal – CT COW COR MIP / ASIR 50 / 5mm Sagittal – CT COW SAG MIP / ASIR 50 / 5mm Axial – CT COW MIP / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.

Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Cerebral Venogram (B5)	
E-Vetting and CRIS Code	Cerebral Venogram (B5) CVECE
Clinical indications allowing justification / Authorisation	• Suspected Venous Sinus Thrombosis *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Very Low Risk 1 in 100,000 – 1 in 10,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly tucked down/ Arms by side
Centering point	Vertical light to lower orbital margin, horizontal light to the external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Cerebral Venogram with a 40s delay
IV and Oral Contrast	Omnipaque 300 – 100mls at 3ml/s
Scan delay	1. N/A 2. N/A 3. 40s delay
Scan Parameters	1. AP Scout Head kV – 120 mA – 20 2. Lateral Scout Head kV – 120 mA – 20 3. Cerebral Venogram Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm

	kV – 120 Smart mA Used (Min 80 – Max 400) Noise Index – 14
Reformats	Coronal – CT COW COR MIP / ASIR 50 / 5mm Sagittal – CT COW SAG MIP / ASIR 50 / 5mm Axial – CT COW MIP / ASIR 50 / 5mm Axial – Standard filter / ASIR 50 / 5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance –

	June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Orbits (B6)	
E-Vetting and CRIS Code	Orbits (B6) CORBB
Clinical indications allowing justification / Authorisation	• Thyroid disease • Blunt orbital trauma • Orbital trauma with penetrating injury • Suspected foreign body not seen on x-ray *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to lower orbital margin, horizontal light to midline to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Orbits
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 20 2. Lateral Scout Head kV – 120 mA – 20 3. Orbits Rotation Speed – 0.5s Type – Helical

	Slice Thickness – 0.625mm kV – 100 Smart mA used (Min 50 – Max 200) Dose Index - 12
Reformats	Axial – Ultra filter / ASIR 60 / 0.625mm Axial – Standard / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance –

	June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Orbits + IV Contrast (B7)	
E-Vetting and CRIS Code	Orbits + IV Contrast (B7) CORBBC
Clinical indications allowing justification / Authorisation	• Thyroid disease • Blunt orbital trauma • Orbital trauma with penetrating injury with concern for vascular injury *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous reaction to iodine contrast
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Appropriate cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to lower orbital margin, horizontal light to midline to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Orbits with contrast
IV and Oral Contrast	Omnipaque 350 50mls Hand Injection
Scan delay	N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 20 2. Lateral Scout Head kV – 120 mA – 20 3. Orbits with contrast Rotation Speed – 0.5s

	Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA used (Min 50 – Max 200) Dose Index - 12
Reformats	Axial – Ultra filter / ASIR 60 / 0.625mm Axial – Standard / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging

	procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Pituitary + IV Contrast B8)	
E-Vetting and CRIS Code	Pituitary + IV Contrast (B8) CPITFC
Clinical indications allowing justification / Authorisation	• Known Tumour, suspicion of recurrence ?MRI Instead • Pituitary and juxtasellar problems *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergic reaction to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Very Low Risk 1 in 100,000 – 1 in 10,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Appropriate cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms by side
Centering point	Vertical light to the chin, horizontal light to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Brain with contrast (Vertex to base of skull)
IV and Oral Contrast	Omnipaque 350 50mls by hand injection
Scan delay	N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 10 2. Lateral Scout Head kV – 120 mA – 10 3. Brain Rotation Speed – 1.0s

	Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 380) Noise Index – 8
Reformats	Coronal – Standard / ASIR 50 / 1mm Sagittal – Standard / ASIR 50 / 1mm Axial – Bone Plus / ASIR 40 / 0.625mm Axial – Standard filter / ASIR 50 / 5mm Axial – Ultra / ASIR 60 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local

	investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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IAM/Temporal Bones + IV Contrast (Failed MR) (B9)	
E-Vetting and CRIS Code	IAM/Temporal Bones + IV Contrast (Failed MR)(B9) CIAMBC CSKUHC
Clinical indications allowing justification / Authorisation	• Failed MRI for IAM and Temporal Bones *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergic reaction to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Very Low Risk 1 in 100,000 – 1 in 10,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Appropriate cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms by side
Centering point	Vertical light to the chin, horizontal light to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Brain with contrast (Vertex to base of skull)
IV and Oral Contrast	Omnipaque 350 50mls by hand injection
Scan delay	N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 10 2. Lateral Scout Head kV – 120 mA – 10 3. Brain Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 380)

	Noise Index – 8
Reformats	Axial – Standard filter / ASIR 40 / 0.625mm Axial – Standard filter / ASIR 40 / 5mm Axial – Bone Plus / ASIR 40 / 0.625mm Axial – Ultra / No ASIR / 0.625mm (Left) Axial – Ultra / No ASIR / 0.625mm (Right) *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation

	Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Dentascan (B10)	
E-Vetting and CRIS Code	Dentascan (B10) CMAND or CMAXI
Clinical indications allowing justification / Authorisation	• From Dentist/Max Fax *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Very Low Risk 1 in 100,000 – 1 in 10,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin raised slightly / Arms by side
Centering point	Vertical light to the chin, horizontal light to external auditory meatus.
Scan Range	1. AP Scout Face 2. Lateral Scout Face 3. Maxilla scan – Top of maxilla to below top teeth or Mandible scan - from TMJ to below mandible.
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Face kV – 120 mA – 10 2. Lateral Scout Face kV – 120 mA – 10 3. Maxilla / Mandible Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120

	mA – 20 **FOV MUST BE 13.5cm**
Reformats	Axial – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Sinuses (E1)	
E-Vetting and CRIS Code	Sinuses (E1) CSINU
Clinical indications allowing justification / Authorisation	• Suspected Sinusitis or sinus pathology • Recurrent infections, • Unpleasant smell, • Facial pain, • Constant nasal discharge • Sinusitis, • Rhinosinusitis • ? Polyps, • Planned surgery, • H/O previous surgery, (e.g. polypectomy etc.) *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.

Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	160mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms by side
Centering point	Vertical light to lower orbital margin, horizontal light to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Sinuses (Above frontal sinuses to just below maxillary sinuses)
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 10

	2. Lateral Scout Head kV – 120 mA – 10 3. Sinuses Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 mA – 40
Reformats	Coronal – Bone Plus / ASIR 50 / 1mm Axial – Standard filter / ASIR 40 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.

Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Temporal Bones (E2)	
E-Vetting and CRIS Code	Temporal Bones (E2) CTEMP
Clinical indications allowing justification / Authorisation	• Bony pathology / anatomy? Cholesteatoma etc. *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Very Low Risk 1 in 100,000 – 1 in 10,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms by side
Centering point	Vertical light to lower orbital margin, horizontal light to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Temporal Bones (Above frontal sinuses, to just below the maxillary sinuses)
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 10 2. Lateral Scout Head kV – 120 mA – 10 3. Temporal Bones Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 140

	Smart mA used (Min 100 – Max 350) Noise Index – 9.5
Reformats	Coronal – Ultra / ASIR 70 / 1mm Axial –Ultra / ASIR 70 / 0.625mm Axial - Ultra / ASIR 70 / 0.625mm (Completed on 1024x1024 matrix to ensure spatial resolution) *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Temporal Bones + IV Contrast (E2)	
E-Vetting and CRIS Code	Temporal Bones + IV Contrast (E2) CTEMP
Clinical indications allowing justification / Authorisation	• Assessment of the temporal bones, bone and soft *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergic reaction to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Very Low Risk 1 in 100,000 – 1 in 10,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms by side
Centering point	Vertical light to lower orbital margin, horizontal light to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Temporal Bones (Above frontal sinuses, to just below the maxillary sinuses)
IV and Oral Contrast	Omnipaque 350 – 50mls Hand Injection
Scan delay	N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 10 2. Lateral Scout Head kV – 120 mA – 10 3. Temporal Bones

	Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 140 Smart mA used (Min 100 – Max 350) Noise Index – 9.5
Reformats	Coronal – Ultra / ASIR 70 / 1mm Axial –Ultra / ASIR 70 / 0.625mm Axial - Ultra / ASIR 70 / 0.625mm (Completed on 1024x1024 matrix to ensure spatial resolution) *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging

	procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Pulsatile Tinnitus (E7)	
E-Vetting and CRIS Code	Pulsatile Tinnitus (E7) CBSSKC + CTEMP + CSKUHC
Clinical indications allowing justification / Authorisation	• Pulsatile Tinnitus *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Very Low Risk 1 in 100,000 – 1 in 10,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to midline of the neck.
Scan Range	1. AP Scout Neck (Temporal Bones to just below clavicles) 2. Lateral Scout Neck (Temporal Bones to just below clavicles) 3. Arterial Temporal Bones to Hyoid with SmartPrep 4. Post contrast Brain
IV and Oral Contrast	**Royal Derby Hospital**
	Omnipaque 350 – 80ml at 4ml/s Saline 20mls at 4ml/s
	Queens Hospital Burton
	Omnipaque 300 – 100mls at 4ml/s
Scan delay	1. N/A 2. N/A 3. Smart Prep with auto minimum delay 4. N/A
Scan Parameters	1. AP Scout Neck kV – 120 m 1. Lateral Scout Neck

	kV – 120 mA – 20 2. Arterial Temporal Bones to Hyoid Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 45 3. Post contrast Brain Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 400) Noise Index – 7.65
Reformats	Coronal Neck – Standard filter/ ASIR 50 / 3mm Sagittal Neck – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 3.75mm Axial – Bone Plus / ASIR 50 / 0.625mm Axial – Standard / ASIR 50 / 0.625mm Axial – Standard / ASIR 40 / 5mm Axial – Ultra / ASIR 60 / 0.625 *MAR reformats may be created additionally if required*

Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Sinuses - Brainlab	
E-Vetting and CRIS Code	Sinuses - Brainlab CSINU
Clinical indications allowing justification / Authorisation	• Brainlab requests *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Eyes closed / Arms by side
Centering point	Vertical light to lower orbital margin, horizontal light to external auditory meatus.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Vertex of skull to bottom of the teeth. (Include all soft tissue, including nose and eyes)
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Head kV – 120 mA – 10 2. Lateral Scout Head kV – 120 mA – 10 3. Sinuses Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100

	mA – 40
Reformats	Coronal – Bone Plus / ASIR 50 / 1mm Coronal – Standard / ASIR 50 / 2mm Sagittal - Standard / ASIR 50 / 2mm Axial - Standard / ASIR 50 / 2mm Axial – Standard filter / ASIR 40 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation

	Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Facial Bones	
E-Vetting and CRIS Code	Facial Bones – Low Dose Bone only CFACI or CFACE
Clinical indications allowing justification / Authorisation	• Assessment of the bones of the face due to trauma, bony pathology, or surgery *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to midline of the neck.
Scan Range	1. AP Scout Face (Above orbits to clavicles) 2. Lateral Scout Face (Above orbits to clavicles) 3. Face ***(Low Dose Bone only)***
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Face kV – 120 mA – 20 2. Lateral Scout Face kV – 120 mA – 20 3. Facial Bones Rotation Speed – 0.6s

	Type – Helical Slice Thickness – 0.625mm kV – 120 mA - 80
Reformats	Coronal – Bone Plus / ASIR 50 / 3mm Sagittal – Bone Plus / ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX

	incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Face + NO IV Contrast	
E-Vetting and CRIS Code	Face + NO IV Contrast (Full Dose) CFACI
Clinical indications allowing justification / Authorisation	• Assessment of facial structures – bone and soft • Temporomandibular joint dysfunction • Trauma to the face *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to midline of the neck.
Scan Range	1. AP Scout Face (Above orbits to clavicles) 2. Lateral Scout Face (Above orbits to clavicles) 3. Face
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Face kV – 120 mA – 20 2. Lateral Scout Face kV – 120 mA – 20 3. Face Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 45

Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 3.75mm Axial – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Face + IV Contrast	
E-Vetting and CRIS Code	Face + IV Contrast CFACIC
Clinical indications allowing justification / Authorisation	• Tumour • Neoplasm • Malignancy • Lymphoma • Fungal Sinusitis *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to midline of the neck.
Scan Range	1. AP Scout Face (Above orbits to clavicles) 2. Lateral Scout Face (Above orbits to clavicles) 3. Face scan with 100s delay
IV and Oral Contrast	Omnipaque 300 – 100mls at 1ml/s
Scan delay	1. N/A 2. N/A 3. 100s delay
Scan Parameters	1. AP Scout Face kV – 120 mA – 20 2. Lateral Scout Face kV – 120 mA – 20

	3. Face scan with 100s delay Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 45
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 3.75mm Axial – Bone Plus / ASIR 50 / 0.625mm
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local

	investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Stroke Pathway - CTA (Biphastic Angiogram)	
E-Vetting and CRIS Code	Stroke Pathway - CTA (Biphasic Angiogram) CACDB + CSKUHC
Clinical indications allowing justification / Authorisation	• Assessment of the blood vessels in stroke patients from the aortic arch into the brain (carotids – COW) to assess for aneurysmal disease and clots for transfer to QMC for mechanical thrombectomy.
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Chin slightly raised / Arms down side
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Head and Neck (Vertex to just below aortic arch) 2. Lateral Scout Head and Neck (Vertex to just below aortic arch) 3. Carotid angiogram - Aortic arch to skull vertex with SmartPrep (ROI over aorta) 4. Post contrast head with 30s delay
IV and Oral Contrast	**Royal Derby Hospital**
	Omnipaque 350 – 80ml at 4ml/s Saline 20mls at 4ml/s
	Queens Hospital Burton
	Omnipaque 300 – 100mls at 4ml/s
Scan delay	1. N/A 2. N/A 3. SmartPrep – ROI over aorta – Auto minimum delay 4. 30s delay

Scan Parameters	1. AP Scout Head and Neck kV – 120 mA – 20 2. Lateral Scout Head and Neck kV – 120 mA – 20 3. Carotid Angiogram - Aortic arch to skull vertex Rotation Speed – 0.4s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 35 4. Post contrast head with 30s delay Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 100 – Max 400) Noise Index – 7.65
Reformats	Coronal – Standard / ASIR 50 / 3mm Sagittal – Standard / ASIR 50 / 3mm Axial – Standard / ASIR 40 / 5mm (Reconstructed manually to the tuberculum sellae-occipital protuberance line TS-OP) Axial – Standard / ASIR 50 / 3.75mm *MAR reformats may be created additionally if required*

Aftercare	Inpatients are checked they are feeling well before being sent back to the ward.
Results	For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.

Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Whole Aorta	
E-Vetting and CRIS Code	Whole Aorta CAOWH
Clinical indications allowing justification / Authorisation	• Assessment of new Abdominal Aortic Aneurysm (AAA) proven on Ultrasound etc. • Assessment of thoracic aortic disease and treatment planning *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Chest Abdomen Pelvis 2. Lateral Scout Chest Abdomen Pelvis 3. Arterial Base of Skull to Lesser Trochanters with Smartprep
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Oral preparation as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. Smart Prep (level of the diaphragms) with auto minimum delay
Scan Parameters	1. AP Scout Chest Abdomen Pelvis kV – 120 mA – 20

	2. Lateral Scout Chest Abdomen Pelvis kV – 120 mA – 20 4. Arterial Base of Skull to Lesser Trochanters Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 100 – Max 480) Noise Index – 50
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 2.5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.

Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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<u>Abdominal Aorta</u>	
E-Vetting and CRIS Code	Abdominal Aorta CABAO

Clinical indications allowing justification / Authorisation	• Assessment of new Abdominal Aortic Aneurysm (AAA) proven on Ultrasound etc. • Assessment of Surgical AAA repair • Assessment of Endovascular AAA repair follow up (EVAR) • Renal artery stenosis • Mesenteric artery stenosis • ? Abdominal Aorta Dissection • ? AAA Rupture *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A

Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen Pelvis 2. Lateral Scout Abdomen Pelvis 3. Arterial Abdomen Pelvis with Smartprep
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Oral preparation as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. Smart Prep (level of the diaphragms) with auto minimum delay
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Arterial Abdomen/Pelvis Rotation Speed – 0.5s

	Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 100 – Max 480) Noise Index – 50
Reformats	Coronal – Standard filter/ ASIR 20 / 3mm Sagittal – Standard filter/ ASIR 20 / 3mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance –

	June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Thoracic Aorta	
E-Vetting and CRIS Code	Thoracic Aorta CAOTH
Clinical indications allowing justification / Authorisation	• Assessment of endovascular Thoracic Stent (TAA repair) • Aneurysmal disease • Assessment of thoracic arteries *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scanners
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Whole chest with SmartPrep
IV and Oral Contrast	Omnipaque 300 – 100mls at 4ml/s
Scan delay	1. N/A 2. N/A 3. SmartPrep with minimum auto delay
Scan Parameters	1. AP Scout Chest kV – 120 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20

	3. Whole chest with SmartPrep Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA used (Min 100 - Max 480)
Reformats	Coronal – Standard / ASIR 50 / 5mm Sagittal – Standard / ASIR 50 / 5mm Axial – Standard / ASIR 50 / 2.5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local

	investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Thoracic Dissection	
E-Vetting and CRIS Code	Thoracic Dissection CAOTH + CAOWH

Clinical indications allowing justification / Authorisation	• ? Aortic Dissection *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A

Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scanners
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest Abdomen Pelvis 2. Lateral Scout Chest Abdomen Pelvis 3. Non Contrast chest 4. Arterial Base of Skull to Lesser Trochanters
IV and Oral Contrast	Omnipaque 300 – 100mls at 4ml/s
Scan delay	1. N/A 2. N/A 3. N/A 4. SmartPrep with minimum auto delay
Scan Parameters	1. AP Scout Chest Abdomen Pelvis kV – 120 mA – 20 2. Lateral Scout Chest Abdomen Pelvis kV – 120 mA – 20 3. Non Contrast chest Rotation Speed – 0.5s Type – Helical

	Slice Thickness – 0.625mm kV – 120 Smart mA used (Min 80 - Max 400) Noise Index – 63.6396 4. Arterial Base of Skull to Lesser Trochanters Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA used (Min 100 - Max 480) Noise Index – 50
Reformats	Coronal Chest – Standard / ASIR 50 / 5mm Coronal - Standard / ASIR 50 / 3mm Sagittal Chest – Standard / ASIR 50 / 5mm Sagittal – Standard / ASIR 50 / 3mm Axial Chest – Standard / ASIR 50 / 3mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm Axial – Standard / ASIR 50 / 2.5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales.

	For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

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Peripheral Angiogram	
E-Vetting and CRIS Code	Peripheral Angiogram CALLB
Clinical indications allowing justification / Authorisation	• Claudication • Critical Ischaemia • Previous angioplasty/stenting • MRA C/I *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen Pelvis and Legs 2. Lateral Scout Abdomen Pelvis and legs 3. Arterial Abdomen Pelvis and legs with Smartprep 4. Femoral run off Lower Leg (Above knee to foot)
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Oral preparation as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. Smart Prep (level of the diaphragms) with auto minimum delay 4. N/A
Scan Parameters	1. AP Scout Abdomen Pelvis and Legs kV – 120 mA – 20 2. Lateral Scout Abdomen Pelvis and Legs kV – 120 mA – 20

	3. Arterial Abdomen Pelvis and legs Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 100 – Max 480) Noise Index – 50 4. Femoral run off Lower Leg Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 80 – Max 480) Noise Index – 55
Reformats	Coronal – Standard filter/ ASIR 20 / 3mm (Completed on a 1024x1024 matrix) Sagittal – Standard filter/ ASIR 20 / 3mm (Completed on a 1024x1024 matrix) Axial – Standard filter / ASIR 50 / 5mm (Abdomen Pelvis) *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and

	appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

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Renal Angiogram	
E-Vetting and CRIS Code	Renal Angiogram CAREA
Clinical indications allowing justification / Authorisation	• Assessment of the renal arteries for stenosis • Transplant planning • Ischaemia *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	530mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen Pelvis 2. Lateral Scout Abdomen Pelvis 3. Arterial Abdomen Pelvis with Smartprep
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Oral preparation as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. Smart Prep (level of the diaphragms) with auto minimum delay
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis

	kV – 120 mA – 20 3. Arterial Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 100 – Max 480) Noise Index – 50
Reformats	Coronal – Standard filter/ ASIR 20 / 3mm Sagittal – Standard filter/ ASIR 20 / 3mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.

Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Chimney EVAR - Abdominal Aorta	
E-Vetting and CRIS Code	Chimney EVAR - Abdominal Aorta CABAO
Clinical indications allowing justification / Authorisation	• Chimney EVAR follow up *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	530mGycm
Pre-procedural/ Preparation	• * BLOOD TEST* must be done for "POST Chimney EVAR" before the CT scan • PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen Pelvis 2. Lateral Scout Abdomen Pelvis 3. Arterial Abdomen Pelvis with Smartprep
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Oral preparation as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. Smart Prep (level of the diaphragms) with auto minimum delay
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20

	3. Arterial Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 100 – Max 480) Noise Index – 50
Reformats	Coronal – Standard filter/ ASIR 20 / 3mm Sagittal – Standard filter/ ASIR 20 / 3mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if

	a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.
<u>FEVAR - Abdominal Aorta</u>	
E-Vetting and CRIS Code	FEVAR - Abdominal Aorta CABAO

Clinical indications allowing justification / Authorisation	• *FEVAR follow up* *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	580mGycm
Pre-procedural/ Preparation	• * BLOOD TEST* must be done for "POST FEVAR" before the CT scan • PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner

Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen Pelvis 2. Lateral Scout Abdomen Pelvis 3. Arterial Abdomen Pelvis with Smartprep
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Oral preparation as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. Smart Prep (level of the diaphragms) with auto minimum delay
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Arterial Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 100 – Max 480)

	Noise Index – 50
Reformats	Coronal – Standard filter/ ASIR 20 / 3mm Sagittal – Standard filter/ ASIR 20 / 3mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Dual Phase – Aorta + Abdomen & Pelvis 65s	
E-Vetting and CRIS Code	Dual Phase – Aorta + Abdomen & Pelvis 65s CABAO + CABPEC
Clinical indications allowing justification / Authorisation	• *To assess for acute bowel ischaemia* • *To assess for symptomatic mesenteric vascular disease* *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen Pelvis 2. Lateral Scout Abdomen Pelvis 3. Arterial Abdomen Pelvis with Smartprep 4. Portal Venous Abdomen Pelvis
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Oral preparation as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. Smart Prep (level of the diaphragms) with auto minimum delay 4. 45s post arterial scan
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20

	2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Arterial Abdomen Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234 4. Portal Venous Abdomen Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard / ASIR 50 / 3mm (for both ranges) Sagittal – Standard / ASIR 50 / 3mm (for both ranges) Axial - Standard / ASIR 50 / 5mm (for both ranges) *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer.

	Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

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Mesenteric Angiogram	
E-Vetting and CRIS Code	Mesenteric Angiogram CAREA + CABPEC
Clinical indications allowing justification / Authorisation	• *To assess for acute bowel ischaemia* • *To assess for symptomatic mesenteric vascular disease* *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen Pelvis 2. Lateral Scout Abdomen Pelvis 3. Arterial Abdomen Pelvis with Smartprep 4. Portal Venous Abdomen Pelvis
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Oral preparation as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. Smart Prep (level of the diaphragms) with auto minimum delay 4. 45s post arterial scan
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20

	2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Arterial Abdomen Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234 4. Portal Venous Abdomen Pelvis Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard / ASIR 50 / 3mm (for both ranges) Sagittal – Standard / ASIR 50 / 3mm (for both ranges) Axial - Standard / ASIR 50 / 5mm (for both ranges) *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.

Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.

Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Prostate Artery Embolisation Angiogram	
E-Vetting and CRIS Code	Prostate Artery Embolisation Angiogram CPELVC + CART
Clinical indications allowing justification / Authorisation	• Assessment of the prostate artery for potential embolization *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Blood Pressure Check for GTN Spray. If systolic number less than 100 check with a radiologist before giving GTN • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen Pelvis 2. Lateral Scout Abdomen Pelvis 3. 2 sprays of GTN under the tongue prior to scanning (Please check blood pressure first. If systolic number (top number) is less than 100 check with a radiologist before giving GTN) 4. Arterial L4 to lesser trochanter - using SmartPrep inferior to the renal arteries 5. Venous L4 to lesser trochanter at 35s after arterial scan has triggered
IV and Oral Contrast	Omnipaque 350 – 120ml at 5ml/s
Scan delay	1. N/A 2. N/A 3. N/A 4. SmartPrep inferior to the renal arteries with auto minimum delay 5. 35s after arterial scan begun
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20

	2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. N/A 4. Arterial L4 to lesser trochanter Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 47 5. Venous L4 to lesser trochanter Rotation Speed – 0.5s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 47
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm (Both ranges) Sagittal – Standard filter/ ASIR 50 / 3mm (Both ranges) Axial – Standard filter / ASIR 50 / 5mm (Both Ranges *MAR reformats may be created additionally if required*
Aftercare	Patient are then sent to a prostate artery embolization clinic with the cannula in for further assessment
Results	For outpatients, results will be provided to the patient by the

	referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.

Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Full Body Trauma – Bastion Protocol	
E-Vetting and CRIS Code	Full body trauma with Bastion Protocol CSKUH + CCSPN + CCHAPC
Clinical indications allowing justification / Authorisation	• Major life threatening trauma i.e. hit by car, fall from a height *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	Brain (Standard): 790 Brain (Fast): N/A C-Spine: 400 Bastion: N/A
Local Diagnostic Reference Level	Brain (Standard): 680 Brain (Fast): 810 C-Spine: 230 Bastion: N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head for body scan and down by side for head and c-spine imaging. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	1. Brain – Vertical light to lower orbital margin / Horizontal light to external auditory meatus. 2. C-Spine – Vertical light to sternal notch / Horizontal line to midline of the neck 3. Chest Abdomen Pelvis Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Head 2. Lateral Scout Head 3. Brain 4. AP Scout C-Spine 5. Lateral Scout C-Spine 6. C-Spine 7. AP Scout Chest/ Abdomen/ Pelvis/Femur 8. Lateral Scout Chest/ Abdomen/ Pelvis/Femur

	9. Single run Chest Abdomen Pelvis & proximal femora
IV and Oral Contrast	150mls Split Bolus - Omnipaque 300 IV contrast 1. 65 ml/s 2mls/sec 2. 85 ml/s at 3.5 ml/s
Scan delay	1. N/A 2. N/A 3. N/A 4. N/A 5. N/A 6. N/A 7. N/A 8. N/A 9.65 seconds timed delay
Scan Parameters	1. AP Scout Head kV – 120 mA – 10 2. Lateral Scout Head kV – 120 mA – 10 3. Brain Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 100 – Max 400) Noise Index – 7.65 4. AP Scout C-Spine kV – 120

	mA – 20 5. Lateral Scout C-Spine kV – 120 mA – 20 6. C-Spine Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 40 7. AP Scout Chest Abdomen Pelvis kV – 120 mA – 20 8. Lateral Scout Chest Abdomen Pelvis kV – 120 mA – 20 9. Single run Chest Abdomen Pelvis & proximal femora Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 100 – Max 560) Noise Index – 33.234
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm (C-spine and body) Sagittal – Standard filter/ ASIR 50 / 3mm (C-spine and body) Axial – Standard filter / ASIR 50 / 5mm

	Axial – Bone Plus / ASIR 50 / 1.25mm Brain Axial – Standard filter / ASIR 40 / 5mm (Reconstructed manually to the tuberculum sellae-occipital protuberance line TS-OP) Brain Axial – Bone Plus / ASIR 40 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Angiogram - Aortic Arch and Left Arm	
E-Vetting and CRIS Code	Angiogram Aortic arch and left arm CAOTH + CUPALC
Clinical indications allowing justification / Authorisation	• *Assessment of the arteries supplying the arm due to peripheral vascular disease or acute vascular symptoms* • *Ischaemia* *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working (Must be the right arm) • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Right arm raised above head with left arm down by side.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest Abdomen Pelvis 2. Lateral Scout Chest Abdomen Pelvis 3. Arterial mid neck (C4) to Iliac Crest and to include the LEFT arm using SmartPrep
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s
Scan delay	1. N/A 2. N/A 3. Smart Prep (level of the diaphragms) with auto minimum delay
Scan Parameters	1. AP Scout Chest Abdomen Pelvis kV – 120 mA – 20 2. Lateral Scout Chest Abdomen Pelvis kV – 120 mA – 20 3. Arterial mid neck (C4) to Iliac Crest and to include the LEFT arm Rotation Speed – 0.5s

	Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 100 – Max 480) Noise Index – 50
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard / ASIR 50 / 2.5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation

	Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Angiogram - Aortic Arch and Right Arm	
E-Vetting and CRIS Code	Angiogram Aortic arch and right arm CAOTH + CUPARC
Clinical indications allowing justification / Authorisation	• *Assessment of the arteries supplying the arm due to peripheral vascular disease or acute vascular symptoms* • *Ischaemia* *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working (Must be the right arm) • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Left arm raised above head with right arm down by side.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest Abdomen Pelvis 2. Lateral Scout Chest Abdomen Pelvis 3. Arterial mid neck (C4) to Iliac Crest and to include the RIGHT arm using SmartPrep
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s
Scan delay	1. N/A 2. N/A 3. Smart Prep (level of the diaphragms) with auto minimum delay
Scan Parameters	1. AP Scout Chest Abdomen Pelvis kV – 120 mA – 20 2. Lateral Scout Chest Abdomen Pelvis kV – 120 mA – 20 3. Arterial mid neck (C4) to Iliac Crest and to include the RIGHT arm Rotation Speed – 0.5s

	Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 100 – Max 480) Noise Index – 50
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard / ASIR 50 / 2.5mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation

	Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Venogram – Left Arm	
E-Vetting and CRIS Code	Venogram – Left Arm CUPALC
Clinical indications allowing justification / Authorisation	• Assessment of the veins of the arm for swelling in complex cases (duplex ultrasound is usual imaging modality) • Pre treatment planning for venous thrombolysis *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working (Must be the right arm) • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Right arm raised above head with left arm down by side
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest Abdomen Pelvis 2. Lateral Scout Chest Abdomen Pelvis 3. Arterial mid neck (C4) to Iliac Crest and to include the LEFT arm with 150 second delay
IV and Oral Contrast	Omnipaque 300 – 150ml at 4ml/s
Scan delay	1. N/A 2. N/A 3. 150s delay
Scan Parameters	1. AP Scout Chest Abdomen Pelvis kV – 120 mA – 20 2. Lateral Scout Chest Abdomen Pelvis kV – 120 mA – 20

	3. Arterial mid neck (C4) to Iliac Crest and to include the LEFT arm Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 480) Noise Index – 34.89
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.

Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Venogram – Right Arm	
E-Vetting and CRIS Code	Venogram – Right Arm CUPARC
Clinical indications allowing justification / Authorisation	• Assessment of the veins of the arm for swelling in complex cases (duplex ultrasound is usual imaging modality) • Pre treatment planning for venous thrombolysis *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working (Must be the right Left) • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Right arm raised above head with right arm down by side
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest Abdomen Pelvis 2. Lateral Scout Chest Abdomen Pelvis 3. Arterial mid neck (C4) to Iliac Crest and to include the RIGHT arm with 150 second delay
IV and Oral Contrast	Omnipaque 300 – 150ml at 4ml/s
Scan delay	1. N/A 2. N/A 3. 150s delay
Scan Parameters	1. AP Scout Chest Abdomen Pelvis kV – 120 mA – 20 2. Lateral Scout Chest Abdomen Pelvis kV – 120 mA – 20 3. Arterial mid neck (C4) to Iliac Crest and to include the RIGHT arm Rotation Speed – 0.5s

	Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 480) Noise Index – 34.89
Reformats	Coronal – Standard filter/ ASIR 50 / 3mm Sagittal – Standard filter/ ASIR 50 / 3mm Axial – Standard filter / ASIR 50 / 5mm Axial Chest – Bone Plus / ASIR 50 / 0.625mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX

	incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Ankle	
E-Vetting and CRIS Code	Ankle CANKL or CANKR *Body area may be requested as left, right or both, this document relates to all foot and ankle requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the ankle • Trauma *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms down (The effected leg to be scanned should be flat, with the opposite leg bent at the knee)
Centering point	Vertical light to the ankle joint, horizontal light to middle of the ankle. (If left or right only - Patient slightly off centre to ensure specific leg in the middle if the gantry)
Scan Range	1. AP Scout Ankle 2. Lateral Ankle 3. Unenhanced Ankle
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Ankle kV – 12 mA – 20 2. Lateral Scout Ankle kV – 120 mA – 40 3. Unenhanced Ankle Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm

	kV – 120 mA - 65
Reformats	Axial - Ultra / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may also be added if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Foot	
E-Vetting and CRIS Code	Foot CFOOL or CFOOR *Body area may be requested as left, right or both, this document relates to all foot requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the foot • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms down (The effected leg to be scanned should be flat, with the opposite leg bent at the knee)
Centering point	Vertical light to the ankle joint, horizontal light to middle of the ankle. (If left or right only - Patient slightly off centre to ensure specific leg in the middle if the gantry)
Scan Range	1. AP Scout Foot 2. Lateral Foot 3. Unenhanced Foot
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Foot kV – 12 mA – 20 2. Lateral Scout Foot kV – 120 mA – 40 3. Unenhanced Foot Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm

	kV – 120 mA - 65
Reformats	Axial - Ultra / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may also be added if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
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Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Foot and Ankle	
E-Vetting and CRIS Code	Foot and Ankle CANKL + CFOOL CANKR + CFOOR *Body area may be requested as left, right or both, this document relates to all foot and ankle requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the foot and ankle • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms down (The effected leg to be scanned should be flat, with the opposite leg bent at the knee)
Centering point	Vertical light to the ankle joint, horizontal light to middle of the ankle. (If left or right only - Patient slightly off centre to ensure specific leg in the middle if the gantry)
Scan Range	1. AP Scout Foot and Ankle 2. Lateral Foot and Ankle 3. Unenhanced Foot and Ankle
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Foot and Ankle kV – 12 mA – 20 2. Lateral Scout Foot and Ankle kV – 120 mA – 40 3. Unenhanced Foot and Ankle Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm

	kV – 120 mA - 65
Reformats	Axial - Ultra / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may also be added if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Calcaneum	
E-Vetting and CRIS Code	Calcaneum CCALL or CCALR *Body area may be requested as left, right or both, this document relates to all calcaneum requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the calcaneum • Trauma *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms down (The effected leg to be scanned should be flat, with the opposite leg bent at the knee)
Centering point	Vertical light to the ankle joint, horizontal light to middle of the ankle. (If left or right only - Patient slightly off centre to ensure specific leg in the middle if the gantry)
Scan Range	1. AP Scout Calcaneum 2. Lateral Calcaneum 3. Unenhanced Calcaneum
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Calcaneum kV – 12 mA – 20 2. Lateral Scout Calcaneum kV – 120 mA – 40 3. Unenhanced Calcaneum Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm

	kV – 120 mA - 65
Reformats	Axial - Ultra / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may also be added if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Knee	
E-Vetting and CRIS Code	Knee CKNEL or CKNER *Body area may be requested as left or right, this document relates to all knee requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the knee • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms down
Centering point	Vertical light to the knee joint, horizontal light to middle of the knee. (Patient slightly off centre to ensure specific leg in the middle if the gantry)
Scan Range	1. AP Scout Knee 2. Lateral Knee 3. Unenhanced Knee
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Knee kV – 12 mA – 20 2. Lateral Scout Knee kV – 120 mA – 40 3. Unenhanced Knee Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120

	Smart mA used (Min 75 – Max 200) Noise Index – 50
Reformats	Axial - Bone plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may also be added if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Lower Leg(s)	
E-Vetting and CRIS Code	Lower Leg(s) CLOLB or CLOLL or CLOLR *Body area may be requested as left, right or both, this document relates to all clavicle requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the lower leg(s) • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms down
Centering point	Vertical light to mid lower leg, horizontal light to middle of the lower leg. (If left or right only - Patient slightly off centre to ensure specific leg in the middle if the gantry)
Scan Range	1. AP Scout Lower Leg 2. Lateral Lower Leg 3. Unenhanced Lower Leg(s) (Above the knee to below the foot)
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Lower Leg kV – 12 mA – 20 2. Lateral Scout Lower Leg kV – 120 mA – 40 3. Unenhanced Lower Leg(s) Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm

	kV – 120 Smart mA Used (Min 80 – Max 400) Noise Index – 50
Reformats	Axial - Bone Plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may also be added if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
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Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Knee Arthrogram	
E-Vetting and CRIS Code	Knee Arthrogram CJKNL or CJKNR *Body area may be requested as left or right, this document relates to all knee arthrogram requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the knee joint *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Injection into the knee cavity is completed in the fluoroscopy department
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• Injection into the knee cavity is completed in the fluoroscopy department • PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms down
Centering point	Vertical light to the knee joint, horizontal light to middle of the knee. (Patient slightly off centre to ensure specific leg in the middle if the gantry)
Scan Range	1. AP Scout Knee 2. Lateral Knee 3. Unenhanced Knee
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Knee kV – 12 mA – 20 2. Lateral Scout Knee kV – 120 mA – 40 3. Unenhanced Knee Rotation Speed – 1.0s

	Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA used (Min 75 – Max 200) Noise Index – 50
Reformats	Axial - Bone plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may also be added if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified.

	Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Hip	
E-Vetting and CRIS Code	Hip CHIPL or CHIPR *Body area may be requested as left or right this document relates to all hip requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the hip anatomy • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms across the patient's chest, away from the iliac crest
Centering point	Vertical light to iliac crest, horizontal light to middle of the body.
Scan Range	1. AP Scout Pelvis 2. Lateral Scout Pelvis 3. Unenhanced Hip
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Pelvis kV – 12 mA – 20 2. Lateral Scout Pelvis kV – 120 mA – 40 3. Unenhanced Pelvis Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120

	Smart mA Used (Min 80 – Max 400) Noise Index – 50
Reformats	Axial - Detail / ASIR 50 / 0.625mm Coronal – Bone Plus / ASIR 50 / 3mm Sagittal - Bone Plus / ASIR 50 / 3mm *MAR reformats may also be added if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
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Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Hip Arthrogram	
E-Vetting and CRIS Code	Hip CJHIL or CJHILR *Body area may be requested as left or right this document relates to all hip requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the hip joint *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Injection into the knee cavity is completed in the fluoroscopy department
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• Injection into the knee cavity is completed in the fluoroscopy department • PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms across the patient's chest, away from the iliac crest
Centering point	Vertical light to iliac crest, horizontal light to middle of the body.
Scan Range	1. AP Scout Pelvis 2. Lateral Scout Pelvis 3. Unenhanced Hip
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Pelvis kV – 12 mA – 20 2. Lateral Scout Pelvis kV – 120 mA – 40 3. Unenhanced Pelvis Rotation Speed – 0.7s

	Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 400) Noise Index – 50
Reformats	Axial - Detail / ASIR 50 / 0.625mm Coronal – Bone Plus / ASIR 50 / 3mm Sagittal - Bone Plus / ASIR 50 / 3mm MAR reformats may also be added if required
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified.

	Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Orthopaedic Pelvis	
E-Vetting and CRIS Code	Orthopaedic Pelvis CPELV
Clinical indications allowing justification / Authorisation	• *Assess the bony anatomy of the pelvis.* • *Trauma ? fracture* *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible
Centering point	Vertical light to iliac crests, horizontal light to middle of body.
Scan Range	1. AP Scout Pelvis 2. Lateral Scout Pelvis 3. Unenhanced Pelvis
IV and Oral Contrast	N/A
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Pelvis kV – 12 mA – 20 2. Lateral Scout Pelvis kV – 120 mA – 40 3. Unenhanced Pelvis Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 400)

	Noise Index – 50
Reformats	Axial - Detail / ASIR 50 / 0.625mm Coronal – Bone Plus / ASIR 50 / 3mm Sagittal - Bone Plus / ASIR 50 / 3mm *MAR reformats may also be added if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Upper Leg	
E-Vetting and CRIS Code	Upper Leg CTHIB
Clinical indications allowing justification / Authorisation	• Assessment of the upper legs • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms down
Centering point	Vertical light to mid-thigh, horizontal light to middle of the thigh.
Scan Range	1. AP Scout Thigh 2. Lateral Thigh 3. Unenhanced Thigh (Above the hip to below the knee)
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Thigh kV – 12 mA – 20 2. Lateral Scout Thigh kV – 120 mA – 40 3. Unenhanced Thigh Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 400)

	Noise Index – 50
Reformats	Axial - Bone Plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may also be added if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Lumbar Spine	
E-Vetting and CRIS Code	Lumbar Spine CLSPN
Clinical indications allowing justification / Authorisation	• Assessment of the Lumbar Spine • Trauma • Chronic lower back pain and contraindicated for MRI Spine *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Arms above the head
Centering point	Vertical light to Xiphisternum, horizontal light to middle of the body
Scan Range	1. AP Scout Lumbar Spine 2. Lateral Lumbar Spine 3. Unenhanced Lumbar Spine
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Lumbar Spine kV – 120 mA – 20 4. Lateral Scout Lumbar Spine kV – 120 mA – 40 5. Unenhanced Lumbar Spine Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120

	Smart mA Used (Min 80 – Max 400) Noise Index – 40
Reformats	Axial - Bone Plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm Coronal and sagittal reformats created manually. *MAR reformats may also be completed*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Thoracic Spine	
E-Vetting and CRIS Code	Thoracic Spine CTSPN
Clinical indications allowing justification / Authorisation	• Assessment of the Thoracic Spine • Trauma • Assessment of fracture for theatre • Unable to undergo MRI Spine *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Arms up above the head
Centering point	Vertical light to sternal notch, horizontal light to middle of the body
Scan Range	1. AP Scout Thoracic Spine 2. Lateral Thoracic Spine 3. Unenhanced Thoracic Spine
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Thoracic Spine kV – 12 mA – 20 2. Lateral Scout Thoracic Spine kV – 120 mA – 20 3. Unenhanced Thoracic Spine Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120

	Smart mA Used (Min 85 – Max 400) Noise Index – 40
Reformats	Axial - Bone Plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm Coronal and Sagittal reformats created manually *MAR reformats may also be completed.*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Cervical Spine	
E-Vetting and CRIS Code	Cervical Spine CCSPN
Clinical indications allowing justification / Authorisation	• Assessment of the Cervical Spine • Trauma Cervical Spine ?fracture • Non Traumatic neck pain • Brachialgia • Degenerative change *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	400mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Arms down
Centering point	Vertical light to sternal notch, horizontal light to middle of the neck
Scan Range	1. AP Scout Cervical Spine 2. Lateral Cervical Spine 3. Unenhanced Cervical Spine
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Cervical Spine kV – 12 mA – 20 2. Lateral Scout Cervical Spine kV – 120 mA – 20 3. Unenhanced Cervical Spine

	Rotation Speed – 0.6s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 450) Noise Index – 40
Reformats	Axial - Standard / ASIR 50 / 0.625mm Coronal – Standard / ASIR 50 / 3mm Sagittal – Standard / ASIR 50 / 3mm *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if

	a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Shoulder Arthrogram	
E-Vetting and CRIS Code	Shoulder Arthrogram CJSHL + CJSHR *Body area may be requested as left, right or both, this document relates to all shoulder requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the shoulder(s) • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Arms down (If left or right only - Patient slightly off centre to ensure shoulder in the middle if the gantry)
Centering point	Vertical light to the shoulder joint, horizontal light to middle of body.
Scan Range	1. AP Scout upper chest 2. Lateral upper chest 3. Unenhanced shoulder(s)
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout upper chest kV – 12 mA – 20 2. Lateral Scout upper chest kV – 120 mA – 40 4. Unenhanced shoulder(s) Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 400)

	Noise Index – 50
Reformats	Axial - Bone Plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Scapula	
E-Vetting and CRIS Code	Scapula CSCPL or CSCPR *Body area may be requested as left or this document relates to all scapula requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the scapula • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Arms down (If left or right only - Patient slightly off centre to ensure shoulder in the middle if the gantry)
Centering point	Vertical light to the shoulder joint, horizontal light to middle of body.
Scan Range	1. AP Scout upper chest 2. Lateral upper chest 3. Unenhanced scapula
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout upper chest kV – 12 mA – 20 2. Lateral Scout upper chest kV – 120 mA – 40 5. Unenhanced scapula Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 400) Noise Index – 50

Reformats	Axial - Bone Plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Upper Arm	
E-Vetting and CRIS Code	Upper Arm CUPAL + CUPAR *Body area may be requested as left or right, this document relates to all upper arm requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the upper arm • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Effected arm down, opposite arm up above head
Centering point	Vertical light to the middle of the humerus, horizontal light to middle of the arm.
Scan Range	1. AP Scout upper arm 2. Lateral upper arm 3. Unenhanced upper arm
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout upper arm kV – 12 mA – 20 2. Lateral Scout upper arm kV – 120 mA – 40 6. Unenhanced arm Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 400)

	Noise Index – 50
Reformats	Axial - Bone Plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Clavicle(s)	
E-Vetting and CRIS Code	Clavicle(s) CCLAL + CCLAR *Body area may be requested as left, right or both, this document relates to all clavicle requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of both clavicles • Trauma *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Arms down
Centering point	Vertical light to sternal notch, horizontal light to middle of body. (If left or right only - Patient slightly off centre to ensure shoulder in the middle if the gantry)
Scan Range	1. AP Scout upper chest 2. Lateral upper chest 3. Unenhanced clavicle(s)
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout upper chest kV – 12 mA – 20 2. Lateral Scout upper chest kV – 120 mA – 40 3. Unenhanced Clavicle(s) Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120

	Smart mA Used (Min 80 – Max 400) Noise Index – 50
Reformats	Axial - Bone Plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Sternoclavicular Joints	
E-Vetting and CRIS Code	Sternoclavicular Joints CSCJB
Clinical indications allowing justification / Authorisation	• Assessment of both sternoclavicular joints • Trauma • Lump? Cause *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Head First / Arms down
Centering point	Vertical light to sternal notch, horizontal light to middle of body. (If left or right only - Patient slightly off centre to ensure shoulder in the middle if the gantry)
Scan Range	1. AP Scout upper chest 2. Lateral upper chest 3. Unenhanced Sternoclavicular joints
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout upper chest kV – 12 mA – 20 2. Lateral Scout upper chest kV – 120 mA – 40 3. Unenhanced Sternoclavicular joints Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm

	kV – 120 Smart mA Used (Min 80 – Max 400) Noise Index – 50
Reformats	Axial - Bone Plus / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Elbow	
E-Vetting and CRIS Code	Elbow CELBL or CELBR *Body area may be requested as left or right, this document relates to all elbow requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the elbow • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine or Prone / Head First / Effected arm above the head. *If it is not possible to get the arm above the head then a scan with the arm by the patient's side is possible. This is a different protocol selection as described below*
Centering point	Vertical light to the elbow, horizontal light to middle of the arm.
Scan Range	1. AP Scout elbow 2. Lateral Scout elbow 3. Unenhanced elbow
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout elbow kV – 12 mA – 20 2. Lateral Scout elbow kV – 120 mA – 40 3. Unenhanced elbow Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm

	kV – 120 mA – 75 *Alternative method – Arm by side* *Rotation Speed – 0.8s* *Type – Helical* *Slice Thickness – 0.625mm* *kV – 120* *Smart mA used (Min 50 – Max 450)* *Noise index – 50*
Reformats	Axial - Ultra / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.

Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Forearm	
E-Vetting and CRIS Code	Forearm CFARL or CFARR *Body area may be requested as left or right, this document relates to all forearm requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the forearm • Trauma • Assessment of fracture for theatre *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine or Prone / Head First / Effected arm above the head. *If it is not possible to get the arm above the head then a scan with the arm by the patient's side is possible. This is a different protocol selection as described below*
Centering point	Vertical light to mid-forearm, horizontal light to middle of the arm.
Scan Range	1. AP Scout forearm 2. Lateral Scout forearm 3. Unenhanced forearm
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout forearm kV – 12 mA – 20 2. Lateral Scout forearm kV – 120 mA – 40 3. Unenhanced forearm Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm

	kV – 120 mA – 65 *Alternative method – Arm by side* *Rotation Speed – 0.8s* *Type – Helical* *Slice Thickness – 0.625mm* *kV – 120* *Smart mA used (Min 50 – Max 450)* *Noise index – 50*
Reformats	Axial - Ultra / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.

Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Wrist	
E-Vetting and CRIS Code	Wrist CWRIL or CWRIR *Body area may be requested as left or right, this document relates to all forearm requests made.*
Clinical indications allowing justification / Authorisation	• Assessment of the wrist • Trauma - no fracture seen on X-ray but ongoing symptoms • Scaphoid Fracture? Position? Need for fixation *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Prone / Head First / Effected arm above the head.
Centering point	Vertical light to the wrist, horizontal light to middle of the arm.
Scan Range	1. AP Scout Wrist 2. Lateral Scout Wrist 3. Unenhanced Wrist
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Wrist kV – 12 mA – 20 2. Lateral Scout Wrist kV – 120 mA – 40 3. Unenhanced Wrist Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120

	mA – 65
Reformats	Axial - Ultra / ASIR 50 / 0.625mm Axial - Detail / ASIR 50 / 0.625mm 3mm Coronal and Sagittal created manually *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Calcium Score	
E-Vetting and CRIS Code	Calcium Score CCASC
Clinical indications allowing justification / Authorisation	• Atypical Chest pain • AV Valve Assessment • Coronary Calcium Score Only *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Consistent heart rate <65bpm
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	CT04 & CT03
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Calcium score – Carina to Base of Heart
IV and Oral Contrast	N/A
Scan delay	N/A
Scan Parameters	1. AP Scout Chest kV – 12 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20

	3. Calcium score – Carina to Base of Heart Rotation Speed – 0.35s Type – Cine Slice Thickness – 2.5mm kV – 120 mA - 120
Reformats	Axial – Standard / ASIR 50 / 2.5mm
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX

	incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Cardiac Angiogram	
E-Vetting and CRIS Code	Cardiac Angiogram CACRY
Clinical indications allowing justification / Authorisation	• Investigation of Coronary Vessels • Investigation of Chest pain and Cardiac symptoms. Requests only on behalf of Cardiologists • Investigation of coronary stents and bypass *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine • Consistent heart rate <65bpm
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.

Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	Prospective, No Padding – 170mGycm Prospective, with padding – 280mGycm
Local Diagnostic Reference Level	Prospective, No Padding – 260mGycm Prospective, with padding – 260mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Blood Pressure • Heart Rate • Weight and height to calculate BMI • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	RDH: CT04 & CT03 QHB: CT2
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. MIROI 4. Cardiac Angiogram

IV and Oral Contrast	Omnipaque 350 – 100mls at 5ml/s Saline – 50mls at 5ml/s
Scan delay	1. N/A 2. N/A 3. N/A 4. N/A 5. As specified by the MIROI slice (Time to peak enhancement +6s)
Scan Parameters	1. AP Scout Chest kV – 120 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20 3. MIROI Rotation Speed – 1s Type – Axial Slice Thickness – 5mm kV – 100 (For large BMI this increases to 120) mA – 30 (This can range 30-50 depending upon the BMI of the patient and the protocol then selected) 4. Cardiac Angiogram BMI 20.1 – 22.5 Rotation Speed – 0.35s Type – Cine Slice Thickness – 0.625mm kV – 100 (For large BMI this increases to 120) mA – 280 (This can range 360-600 depending upon the BMI of the patient and the protocol then selected)

Reformats	For Angiogram – Axial – Standard / ASIR 50 / 0.625 Also manual reformats of the cardiac angiogram “opened out” to include the whole chest. If padding added further reformats are created manually of the different phases of the cardiac cycle.
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance –

	June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Cardiac – Calcium Score + Coronary Angiogram	
E-Vetting and CRIS Code	Cardiac – Calcium score + Coronary Angiogram CCASC + CACRY
Clinical indications allowing justification / Authorisation	• Investigation of Coronary Vessels • Investigation of Chest pain and Cardiac symptoms. Requests only on behalf of Cardiologists • Investigation of coronary stents and bypass *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine • Consistent heart rate <65bpm
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	Prospective, No Padding – 170mGycm Prospective, with padding – 280mGycm
Local Diagnostic Reference Level	Prospective, No Padding – 260mGycm Prospective, with padding – 260mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Blood Pressure • Heart Rate • Weight and height to calculate BMI • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	RDH: CT04 & CT03 QHB: CT2
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Calcium score – Carina to Base of Heart 4. MIROI 5. Cardiac Angiogram (Carina to bottom of the heart)
IV and Oral Contrast	Omnipaque 350 – 100mls at 5ml/s Saline – 50mls at 5ml/s
Scan delay	1. N/A 2. N/A 3. N/A 4. N/A 5. As specified by the MIROI slice (Time to peak enhancement

	+6s)
Scan Parameters	1. AP Scout Chest kV – 120 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20 3. Calcium score – Carina to Base of Heart Rotation Speed – 0.35s Type – Cine Slice Thickness – 2.5mm kV – 120 (For large BMI this increases to 120) mA – 120 (This can range 120-220 depending upon the BMI of the patient and the protocol then selected) 4. MIROI Rotation Speed – 1s Type – Axial Slice Thickness – 5mm kV – 100 (For large BMI this increases to 120) mA – 30 (This can range 30-50 depending upon the BMI of the patient and the protocol then selected) 5. Cardiac Angiogram BMI 20.1 – 22.5 Rotation Speed – 0.35s Type – Cine Slice Thickness – 0.625mm kV – 100 (For large BMI this increases to 120)

	mA – 280 (This can range 360-600 depending upon the BMI of the patient and the protocol then selected)
Reformats	For Calcium Score - Axial – Standard / ASIR 50 / 2.5mm For Angiogram – Axial – Standard / ASIR 50 / 0.625 Also manual reformats of the cardiac angiogram “opened out” to include the whole chest. If padding added further reformats are created manually of the different phases of the cardiac cycle.
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance –

	June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Cardiac – Coronary Angio (Grafts)	
E-Vetting and CRIS Code	Cardiac – Coronary Angio (Grafts) CCASC + CACRY + CCORGC
Clinical indications allowing justification / Authorisation	• Investigation of Coronary Vessels • Investigation of Chest pain and Cardiac symptoms. Requests only on behalf of Cardiologists • Investigation of coronary stents and bypass *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine • Consistent heart rate <65bpm
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	Prospective, No Padding – 170mGycm Prospective, with padding – 280mGycm
Local Diagnostic Reference Level	Prospective, No Padding – 260mGycm Prospective, with padding – 260mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Blood Pressure • Heart Rate • Weight and height to calculate BMI • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	RDH: CT04 & CT03 QHB: CT2
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Calcium score – Carina to Base of Heart 4. MIROI 5. Cardiac Angiogram (**Scanned bottom of the heart to above apices)**
IV and Oral Contrast	Omnipaque 350 – 100mls at 5ml/s Saline – 50mls at 5ml/s
Scan delay	1. N/A 2. N/A

	3. N/A 4. N/A 5. As specified by the MIROI slice (Time to peak enhancement +6s)
Scan Parameters	1. AP Scout Chest kV – 120 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20 3. Calcium score – Carina to Base of Heart Rotation Speed – 0.35s Type – Cine Slice Thickness – 2.5mm kV – 120 (For large BMI this increases to 120) mA – 120 (This can range 120-220 depending upon the BMI of the patient and the protocol then selected) 4. MIROI Rotation Speed – 1s Type – Axial Slice Thickness – 5mm kV – 100 (For large BMI this increases to 120) mA – 30 (This can range 30-50 depending upon the BMI of the patient and the protocol then selected) 5. Cardiac Angiogram BMI 20.1 – 22.5 **(Scanned bottom of the heart to above apices)** Rotation Speed – 0.35s

	Type – Cine Slice Thickness – 0.625mm kV – 100 (For large BMI this increases to 120) mA – 280 (This can range 360-600 depending upon the BMI of the patient and the protocol then selected)
Reformats	For Calcium Score - Axial – Standard / ASIR 50 / 2.5mm For Angiogram – Axial – Standard / ASIR 50 / 0.625 Also manual reformats of the cardiac angiogram “opened out” to include the whole chest. If padding added further reformats are created manually of the different phases of the cardiac cycle.
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.

Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Gated Aorta (Thoracic or whole)	
E-Vetting and CRIS Code	Gated Aorta (Thoracic and whole) CCASC + CAOTH or CAOWH
Clinical indications allowing justification / Authorisation	• Open Valve replacement • Thoracic Dissection • TAVI (Transcatheter Aortic Valve Replacement) *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous allergy to Iodine
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.

Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	380mGycm
Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Correct Cannula in situ • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	RDH: CT04 & CT03 QHB: CT2
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to sternal notch, horizontal light to middle of body.
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Calcium score – Carina to Base of Heart 4. Gated whole Chest 5. **If whole aorta -** Arterial Abdomen/Pelvis
IV and Oral Contrast	Omnipaque 350 – 100mls at 5ml/s Saline – 50mls at 5ml/s
Scan delay	1. N/A 2. N/A 3. N/A 4. N/A 5. As specified by the MIROI slice (Time to peak enhancement +6s)

Scan Parameters	1. AP Scout Chest kV – 120 mA – 20 2. Lateral Scout Chest kV – 120 mA – 20 3. Calcium score – Carina to Base of Heart Rotation Speed – 0.35s Type – Cine Slice Thickness – 2.5mm kV – 120 (For large BMI this increases to 120) mA – 120 (This can range 120-220 depending upon the BMI of the patient and the protocol then selected) 4. Gated Chest Rotation Speed – 0.35s Type – Cine Slice Thickness – 0.625mm kV – 100 mA – 420 5. **(If whole aorta)** Arterial Abdomen/Pelvis Rotation Speed – 0.35s Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA used (Min 100 – max 480) Noise index – 56.57

Reformats	For Calcium Score - Axial – Standard / ASIR 50 / 2.5mm For Angiogram – Axial – Standard / ASIR 50 / 0.625 *MAR reformats may be created additionally if required*
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Abdominal Biopsy	
E-Vetting and CRIS Code	Abdominal Biopsy CABDOB
Clinical indications allowing justification / Authorisation	• Biopsy for pathology situated in the abdomen *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Another imaging modality/technique is more appropriate • Pre examination checks not adequate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• Consent completed with the patient • Bloods checked =- INR • Monitor the patient's heart rate, respiratory rate and blood pressure • PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Specified by the radiologist
Centering point	Vertical light to Xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. Small range over the area of interest – as specified by the radiologist 4. Repeated range as per the radiologist
IV and Oral Contrast	If required by the radiologist – radiographers will be informed
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Abdomen/Pelvis kV – 120 mA – 20 2. Lateral Scout Abdomen/Pelvis kV – 120 mA – 20 3. Abdomen/Pelvis Rotation Speed – 0.5s Type – Helical

	Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 38
Reformats	Axial – Standard filter / ASIR 50 / 1.25mm
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Chest/Lung Biopsy	
E-Vetting and CRIS Code	Chest/Lung Biopsy CLUNGB OR CCHESB
Clinical indications allowing justification / Authorisation	• *Biopsy of pathology in the chest or lungs* *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Another imaging modality/technique is more appropriate • Pre examination checks not adequate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• Consent completed with the patient • Bloods checked =- INR • Monitor the patient's heart rate, respiratory rate and blood pressure • PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Specified by the radiologist
Centering point	Specified by the radiologist
Scan Range	1. AP Scout Chest 2. Lateral Scout Chest 3. Small range over the area of interest – as specified by the radiologist 4. Repeated range as per the radiologist when required in biopsy mode
IV and Oral Contrast	If required by the radiologist – radiographers will be informed
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout kV – 120 mA – 20 2. Lateral Scout kV – 120 mA – 20 3. Small range in the chest as specified by the radiologist Rotation Speed – 0.5s Type – Helical

	Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 40 4. Smart Step protocol if required.
Reformats	Axial – Standard / ASIR 50 / 1.25mm
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation

	Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Bone Biopsy	
E-Vetting and CRIS Code	Bone Biopsy CBIOPB
Clinical indications allowing justification / Authorisation	• Bone Biopsy *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Another imaging modality/technique is more appropriate • Pre examination checks not adequate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000

National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• Consent completed with the patient • Bloods checked =- INR • Monitor the patient's heart rate, respiratory rate and blood pressure • PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Specified by the radiologist
Centering point	Specified by the radiologist
Scan Range	1. AP Scout (area of interest) 2. Lateral Scout (area of interest) 3. Small range over the area of interest – as specified by the radiologist 4. Repeated range as per the radiologist when required – Smart Step.
IV and Oral Contrast	If required by the radiologist – radiographers will be informed
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout (area of interest) kV – 120 mA – 20 2. Lateral Scout (area of interest) kV – 120 mA – 20 3. Scan range (Area of interest) Rotation Speed – 0.5s Type – Helical

	Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 38 4. Smart Step protocol if required. *Please change the algorithm to bone*
Reformats	Axial – Bone Plus / ASIR 50 / 1.25mm
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX

	incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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Drainage / Aspiration

E-Vetting and CRIS Code	Drainage / Aspiration CDRAID or CCHESD (Chest) CABDOD (Abdomen)
Clinical indications allowing justification / Authorisation	• Drainage or aspiration *Other clinical indications in line with i-refer must be individually justified by a practitioner.*

Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Another imaging modality/technique is more appropriate • Pre examination checks not adequate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A
Pre-procedural/ Preparation	• Consent completed with the patient • Bloods checked =- INR • Monitor the patient's heart rate, respiratory rate and blood pressure • PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Specified by the radiologist
Centering point	Specified by the radiologist

Scan Range	1. AP Scout Abdomen/Pelvis 2. Lateral Scout Abdomen/Pelvis 3. Small range over the area of interest – as specified by the radiologist 4. Repeated range as per the radiologist when required
IV and Oral Contrast	If required by the radiologist – radiographers will be informed
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout kV – 120 mA – 20 2. Lateral Scout kV – 120 mA – 20 3. Drainage range if in the abdomen Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 120 – Max 560) Noise Index – 38 4. Drainage range if in the chest Rotation Speed – 0.5s Type – Helical Slice Thickness – 1.25mm kV – 120 Smart mA Used (Min 50 – Max 450) Noise Index – 40

Reformats	Axial – Standard / ASIR 50 / 1.25mm
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where ‘significant over exposure’ may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)

Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
Signature & Date	This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record. Hardcopy Versions of this document must be accompanied by the document details report from QPulse.

Femoral Pseudo-Aneurysm	
E-Vetting and CRIS Code	? Femoral Pseudo-Aneurysm CART
Clinical indications allowing justification / Authorisation	• *?* Femoral Pseudo-Aneurysm *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate • Previous contrast allergy .
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist). Operators (Radiographers & pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director of the Imaging Business Unit acts as Practitioner for the authorised examinations.
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A

Pre-procedural/ Preparation	• PATIENTCheck • Correct cannula in situ and working • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	All CT Scan rooms
Patient Position	Supine / Feet First / Arms raised above head if possible. If a patient struggles to raise arms above their head, it is preferable to lower them in the iso centre but keep arms up. Patients should only keep their arms down if they cannot physically raise them.
Centering point	Vertical light to xiphisternum, horizontal light to middle of body.
Scan Range	1. AP Scout Iliac Crest to Mid-Thigh 2. Lateral Scout Iliac Crest to Mid-Thigh 3. Arterial Iliac Crest to Mid-Thigh with Smartprep
IV and Oral Contrast	Omnipaque 300 – 100ml at 4ml/s Oral preparation as specified by the radiologist
Scan delay	1. N/A 2. N/A 3. Smart Prep (in the abdominal aorta) with auto minimum delay 4. N/A
Scan Parameters	1. AP Scout Iliac Crest to Mid-Thigh kV – 120 mA – 20 2. Lateral Scout Iliac Crest to Mid-Thigh kV – 120 mA – 20 3. Arterial Iliac Crest to Mid-Thigh Rotation Speed – 0.6s

	Type – Helical Slice Thickness – 0.625mm kV – 100 Smart mA Used (Min 100 – Max 480) Noise Index – 50
Reformats	Coronal – Standard filter/ ASIR 20 / 3mm (Completed on a 1024x1024 matrix) Sagittal – Standard filter/ ASIR 20 / 3mm (Completed on a 1024x1024 matrix) Axial – Standard filter / ASIR 50 / 5mm (Abdomen Pelvis) *MAR reformats may be created additionally if required*
Aftercare	Outpatients are kept in the department for 15 minutes to ensure no delayed contrast reaction. The cannula is removed after 15 minutes, and then the patient can change and leave. Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified.

	Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
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MAKO / RACER Pelvis	
E-Vetting and CRIS Code	MAKO/RACER Pelvis - THA CPELV
Clinical indications allowing justification / Authorisation	• MAKO THR *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist).
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A

Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	CT03 only
Patient Position	Supine / Feet First / Arms raised above head if possible. Position patient to minimize pelvic obliquity through the following measures: - Align both ankles and both knees - Ensure patient is in true supine position by palpating the anterior superior iliac spines and comparing relative height above the CT scanner bed - Align longitudinal axis of the body with longitudinal axis of CT scanning bed. (No rod required)
Centering point	Vertical light to iliac crests, horizontal light to middle of body.
Scan Range	1. AP Scout Pelvis to Proximal Tib/Fib 2. Lateral Scout Pelvis to Proximal Tib/Fib 3. Unenhanced Pelvis & Proximal Femur a. Scan includes the **entire** bi-lateral pelvis (Medial/ Lateral/Anterior/Posterior/Superior) and at least 180mm below the lesser trochanter on the femur 4. Unenhanced Knees a. Scan includes bilateral knee - joint lines between femur and tibia and 10cm proximal to joint line on femur **Images will be rejected by MAKO if the crests are not scanned in their entirety, so please ensure top of crests is included.**
IV and Oral Contrast	N/A
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Pelvis to Proximal Tib/Fib kV – 12 mA – 20 2. Lateral Scout Pelvis to Proximal Tib/Fib

	kV – 120 mA – 40 3. Unenhanced Pelvis & Proximal Femur Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 400) Noise Index – 50 4. Unenhanced Knees Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 75 – Max 400) Noise Index – 50 **FOV SHOULD NOT EXCEED 50CM**
Reformats	Axial only
Post Scan	Immediately after the scan inform the PACS team that a MAKO scan has been performed and they will ensure the images are sent to the MAKO team.
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the

	referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales. For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
Reporting	Images will be reported by UHDB Radiologist, radiology registrar or be out-sourced for reporting.
Overexposure	Examinations breaching the DRL without obvious cause should be escalated to the senior Radiographer on duty for local investigation. Such investigations are only formally documented if a cause for concern is identified. Where 'significant over exposure' may have occurred, a DATIX incident report should be completed. Please see Imaging procedure for Radiation Incidents and Trust Incident Investigation Policy. (Please see CQC Significant Overexposure Guidance – June 2019)
Error Reporting	Radiographers have a professional duty to be open about errors. When a significant error is identified whist the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed. If the patient has left the department, a DATIX incident report should be completed and the referrer contacted. Referrers should be informed of the error and advised of their responsibility to inform the patient and apologise on behalf of the Trust. The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.
Basis for Practice	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways

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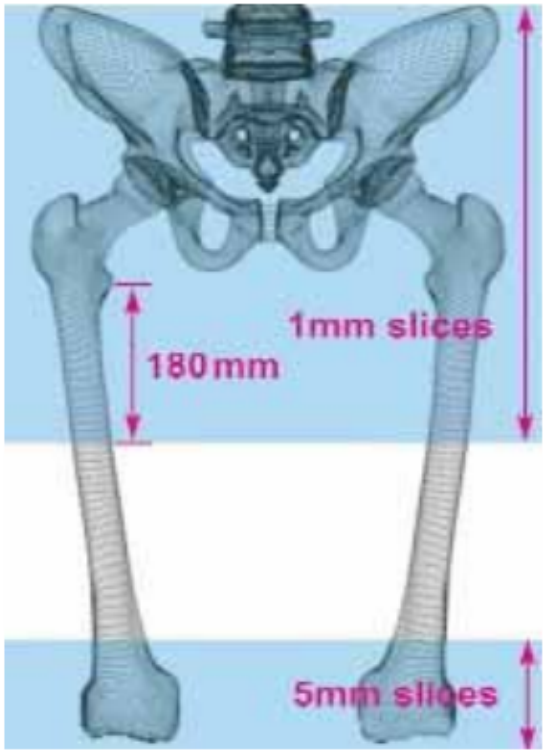
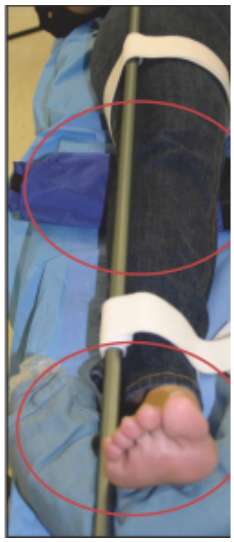


Figure 1. Scan Location and Characteristics

FOV should not exceed 500 mm

MAKO Knee	
E-Vetting and CRIS Code	MAKO Knee - TKA CKNEL or CKNER
Clinical indications allowing justification / Authorisation	• MAKO TKR *Other clinical indications in line with i-refer must be individually justified by a practitioner.*
Contraindications	• Patient unable to cooperate with examination requirements. • Patient does not consent or withdraws consent. • Relevant recent imaging which excludes the suspected pathology and no change in clinical history • Another imaging modality/technique is more appropriate
Justification / Authorisation	Requests must be Justified by a Practitioner (Radiologist).
Protocolling	Examinations are performed in accordance with this standard protocol.
Consent	Patients attending for examination are considered to have consented to it being performed. The patient must be given information about the procedure, its risks and what is required of them. In most cases this will be via the provision of the returnable leaflet. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
Radiation Risk National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: Low Risk - 1 in 10,000 – 1 in 1,000
National Diagnostic Reference Level	N/A

Pre-procedural/ Preparation	• PATIENTCheck • Changed into a gown, ensuring no metal items are worn. • Position the patient correctly on the scan table • Select correct patient and protocol on the CT scanner
Room Used	CT03 only
Patient Position	Supine / Feet First / Arms raised above head if possible. To make the patient as comfortable as possible use rolled up blankets to secure the foot in an upright position. Elevate the knee of the patient slightly with a rolled towel or blanket to ensure patient is motionless for the scan. **If** metal components are present in the non-operative leg (e.g. knee components), attempt to isolate the non-operative leg from the scan region to avoid metal artefact. Do this by moving the non operative leg to the side as much as possible. **Rod Position:** Set the Motion Rod on the patient to pass laterally from just proximal of Hip Centre to distal of Ankle Centre as shown here the motion rod must be visible on ALL acquired images: 
Centering point	Vertical light to iliac crests, horizontal light to middle of body.
Scan Range	1. AP Scout Pelvis to Foot 2. Lateral Scout Pelvis to Foot 3. Unenhanced Hip ○ Include entire femoral head and motion rod. Centre around femoral head.

	4. Unenhanced Knee ○ Include distal boundary of tibial tuberosity, entire patellofemoral region and motion rod Centre around joint line. 5. Unenhanced Ankle ○ Include medial and lateral malleoli, centre around ankle joint. **Images will be rejected by MAKO if the crests are not scanned in their entirety, so please ensure top of crests is included.**
IV and Oral Contrast	N/A
Scan delay	N/A for all scan ranges
Scan Parameters	1. AP Scout Pelvis to Foot kV – 12 mA – 20 2. Lateral Scout Pelvis to Foot kV – 120 mA – 40 3. Unenhanced Hip Rotation Speed – 0.7s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 80 – Max 400) Noise Index – 50 **FOV Do not exceed 500 mm** 4. Unenhanced Knee Rotation Speed – 1.0s Type – Helical

	Slice Thickness – 0.625mm kV – 120 Smart mA Used (Min 75 – Max 400) Noise Index – 50 **FOV Do not exceed 250 mm** 5. Unenhanced Ankle Rotation Speed – 1.0s Type – Helical Slice Thickness – 0.625mm kV – 120 Smart mA Used 65 Noise Index – 50 **FOV Do not exceed 500 mm** The FOV is set on the scanner- **DO NOT ALTER**.
Reformats	Axial only
Post Scan	Immediately after the scan inform the PACS team that a MAKO scan has been performed and they will ensure the images are sent to the MAKO team.
Aftercare	Outpatients are sent to get changed and can then leave the department Inpatients are checked they are feeling well before being sent back to the ward.
Results	For outpatients, results will be provided to the patient by the referrer. Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales.

	For inpatients, reports will be sent electronically to the wards. Imaging non-medical staff should not discuss results or potential treatment with patients. In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
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