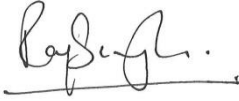




**Division of Cancer, Diagnostics & Support Services**  
**Imaging Business Unit Procedure for**  
**‘Interventional’ Radiographic Examinations.**



**Referral Guidelines, Authorisation and**  
**Justification Criteria**

<b>Reference Number:</b> IR 99	<b>Version Number</b> 1.2		<b>Status:</b> Active	<b>Document Owner:</b> See QPulse 'document records' for electronic signature  <b>Job Title:</b> Clinical Director – Imaging
<b>Version / Amendment History</b>	<b>Version</b>	<b>Date</b>	<b>Author &amp; Role</b>	<b>Reason</b>
	1.0	December 2021	Robert Whiteman - Superintendent: Fluoroscopy & Interventional (RDH);  Rebecca Ward - Superintendent: Fluoroscopy & Interventional (QHB);	First QPulse archived version
	1.1	31 <sup>st</sup> May 2022	Emma Lawson Superintendent for Ionizing Radiation	Addition of Permacath & Tenchoff protocol.  Update of Clinical Director signatures.
	1.2	19 <sup>th</sup> June 2023	Huw Thomas Lead Radiographer for Non-Medical Referrals, Imaging compliance team.	Annual review, change to electronic signoff via QPulse
<b>Intended Recipients – Essential to Role</b>  Operators & Practitioners  ACD Fluoroscopy & Interventional  CD – Imaging  Chair Trust RPG			<b>Intended Recipients – For Awareness / Reference</b>  Referrers	
<b>Communication:</b>  Emails via QPulse to Operators and Practitioners working under this protocol.  Referrers are notified of the protocol and its location by letter,			<b>Training:</b>  Operators and Practitioners receive training on this protocol and other IRMER Procedures.	

Available on QPulse,		
<b>To be Read in Conjunction with:</b> 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.		
<b>Groups &amp; Stakeholders Consulted</b> General Manager Clinical Director Key Referrers		<b>Equality Impact Risk Assessment</b> <b>Stage 1:</b> Completed <b>Stage 2:</b> N/A
<b>Approving Groups:</b> Fluoroscopy & Interventional Medical Exposures Committee, Imaging PQRS, Radiology Advisory Group		
<b>Authorising Committee:</b> 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.		
<b>Imaging BU Sign- Off:</b> <div style="display: flex; justify-content: space-around; align-items: flex-start; margin-top: 20px;"> <div style="text-align: center;">   Dr R Singh: Clinical Director  31/05/2022 </div> <div style="text-align: center;">   Dr R Kirke: Clinical Director  31/05/2022 </div> </div> <div style="margin-top: 20px;">   Mr David Tipper  General Manager: Imaging and Lead Radiographer  01/12/21 </div>		
<b>Divisional Sign-Off:</b>  <b>Protocols approved by the Trust Radiation Protection Group</b>		
Active from: 01/12/21	Review Frequency: Annual	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.		



## Index

Introduction:		4
Index of Protocols:		Page:
IR 01	Angiogram	6
IR 02	Fistulagram	10
IR 03	Hysterosalpingogram (HSG)	13
IR 04	Nephrostomy Insertion/Change, Ureteric Stent Insertion, PCNL	16
IR 05	Sailogram	19
IR 06	Biliary Intervention +/- Stenting +/- External Drain	22
IR 07	Gastrointestinal Intervention +/- NG/NJ Tube +/- Stent +/- Drain	25
IR 08	Line Insertions (inc. Hickman, PICC, Portacath, Dialysis etc)	28
IR 09	Lumbar Puncture	31
IR 10	Permacath & Tenchoff	34

# Examination Protocols: ‘Interventional’ 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 patients’ 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 be 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

These guidelines are designed to assist the operator in decision making when authorising referrals.

Examination requests meeting the criteria listed in this protocol may be authorised by the operator. All examinations authorised by the 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 the operator. 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 not meeting the criteria listed in the protocol 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 interventional radiographic 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.

<b>Ref: IR01</b>	<b>Review Due:</b> Annual - Please see QPulse Active until replaced	<b>Document Owner:</b> Clinical Director – Imaging Please see QPulse
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<b>Examination</b>	Angiogram +/-plasty, +/-stent(s) +/-stent graft(s) +/- embolization +/- thrombectomy +/-thrombolysis +/-TIPS stents, IVC/SVC Work
<b>Description</b>	Interventional Procedure to assess +/- treat arteries
<b>Clinical Indications allowing Justification / Authorisation</b>	<ul style="list-style-type: none"> <li>○ As per iRefer guidelines</li> </ul>
<b>Information relevant to, but insufficient to allow Justification / Authorisation</b>	Specialist referral, research, Radiologist recommendation, 'non-medical examination for example 'medico-legal' reasons.
<b>Contraindications</b>	Allergy to Iodine and associated medications needed 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
<b>Justification / Authorisation</b>	Justification is by any Practitioner appropriately trained and working as an Interventional Radiologist.
<b>Protocolling</b>	Examinations are performed in accordance with this standard protocol.
<b>Consent</b>	Patients are consented as per "Interventional Radiology - How to Request - Clinical Guidelines" available via Koha
<b>Radiation Risk</b> National Radiological Protection Board Risk Category	<p>Lifetime additional risk of cancer per examination:</p> <ul style="list-style-type: none"> <li>• PHE Descriptor Femoral Angiogram: <b>Low Risk (less than 1 in 1,000)</b>. This represents a very small addition [0.02%] to the 1 in 3 chance we all have of getting cancer.</li> <li>• PHE Descriptor Pelvic Angiogram: PHE Descriptor Femoral Angiogram: <b>Low Risk (less than 1 in 1,000)</b>. This represents a very small addition [0.021%] to the 1 in 3 chance we all have of getting cancer.</li> <li>• <b>Low Risk (less than 1 in 1000)</b>. This represents a very small addition [0.025%] to the 1 in 3 chance we all have of getting cancer.</li> </ul>
<b>Pre-procedure / preparation</b>	<p>As per :</p> <ul style="list-style-type: none"> <li>• "Interventional Radiology - How to Request - Clinical Guidelines"</li> <li>• "Interventional Radiology - Antibiotic Guidelines"</li> <li>• "Alteplase (rt-PA) for Pulse Spray Thrombolysis (Angiojet Technique) - Radiology Drug Monograph"</li> </ul>

	<ul style="list-style-type: none"> <li>• “Intra-arterial Thombolysis - Alteplase (rt-PA) - Clinical Guideline”</li> <li>• “Apixaban: Bleeding, Surgery and Overdose - Clinical Guidelines”</li> <li>• “Rivaroxaban: Bleeding, Surgery and Overdose - Clinical Guidelines”</li> <li>• “Coagulation and Clotting Range - Interventional Radiology - Clinical Guideline”</li> <li>• “Fasting Prior to Regional and General Anaesthesia, and Sedation - Adults and Children - Clinical Guidelines”</li> <li>• “Gastro Intestinal Bleed (Upper) - Interventional Radiology - Clinical Guidelines”</li> </ul> <p>All available via Koha</p>
<b>Interventional Radiology Departmental Preparation</b>	<p>In addition to the guidelines above:</p> <ul style="list-style-type: none"> <li>• The Basics of Interventional Radiology (IR)</li> <li>• Intervention Procedure Booklet</li> <li>• PATIENTCheck and STOP Moment as per QPulse documents</li> </ul>
<b>Machine Settings</b>	<p>Fluoroscopy - FluoroFlavor 1*</p> <p>Acquisition:</p> <ul style="list-style-type: none"> <li>• Abdominal procedures – 3fps*</li> <li>• Iliac procedures – 2fps*</li> <li>• Peripheral procedures – 1fps*</li> </ul> <p>*however specific clinical cases may necessitate changes by performing practitioner</p>
<b>Patient Position</b>	Supine
<b>Standard Examination</b>	Diagnostic and post intervention fluoroscopy grabs or Digital Subtraction Angiography (DSA) acquisitions
<b>Comment</b>	As per MDT discussion / requesting clinician of parent team
<b>Aftercare</b>	As per detailed in aftercare instructions available in patient notes
<b>Results</b>	<p>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. Imaging non-medical staff should not discuss results or potential treatment with patients.</p> <p>In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist / Performing Practitioner will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.</p> <p>If the patient is a GP referral, they should ideally wait whilst Images are reported. The Radiologist / Performing Practitioner will escalate urgent results to the referrer. The Radiologist / Performing Practitioner will advise on changes to when patients should seek their results.</p>
<b>Image Archive</b>	Ensure required Images transfer into the correct record on PACS. Rejected Images should not be archived.



<b>Rejected Images</b>	Non diagnostic / unrequired images will not be sent to PACS																																
<b>Reporting</b>	Images will be reported by performing UHDB Radiologist																																
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<b>Diagnostic Reference Level</b>	<table border="1"> <thead> <tr> <th>Exam</th> <th>Local DRL Dose (mGycm2)</th> <th>National DRL Screening Time (mins)</th> <th>Local DRL Dose (mGycm2)</th> </tr> </thead> <tbody> <tr> <td>Pelvic Angio</td> <td>168895</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Unilateral Femoral Angio</td> <td>24551</td> <td>5.9</td> <td>56000</td> </tr> <tr> <td>Aorto-Femoral Angio</td> <td>29123</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Mesenteric Angio</td> <td>168044</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>PAE</td> <td>219536</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Embolisation (generic)</td> <td>18598</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>IVC Filter Removal</td> <td>22266</td> <td>N/A</td> <td>N/A</td> </tr> </tbody> </table> <p>NB there is no specific National DRL for any other angiogram or venogram.</p>	Exam	Local DRL Dose (mGycm2)	National DRL Screening Time (mins)	Local DRL Dose (mGycm2)	Pelvic Angio	168895	N/A	N/A	Unilateral Femoral Angio	24551	5.9	56000	Aorto-Femoral Angio	29123	N/A	N/A	Mesenteric Angio	168044	N/A	N/A	PAE	219536	N/A	N/A	Embolisation (generic)	18598	N/A	N/A	IVC Filter Removal	22266	N/A	N/A
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<b>Overexposure</b>	Examinations breaching the DRL without obvious cause should be regarded as an incident and a DATIX incident report should be completed. Such incidents should be escalated to the senior Radiographer on duty for local investigation. Please see Imaging employer's procedure for Radiation Incidents and Trust Incident Investigation Policy.																																
<b>Error Reporting</b>	Radiographers have a professional duty to be open about errors. When a significant error is identified whilst 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.																																
<b>Basis for Practice</b>	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways																																
<b>Signature &amp; Date</b>	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																																

<b>Ref: IR02</b>	<b>Review Due:</b> Annual - Please see QPulse Active until replaced	<b>Document Owner:</b> Clinical Director – Imaging Please see QPulse
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<b>Examination</b>	Fistulagram +/-plasty, +/-stent(s) +/-stent graft(s)
<b>Description</b>	Interventional Procedure to assess +/- treat arterial-venous fistulas
<b>Clinical Indications allowing Justification / Authorisation</b>	<ul style="list-style-type: none"> <li>○ As per iRefer guidelines</li> </ul>
<b>Information relevant to, but insufficient to allow Justification / Authorisation</b>	Specialist referral, research, Radiologist recommendation, 'non-medical examination for example 'medico-legal' reasons.
<b>Contraindications</b>	Allergy to Iodine and associated medications needed 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
<b>Justification / Authorisation</b>	Justification is by any Practitioner appropriately trained and working as an Interventional Radiologist.
<b>Protocolling</b>	Examinations are performed in accordance with this standard protocol.
<b>Consent</b>	Patients are consented as per "Interventional Radiology - How to Request - Clinical Guidelines" available via Koha
<b>Radiation Risk</b> National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: <b>PHE Descriptor: Very Low Risk (less than 1 in 10,000)</b> This represents a very small addition [0.013%] to the 1 in 3 chance we all have of getting cancer
<b>Pre-procedure / preparation</b>	As per : <ul style="list-style-type: none"> <li>• "Interventional Radiology - How to Request - Clinical Guidelines"</li> <li>• "Interventional Radiology - Antibiotic Guidelines"</li> <li>• "Alteplase (rt-PA) for Pulse Spray Thrombolysis (Angiojet Technique) - Radiology Drug Monograph"</li> <li>• "Intra-arterial Thombolysis - Alteplase (rt-PA) - Clinical Guideline"</li> <li>• "Apixaban: Bleeding, Surgery and Overdose - Clinical Guidelines"</li> <li>• "Rivaroxaban: Bleeding, Surgery and Overdose - Clinical Guidelines"</li> <li>• "Coagulation and Clotting Range - Interventional Radiology - Clinical Guideline"</li> </ul>

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<b>Interventional Radiology Departmental Preparation</b>	<p>In addition to the guidelines above:</p> <ul style="list-style-type: none"> <li>• The Basics of Interventional Radiology (IR)</li> <li>• Intervention Procedure Booklet</li> <li>• PATIENTCheck and STOP Moment as per QPulse documents</li> </ul>
<b>Machine Settings</b>	<p>Fluoroscopy: FluoroFlavor 1*  Acquisition: 1-3fps*  *however specific clinical cases may necessitate changes by performing practitioner</p>
<b>Patient Position</b>	Supine
<b>Standard Examination</b>	Diagnostic and post intervention fluoroscopy grabs or Digital Subtraction Angiography (DSA) acquisitions
<b>Comment</b>	As per MDT discussion / requesting clinician of parent team
<b>Aftercare</b>	As per detailed in aftercare instructions available in patient notes
<b>Results</b>	<p>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. 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 / Performing Practitioner will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate. If the patient is a GP referral, they should ideally wait whilst Images are reported. The Radiologist / Performing Practitioner will escalate urgent results to the referrer. The Radiologist / Performing Practitioner will advise on changes to when patients should seek their results.</p>
<b>Image Archive</b>	Ensure required Images transfer into the correct record on PACS. Rejected Images should not be archived.
<b>Rejected Images</b>	Non diagnostic / unrequired images will not be sent to PACS
<b>Reporting</b>	Images will be reported by performing UHDB Radiologist
<b>Dose Recording</b>	Operators must record the patient’s dose on CRIS, as specified by the employer’s procedures.

<b>Diagnostic Reference Level</b>	<table border="1"> <thead> <tr> <th data-bbox="608 188 794 248">Exam</th> <th data-bbox="794 188 999 248">Local DRL Dose (mGycm<sup>2</sup>)</th> <th data-bbox="999 188 1214 248">National DRL Screening Time (mins)</th> <th data-bbox="1214 188 1417 248">Local DRL Dose (mGycm<sup>2</sup>)</th> </tr> </thead> <tbody> <tr> <td data-bbox="608 248 794 277">Fistulagram</td> <td data-bbox="794 248 999 277">2408</td> <td data-bbox="999 248 1214 277">6.7</td> <td data-bbox="1214 248 1417 277">8000</td> </tr> <tr> <td data-bbox="608 277 794 306">Fistuloplasty</td> <td data-bbox="794 277 999 306">12125</td> <td data-bbox="999 277 1214 306">N/A</td> <td data-bbox="1214 277 1417 306">N/A</td> </tr> </tbody> </table>	Exam	Local DRL Dose (mGycm <sup>2</sup> )	National DRL Screening Time (mins)	Local DRL Dose (mGycm <sup>2</sup> )	Fistulagram	2408	6.7	8000	Fistuloplasty	12125	N/A	N/A
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Fistulagram	2408	6.7	8000										
Fistuloplasty	12125	N/A	N/A										
<b>Overexposure</b>	<p>Examinations breaching the DRL without obvious cause should be regarded as an incident and a DATIX incident report should be completed. Such incidents should be escalated to the senior Radiographer on duty for local investigation.</p> <p>Please see Imaging employer's procedure for Radiation Incidents and Trust Incident Investigation Policy.</p>												
<b>Error Reporting</b>	<p>Radiographers have a professional duty to be open about errors. When a significant error is identified whilst the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed.</p> <p>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.</p> <p>The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.</p>												
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<b>Ref: IR03</b>	<b>Review Due:</b> Annual - Please see QPulse Active until replaced	<b>Document Owner:</b> Clinical Director – Imaging Please see QPulse
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<b>Examination</b>	Hysterosalpingogram (HSG)
<b>Description</b>	Diagnostic test of female fertility
<b>Clinical Indications allowing Justification / Authorisation</b>	<ul style="list-style-type: none"> <li>○ Primary Infertility</li> <li>○ Primary Subfertility</li> <li>○ Secondary Infertility</li> <li>○ Secondary Subfertility</li> <li>○ Reversal of Sterilisation</li> <li>○ ? Tube Patency</li> <li>○ Previous ectopic pregnancy</li> <li>○ ? Uterine anatomy</li> <li>○ ? success of sterilisation</li> <li>○ As per iRefer guidelines</li> </ul> <p>NB: If the patient has had a HSG in the previous 12 months, the request must go to a Radiologist for Justification, regardless of the clinical information provided.</p>
<b>Information relevant to, but insufficient to allow Justification / Authorisation</b>	Specialist referral, research, Radiologist recommendation, 'non-medical examination for example 'medico-legal' reasons.
<b>Contraindications</b>	<p>Allergy to Iodine</p> <p>Patient unable to cooperate with examination requirements.</p> <p>Patient does not consent or withdraws consent.</p> <p>Relevant recent imaging which excludes the suspected pathology and no change in clinical history.</p> <p>Another Imaging modality / technique is more appropriate</p>
<b>Justification / Authorisation</b>	<p>Requests must be Justified by a Practitioner.</p> <p>Operators (Radiographers, pre FRCR Radiologists and Radiology Nurses who have completed the appropriate training course and are Entitled as Operators) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director for the Imaging Business Unit is the Practitioner for all authorised examinations. Requests with other clinical indications, not listed above but included in the Royal College of Radiologists iRefer guidelines, must be Justified on a case by case basis by a Practitioner.</p>
<b>Protocolling</b>	Examinations are performed in accordance with this standard protocol.
<b>Consent</b>	Patients are consented as per "Interventional Radiology - How to Request - Clinical Guidelines" available via Koha

<b>Radiation Risk</b> National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: PHE Descriptor: <b>Minimal Risk (less than 1 in 100,000)</b> This represents a very small addition [0.0017%] to the 1 in 3 chance we all have of getting cancer
<b>Pre-procedure preparation</b>	As per : <ul style="list-style-type: none"> <li>Negative Chlamydia test (following NICE guidelines for instrumentation) ideally within 3 months of examination</li> <li>“Interventional Radiology - How to Request - Clinical Guidelines” available via Koha.</li> </ul>
<b>Interventional Radiology Departmental Preparation</b>	In addition to the guidelines above: <ul style="list-style-type: none"> <li>Trolley preparation as per the locally held guideline in IR prep rooms</li> <li>The Basics of Interventional Radiology (IR)</li> <li>Intervention Procedure Booklet</li> <li>PATIENTCheck and STOP Moment as per QPulse documents</li> </ul>
<b>Machine Settings</b>	Fluoroscopy - FluoroFlavor 1* Acquisition: Abdominal Single Shot *however specific clinical cases may necessitate changes by performing practitioner
<b>Patient Position</b>	Supine
<b>Standard Examination</b>	Diagnostic and post intervention fluoroscopy grabs and/or digital acquisitions
<b>Comment</b>	As per Fertility Unit Request
<b>Aftercare</b>	Non specific
<b>Results</b>	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. 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 / Performing Practitioner will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate. If the patient is a GP referral, they should ideally wait whilst Images are reported. The Radiologist / Performing Practitioner will escalate urgent results to the referrer. The Radiologist / Performing Practitioner will advise on changes to when patients should seek their results.
<b>Image Archive</b>	Ensure required Images transfer into the correct record on PACS. Rejected Images should not be archived.
<b>Rejected Images</b>	Non diagnostic / unrequired images will not be sent to PACS
<b>Reporting</b>	Images will be reported by performing UHDB Radiologist

<b>Dose Recording</b>	Operators must record the patient's dose on CRIS, as specified by the employer's procedures.
<b>Diagnostic Reference Level</b>	<ul style="list-style-type: none"> <li>• National DRL for 0.7 minutes screening time and 2000mGycm<sup>2</sup></li> <li>• Local DRL is 874 mGycm<sup>2</sup></li> </ul>
<b>Overexposure</b>	Examinations breaching the DRL without obvious cause should be regarded as an incident and a DATIX incident report should be completed. Such incidents should be escalated to the senior Radiographer on duty for local investigation. Please see Imaging employer's procedure for Radiation Incidents and Trust Incident Investigation Policy.
<b>Error Reporting</b>	Radiographers have a professional duty to be open about errors. When a significant error is identified whilst 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.
<b>Basis for Practice</b>	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
<b>Signature &amp; Date</b>	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

<b>Ref: IR04</b>	<b>Review Due:</b> Annual - Please see QPulse Active until replaced	<b>Document Owner:</b> Clinical Director – Imaging Please see QPulse
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<b>Examination</b>	Nephrostomy Insertion/Change, Ureteric Stent Insertion, PCNL
<b>Description</b>	Diagnostic and therapeutic intervention of the urinary system
<b>Clinical Indications allowing Justification / Authorisation</b>	<ul style="list-style-type: none"> <li>○ As per iRefer guidelines</li> </ul>
<b>Information relevant to, but insufficient to allow Justification / Authorisation</b>	Specialist referral, research, Radiologist recommendation, 'non-medical examination for example 'medico-legal' reasons.
<b>Contraindications</b>	Allergy to Iodine 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
<b>Justification / Authorisation</b>	Justification is by any Practitioner appropriately trained and working as an Interventional Radiologist.
<b>Protocolling</b>	Examinations are performed in accordance with this standard protocol.
<b>Consent</b>	Patients are consented as per "Interventional Radiology - How to Request - Clinical Guidelines" available via Koha
<b>Radiation Risk</b> National Radiological Protection Board Risk Category	<p>Lifetime additional risk of cancer per examination: PHE Descriptor:</p> <ul style="list-style-type: none"> <li>• Ureteric Stent <b>Low Risk (less than 1 in 1,000)</b> This represents a very small addition [0.025%] to the 1 in 3 chance we all have of getting cancer</li> <li>• Nephrostomy Insertion <b>Very Low Risk (less than 1 in 10,000)</b> This represents a very small addition [0.007%] to the 1 in 3 chance we all have of getting cancer</li> <li>• Nephrostomy Change <b>Very Low Risk (less than 1 in 10,000)</b> This represents a very small addition [0.0025%] to the 1 in 3 chance we all have of getting cancer</li> </ul>
<b>Pre-procedure preparation</b>	<p>As per :</p> <ul style="list-style-type: none"> <li>• "Interventional Radiology - How to Request - Clinical Guidelines"</li> <li>• "Interventional Radiology - Antibiotic Guidelines"</li> <li>• "Apixaban: Bleeding, Surgery and Overdose - Clinical Guidelines"</li> <li>• "Rivaroxaban: Bleeding, Surgery and Overdose - Clinical Guidelines"</li> </ul>



	<ul style="list-style-type: none"> <li>• “Coagulation and Clotting Range - Interventional Radiology - Clinical Guideline”</li> <li>• “Fasting Prior to Regional and General Anaesthesia, and Sedation - Adults and Children - Clinical Guidelines”</li> </ul> <p>All available via Koha</p>																
<b>Interventional Radiology Departmental Preparation</b>	<p>In addition to the guidelines above:</p> <ul style="list-style-type: none"> <li>• The Basics of Interventional Radiology (IR)</li> <li>• Intervention Procedure Booklet</li> <li>• PATIENTCheck and STOP Moment as per QPulse documents</li> </ul>																
<b>Machine Settings</b>	<p>Fluoroscopy - FluoroFlavor 1*</p> <p>Acquisition: Abdominal Single Shot</p> <p>*however specific clinical cases may necessitate changes by performing practitioner</p>																
<b>Patient Position</b>	Supine																
<b>Standard Examination</b>	Diagnostic and post intervention fluoroscopy grabs and/or digital acquisitions																
<b>Comment</b>	Nephrostomy changes require 3 monthly changes																
<b>Aftercare</b>	Non specific																
<b>Results</b>	<p>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. 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 / Performing Practitioner will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.</p>																
<b>Image Archive</b>	Ensure required Images transfer into the correct record on PACS. Rejected Images should not be archived.																
<b>Rejected Images</b>	Non diagnostic / unrequired images will not be sent to PACS																
<b>Reporting</b>	Images will be reported by performing UHDB Radiologist																
<b>Dose Recording</b>	Operators must record the patient’s dose on CRIS, as specified by the employer’s procedures.																
<b>Diagnostic Reference Level</b>	<table border="1"> <thead> <tr> <th>Exam</th> <th>Local DRL Dose (mGycm2)</th> <th>National DRL Screening Time (mins)</th> <th>Local DRL Dose (mGycm2)</th> </tr> </thead> <tbody> <tr> <td>Nephrostomy</td> <td>3095</td> <td>6.7 minutes</td> <td>13000mGycm2</td> </tr> <tr> <td>Nephrostogram</td> <td>1069</td> <td>3.9 minutes</td> <td>9000 Gycm2</td> </tr> <tr> <td>Neph Change</td> <td>706</td> <td>N/A</td> <td>N/A</td> </tr> </tbody> </table>	Exam	Local DRL Dose (mGycm2)	National DRL Screening Time (mins)	Local DRL Dose (mGycm2)	Nephrostomy	3095	6.7 minutes	13000mGycm2	Nephrostogram	1069	3.9 minutes	9000 Gycm2	Neph Change	706	N/A	N/A
Exam	Local DRL Dose (mGycm2)	National DRL Screening Time (mins)	Local DRL Dose (mGycm2)														
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Neph Change	706	N/A	N/A														

	<table border="1"> <tr> <td>Neph Removal</td> <td>712</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Urethrogram</td> <td>4350</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Cystogram</td> <td>2375</td> <td>N/A</td> <td>N/A</td> </tr> </table> <p>NB there is no specific National DRL ureteric stent or PCNL work, however we will produce local DRLs in due course using DoseWatch data</p>	Neph Removal	712	N/A	N/A	Urethrogram	4350	N/A	N/A	Cystogram	2375	N/A	N/A
Neph Removal	712	N/A	N/A										
Urethrogram	4350	N/A	N/A										
Cystogram	2375	N/A	N/A										
<b>Overexposure</b>	<p>Examinations breaching the DRL without obvious cause should be regarded as an incident and a DATIX incident report should be completed. Such incidents should be escalated to the senior Radiographer on duty for local investigation.</p> <p>Please see Imaging employer's procedure for Radiation Incidents and Trust Incident Investigation Policy.</p>												
<b>Error Reporting</b>	<p>Radiographers have a professional duty to be open about errors. When a significant error is identified whilst the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed.</p> <p>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.</p> <p>The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.</p>												
<b>Basis for Practice</b>	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways												
<b>Signature &amp; Date</b>	<p>This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record.</p> <p>Hardcopy Versions of this document must be accompanied by the document details report from QPulse</p>												

<b>Ref: IR05</b>	<b>Review Due:</b> Annual - Please see QPulse Active until replaced	<b>Document Owner:</b> Clinical Director – Imaging Please see QPulse
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<b>Examination</b>	Sialograms
<b>Description</b>	Diagnostic test of salivary ducts and glands
<b>Clinical Indications allowing Justification / Authorisation</b>	<ul style="list-style-type: none"> <li>○ As per iRefer guidelines</li> </ul>
<b>Information relevant to, but insufficient to allow Justification / Authorisation</b>	Specialist referral, research, Radiologist recommendation, 'non-medical examination for example 'medico-legal' reasons.
<b>Contraindications</b>	Allergy to Iodine 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
<b>Justification / Authorisation</b>	Justification is by any Practitioner appropriately trained and working as an Interventional Radiologist.
<b>Protocolling</b>	Examinations are performed in accordance with this standard protocol.
<b>Consent</b>	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. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
<b>Radiation Risk</b> National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: PHE Descriptor: Sialogram <b>Minimal Risk (less than 1 in 100,000)</b> This represents a very small addition [0.0003%] to the 1 in 3 chance we all have of getting cancer
<b>Pre-procedure preparation</b>	As per : <ul style="list-style-type: none"> <li>• "Interventional Radiology - How to Request - Clinical Guidelines" Available via Koha</li> </ul>
<b>Interventional Radiology Departmental Preparation</b>	In addition to the guidelines above: <ul style="list-style-type: none"> <li>• PATIENTCheck and STOP Moment as per QPulse documents</li> <li>• Radiographer Protocols for Fluoroscopy Radiology</li> </ul>

<b>Machine Settings</b>	Fluoroscopy - FluoroFlavor 1* Acquisition: Neuro Single Shot *however specific clinical cases may necessitate changes by performing practitioner
<b>Patient Position</b>	Supine
<b>Standard Examination</b>	Diagnostic and post intervention fluoroscopy grabs and/or digital acquisitions
<b>Comment</b>	Standard control views prior to case
<b>Aftercare</b>	Non specific
<b>Results</b>	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. 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 / Performing Practitioner will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.
<b>Image Archive</b>	Ensure required Images transfer into the correct record on PACS. Rejected Images should not be archived.
<b>Rejected Images</b>	Non diagnostic / unrequired images will not be sent to PACS
<b>Reporting</b>	Images will be reported by performing UHDB Radiologist
<b>Dose Recording</b>	Operators must record the patient's dose on CRIS, as specified by the employer's procedures.
<b>Diagnostic Reference Level</b>	<ul style="list-style-type: none"> <li>• National DRL for 1.5 minutes screening time and 28000 mGycm<sup>2</sup></li> <li>• Local DRL (parotid) is 625mGycm<sup>2</sup></li> </ul>
<b>Overexposure</b>	Examinations breaching the DRL without obvious cause should be regarded as an incident and a DATIX incident report should be completed. Such incidents should be escalated to the senior Radiographer on duty for local investigation. Please see Imaging employer's procedure for Radiation Incidents and Trust Incident Investigation Policy.
<b>Error Reporting</b>	Radiographers have a professional duty to be open about errors. When a significant error is identified whilst 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.
<b>Basis for Practice</b>	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
<b>Signature &amp; Date</b>	<p>This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record.</p> <p>Hardcopy Versions of this document must be accompanied by the document details report from QPulse</p>

<b>Ref: IR06</b>	<b>Review Due:</b> Annual - Please see QPulse Active until replaced	<b>Document Owner:</b> Clinical Director – Imaging Please see QPulse
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<b>Examination</b>	Biliary intervention +/-stenting +/-external drains
<b>Description</b>	Interventional Procedure to treat biliary pathology
<b>Clinical Indications allowing Justification / Authorisation</b>	<ul style="list-style-type: none"> <li>○ As per iRefer guidelines</li> </ul>
<b>Information relevant to, but insufficient to allow Justification / Authorisation</b>	Specialist referral, research, Radiologist recommendation, 'non-medical examination for example 'medico-legal' reasons.
<b>Contraindications</b>	Allergy to Iodine and associated medications needed 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
<b>Justification / Authorisation</b>	Justification is by any Practitioner appropriately trained and working as an Interventional Radiologist.
<b>Protocolling</b>	Examinations are performed in accordance with this standard protocol.
<b>Consent</b>	Patients are consented as per "Interventional Radiology - How to Request - Clinical Guidelines" available via Koha
<b>Radiation Risk</b> National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: PHE Descriptor: Ureteric Stent <b>Low Risk (less than 1 in 1,000)</b> This represents a very small addition [0.005%] to the 1 in 3 chance we all have of getting cancer
<b>Pre-procedure preparation</b>	As per : <ul style="list-style-type: none"> <li>• "Interventional Radiology - How to Request - Clinical Guidelines"</li> <li>• "Interventional Radiology - Antibiotic Guidelines"</li> <li>• "Apixaban: Bleeding, Surgery and Overdose - Clinical Guidelines"</li> <li>• "Rivaroxaban: Bleeding, Surgery and Overdose - Clinical Guidelines"</li> <li>• "Coagulation and Clotting Range - Interventional Radiology - Clinical Guideline"</li> <li>• "Fasting Prior to Regional and General Anaesthesia, and Sedation - Adults and Children - Clinical Guidelines"</li> </ul> All available via Koha

<b>Interventional Radiology Departmental Preparation</b>	In addition to the guidelines above: <ul style="list-style-type: none"> <li>• Trolley preparation as per the locally held guideline in IR prep rooms</li> <li>• The Basics of Interventional Radiology (IR)</li> <li>• Intervention Procedure Booklet</li> <li>• PATIENTCheck and STOP Moment as per QPulse documents</li> </ul>																
<b>Machine Settings</b>	Fluoroscopy: FluoroFlavor 1* Acquisition: single shot* *however specific clinical cases may necessitate changes by performing practitioner																
<b>Patient Position</b>	Supine																
<b>Standard Examination</b>	Diagnostic and post intervention fluoroscopy grabs or Digital Subtraction Angiography (DSA) or single shot acquisitions																
<b>Comment</b>	As per MDT discussion / requesting clinician of parent team																
<b>Aftercare</b>	As per detailed in aftercare instructions available in patient notes																
<b>Results</b>	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. 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 / Performing Practitioner will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.																
<b>Image Archive</b>	Ensure required Images transfer into the correct record on PACS. Rejected Images should not be archived.																
<b>Rejected Images</b>	Non diagnostic / unrequired images will not be sent to PACS																
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<b>Dose Recording</b>	Operators must record the patient's dose on CRIS, as specified by the employer's procedures.																
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Exam	Local DRL Dose (mGycm2)	National DRL Screening Time (mins)	Local DRL Dose (mGycm2)														
TJLB	10366	N/A	N/A														
PTC	15537	N/A	56000														
Generic National	N/A	14	43000														
<b>Overexposure</b>	Examinations breaching the DRL without obvious cause should be regarded as an incident and a DATIX incident report should be completed. Such incidents should be escalated to the senior Radiographer on duty for local investigation. Please see Imaging employer's procedure for Radiation Incidents and Trust Incident Investigation Policy.																

<p><b>Error Reporting</b></p>	<p>Radiographers have a professional duty to be open about errors. When a significant error is identified whilst the patient is still within the department, they should be told, an apology offered and a DATIX incident form completed.</p> <p>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.</p> <p>The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.</p>
<p><b>Basis for Practice</b></p>	<p>Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways</p>
<p><b>Signature &amp; Date</b></p>	<p>This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record.</p> <p>Hardcopy Versions of this document must be accompanied by the document details report from QPulse</p>



<b>Ref: IR07</b>	<b>Review Due:</b> Annual - Please see QPulse Active until replaced	<b>Document Owner:</b> Clinical Director – Imaging Please see QPulse
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<b>Examination</b>	Gastrointestinal Intervention +/- NG/NJ tube +/-stent +/-drains
<b>Description</b>	Interventional Procedure to treat GI pathology
<b>Clinical Indications allowing Justification / Authorisation</b>	<ul style="list-style-type: none"> <li>○ As per iRefer guidelines</li> </ul>
<b>Information relevant to, but insufficient to allow Justification / Authorisation</b>	Specialist referral, research, Radiologist recommendation, 'non-medical examination for example 'medico-legal' reasons.
<b>Contraindications</b>	Allergy to Iodine and associated medications needed 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
<b>Justification / Authorisation</b>	Justification is by any Practitioner appropriately trained and working as an Interventional Radiologist.
<b>Protocolling</b>	Examinations are performed in accordance with this standard protocol.
<b>Consent</b>	Patients are consented as per "Interventional Radiology - How to Request - Clinical Guidelines" available via Koha
<b>Radiation Risk</b> National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: PHE Descriptor: Nephrostomy Insertion <b>Very Low Risk (less than 1 in 10,000)</b> This represents a very small addition [0.005%] to the 1 in 3 chance we all have of getting cancer
<b>Pre-procedure preparation</b>	As per : <ul style="list-style-type: none"> <li>• "Interventional Radiology - How to Request - Clinical Guidelines"</li> <li>• "Interventional Radiology - Antibiotic Guidelines"</li> <li>• "Apixaban: Bleeding, Surgery and Overdose - Clinical Guidelines"</li> <li>• "Rivaroxaban: Bleeding, Surgery and Overdose - Clinical Guidelines"</li> <li>• "Coagulation and Clotting Range - Interventional Radiology - Clinical Guideline"</li> <li>• "Fasting Prior to Regional and General Anaesthesia, and Sedation - Adults and Children - Clinical Guidelines"</li> </ul> All available via Koha

<b>Interventional Radiology Departmental Preparation</b>	In addition to the guidelines above: <ul style="list-style-type: none"> <li>• The Basics of Interventional Radiology (IR)</li> <li>• Intervention Procedure Booklet</li> <li>• PATIENTCheck and STOP Moment as per QPulse documents</li> </ul>																								
<b>Machine Settings</b>	Fluoroscopy: FluoroFlavor 1* Acquisition: single shot* *however specific clinical cases may necessitate changes by performing practitioner																								
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<b>Results</b>	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. 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 / Performing Practitioner 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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Exam	Local DRL Dose (mGycm2)	National DRL Screening Time (mins)	Local DRL Dose (mGycm2)																						
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NGT	4441	N/A	N/A																						
NJT	14973	N/A	N/A																						
Tubogram	3156	N/A	N/A																						
<b>Overexposure</b>	Examinations breaching the DRL without obvious cause should be regarded as an incident and a DATIX incident report should be																								

	<p>completed. Such incidents should be escalated to the senior Radiographer on duty for local investigation. Please see Imaging employer's procedure for Radiation Incidents and Trust Incident Investigation Policy.</p>
<b>Error Reporting</b>	<p>Radiographers have a professional duty to be open about errors. When a significant error is identified whilst 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.</p>
<b>Basis for Practice</b>	<p>Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways</p>
<b>Signature &amp; Date</b>	<p>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</p>

<b>Ref: IR08</b>	<b>Review Due:</b> Annual - Please see QPulse Active until replaced	<b>Document Owner:</b> Clinical Director – Imaging Please see QPulse
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<b>Examination</b>	Line Insertions (to include Hickman, PICC, portacath, dialysis etc)
<b>Description</b>	Interventional Procedure to insert vascular / dialysis lines
<b>Clinical Indications allowing Justification / Authorisation</b>	<ul style="list-style-type: none"> <li>○ As per iRefer guidelines</li> </ul>
<b>Information relevant to, but insufficient to allow Justification / Authorisation</b>	Specialist referral, research, Radiologist recommendation, 'non-medical examination for example 'medico-legal' reasons.
<b>Contraindications</b>	Allergy to Iodine and associated medications needed 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
<b>Justification / Authorisation</b>	Justification is by any Practitioner appropriately trained and working as an Interventional Radiologist.
<b>Protocolling</b>	Examinations are performed in accordance with this standard protocol.
<b>Consent</b>	Patients are consented as per "Interventional Radiology - How to Request - Clinical Guidelines" available via Koha
<b>Radiation Risk</b> National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: PHE Descriptor: Nephrostomy Insertion <b>Low Risk (less than 1 in 1,000)</b> This represents a very small addition [0.025%] to the 1 in 3 chance we all have of getting cancer
<b>Pre-procedure preparation</b>	As per : <ul style="list-style-type: none"> <li>• "Interventional Radiology - How to Request - Clinical Guidelines"</li> <li>• "Interventional Radiology - Antibiotic Guidelines"</li> <li>• "Apixaban: Bleeding, Surgery and Overdose - Clinical Guidelines"</li> <li>• "Rivaroxaban: Bleeding, Surgery and Overdose - Clinical Guidelines"</li> <li>• "Coagulation and Clotting Range - Interventional Radiology - Clinical Guideline"</li> <li>• "Fasting Prior to Regional and General Anaesthesia, and Sedation - Adults and Children - Clinical Guidelines"</li> </ul> All available via Koha

<b>Interventional Radiology Departmental Preparation</b>	In addition to the guidelines above: <ul style="list-style-type: none"> <li>• The Basics of Interventional Radiology (IR)</li> <li>• Intervention Procedure Booklet</li> <li>• PATIENTCheck and STOP Moment as per QPulse documents</li> </ul>																								
<b>Machine Settings</b>	Fluoroscopy: FluoroFlavor 1* Acquisition: single shot* *however specific clinical cases may necessitate changes by performing practitioner																								
<b>Patient Position</b>	Supine																								
<b>Standard Examination</b>	Diagnostic and post intervention fluoroscopy grabs or Digital Subtraction Angiography (DSA) or single shot acquisitions																								
<b>Comment</b>	As per MDT discussion / requesting clinician of parent team																								
<b>Aftercare</b>	As per detailed in aftercare instructions available in patient notes																								
<b>Results</b>	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. 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 / Performing Practitioner 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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<b>Rejected Images</b>	Non diagnostic / unrequired images will not be sent to PACS																								
<b>Reporting</b>	Images will be reported by performing UHDB Radiologist																								
<b>Dose Recording</b>	Operators must record the patient's dose on CRIS, as specified by the employer's procedures.																								
<b>Diagnostic Reference Level</b>	<table border="1"> <thead> <tr> <th>Exam</th> <th>Local DRL Dose (mGycm2)</th> <th>National DRL Screening Time (mins)</th> <th>Local DRL Dose (mGycm2)</th> </tr> </thead> <tbody> <tr> <td>Peritoneal Catheter</td> <td>676</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>Tunnelled Line</td> <td>904</td> <td>1.5</td> <td>3000</td> </tr> <tr> <td>Permacath</td> <td>126</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>NB there is no specific National DRL for other line insertions.</p>	Exam	Local DRL Dose (mGycm2)	National DRL Screening Time (mins)	Local DRL Dose (mGycm2)	Peritoneal Catheter	676	N/A	N/A	Tunnelled Line	904	1.5	3000	Permacath	126	N/A	N/A								
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<b>Overexposure</b>	Examinations breaching the DRL without obvious cause should be regarded as an incident and a DATIX incident report should be																								

	<p>completed. Such incidents should be escalated to the senior Radiographer on duty for local investigation. Please see Imaging employer's procedure for Radiation Incidents and Trust Incident Investigation Policy.</p>
<b>Error Reporting</b>	<p>Radiographers have a professional duty to be open about errors. When a significant error is identified whilst 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.</p>
<b>Basis for Practice</b>	<p>Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways</p>
<b>Signature &amp; Date</b>	<p>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</p>

<b>Ref: FL09</b>	<b>Review Due:</b> Annual - Please see QPulse Active until replaced	<b>Document Owner:</b> Clinical Director – Imaging Please see QPulse
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<b>Examination</b>	Lumbar Puncture
<b>Description</b>	Examinations to measure Cerebral Spinal Fluid pressure, and obtain samples for analysis
<b>Clinical Indications allowing Justification / Authorisation</b>	<ul style="list-style-type: none"> <li>○ As per iRefer guidelines</li> </ul>
<b>Information relevant to, but insufficient to allow Justification / Authorisation</b>	Specialist referral, research, Radiologist recommendation, 'non-medical examination for example 'medico-legal' reasons.
<b>Contraindications</b>	Allergy to iodinated contrast 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
<b>Justification / Authorisation</b>	Justification is by any Practitioner appropriately trained and working as an Interventional Radiologist.
<b>Protocolling</b>	Examinations are performed in accordance with this standard protocol.
<b>Consent</b>	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. The patient must be given the opportunity to ask questions and asked if they are happy to proceed before the examination begins.
<b>Radiation Risk</b> National Radiological Protection Board Risk Category	Lifetime additional risk of cancer per examination: PHE Descriptor: <b>Very Low Risk (less than 1 in 10,000)</b> This represents a very small addition [0.005%] to the 1 in 3 chance we all have of getting cancer
<b>Pre-procedure preparation</b>	Risk vs benefit information Changed into patient gown Removal of radiopaque items from the area to be examined. NB: To be read in conjunction with Radiographer Protocols for Fluoroscopy Radiology (available on QPulse)
<b>Interventional Radiology Departmental Preparation</b>	In addition to the guidelines above: <ul style="list-style-type: none"> <li>• The Basics of Interventional Radiology (IR)</li> <li>• Intervention Procedure Booklet</li> <li>• PATIENTCheck and STOP Moment as per QPulse documents</li> </ul>
<b>Machine Settings</b>	Arthrogram setting linked via RIS code

	<p>Screening setting – 2fps*</p> <p>Acquisition setting – Single shot*</p> <p>*however specific clinical cases may necessitate changes by performing practitioner</p>
<b>Patient Position</b>	Prone / Supine / Left Lateral
<b>Standard Examination</b>	Fluoroscopy guided Lumbar Puncture
<b>Comment</b>	Dependent on clinical condition of patient and specific questions on request card, this protocol may be adapted / reduced as per the Radiologist / Practitioner as necessary.
<b>Aftercare</b>	Not to drive for 12 hrs post injection
<b>Results</b>	<p>Results will be provided to the patient by the referrer.</p> <p>Staff should follow the Imaging Department Protocol to ensure patients are aware of the process to get their results and appropriate timescales.</p> <p>Imaging non-medical staff should not discuss results or potential treatment with patients.</p> <p>In the event of potentially significant unexpected findings, images should be sent for urgent report. If confirmed, the Radiologist / Performing Practitioner will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.</p> <p>If the patient is a GP referral, they should ideally wait whilst Images are reported. The Radiologist / Performing Practitioner will escalate urgent results to the referrer. The Radiologist / Performing Practitioner will advise on changes to when patients should seek their results.</p>
<b>Image Archive</b>	Ensure required Images transfer into the correct record on PACS. Rejected Images should not be archived.
<b>Rejected Images</b>	Non diagnostic / unrequired images will not be sent to PACS
<b>Reporting</b>	Most Images will be reported by UHDB Radiologist or Performing Practitioner
<b>Dose Recording</b>	Operators must record the patient's dose on CRIS, as specified by the employer's procedures.
<b>Diagnostic Reference Level</b>	<ul style="list-style-type: none"> <li>• No national DRL available</li> <li>• Local DRL 1953 mGycm<sup>2</sup></li> </ul>
<b>Overexposure</b>	<p>Examinations breaching the DRL without obvious cause should be regarded as an incident and a DATIX incident report should be completed. Such incidents should be escalated to the senior Radiographer on duty for local investigation.</p> <p>Please see Imaging employer's procedure for Radiation Incidents and Trust Incident Investigation Policy.</p>
<b>Error Reporting</b>	Radiographers have a professional duty to be open about errors. When a significant error is identified whilst the patient is still within



	<p>the department, they should be told, an apology offered and a DATIX incident form completed.</p> <p>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.</p> <p>The Trust Duty of Candour process will then be followed if a relevant threshold is considered to have been reached.</p>
<b>Basis for Practice</b>	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways
<b>Signature &amp; Date</b>	<p>This document is managed and signed electronically in the Imaging QPulse system. Please see the QPulse 'document details' record.</p> <p>Hardcopy Versions of this document must be accompanied by the document details report from QPulse</p>

# Imaging Department Clinical Protocol



University Hospitals of  
Derby and Burton  
NHS Foundation Trust

**Modality: Interventional**

**Site: All Sites**

<b>Ref: IR 10</b>	<b>Review Due:</b>  Annual - Please see QPulse Active until replaced	<b>Document Owner:</b>  Clinical Director – Imaging Please see QPulse
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<b>Examination</b>	Permacath for Haemodialysis / Tenchoff for Peritoneal Dialysis completed by the Renal Physicians
<b>Description</b>	Interventional Procedure to insert permacath / tenchoff lines
<b>Clinical Indications allowing Justification / Authorisation</b>	<ul style="list-style-type: none"> <li>○ As per iRefer guidelines</li> </ul>
<b>Information relevant to, but insufficient to allow Justification / Authorisation</b>	Specialist referral, research, Radiologist recommendation, 'non-medical examination for example 'medico-legal' reasons.
<b>Contraindications</b>	<p>Allergy to Iodine and associated medications needed</p> <p>Patient unable to cooperate with examination requirements.</p> <p>Patient does not consent or withdraws consent.</p> <p>Relevant recent imaging which excludes the suspected pathology and no change in clinical history.</p> <p>Another Imaging modality / technique is more appropriate</p>
<b>Justification / Authorisation</b>	<p>Requests must be Justified by a Practitioner.</p> <p>Operators (Radiographers and pre FRCR Radiologists) may authorise examinations with the above clinical indications as defined in the relevant authorisation protocol. The Clinical Director for the Imaging Business Unit is the Practitioner for all authorised examinations. Requests with other clinical indications, not listed above but included in the Royal College of Radiologists iRefer guidelines, must be Justified on a case by case basis by a Practitioner.</p>
<b>Protocolling</b>	Examinations are performed in accordance with this standard protocol.
<b>Consent</b>	Patients are consented by the parent Renal Physician Team in line with the "Interventional Radiology - How to Request - Clinical Guidelines" available via Koha
<b>Radiation Risk</b> National Radiological Protection Board Risk Category	<p>Lifetime additional risk of cancer per examination:</p> <p>PHE Descriptor:</p> <p><b>Low Risk (less than 1 in 1,000)</b> This represents a very small addition [0.025%] to the 1 in 3 chance we all have of getting cancer</p>
<b>Pre-procedure preparation</b>	As per :

	<ul style="list-style-type: none"> <li>• “Interventional Radiology - How to Request - Clinical Guidelines”</li> <li>• “Interventional Radiology - Antibiotic Guidelines”</li> <li>• “Apixaban: Bleeding, Surgery and Overdose - Clinical Guidelines”</li> <li>• “Rivaroxaban: Bleeding, Surgery and Overdose - Clinical Guidelines”</li> <li>• “Coagulation and Clotting Range - Interventional Radiology - Clinical Guideline”</li> <li>• “Fasting Prior to Regional and General Anaesthesia, and Sedation - Adults and Children - Clinical Guidelines”</li> </ul> <p>All available via Koha</p>
<b>Interventional Radiology Departmental Preparation</b>	<p>In addition to the guidelines above:</p> <ul style="list-style-type: none"> <li>• The Basics of Interventional Radiology (IR)</li> <li>• Intervention Procedure Booklet</li> <li>• PATIENTCheck and STOP Moment as per QPulse documents</li> </ul>
<b>Machine Settings</b>	<p>Fluoroscopy: FluoroFlavor 1*  Acquisition: single shot*  *however specific clinical cases may necessitate changes by performing Radiographic Operator</p>
<b>Patient Position</b>	Supine
<b>Standard Examination</b>	Diagnostic and post intervention fluoroscopy grabs only (if DSA Runs are required they will be performed by an Interventional Radiologist, and the appropriate Protocol will then become IR08)
<b>Comment</b>	As per MDT discussion / requesting clinician of parent team
<b>Aftercare</b>	As per detailed in aftercare instructions available in patient notes
<b>Results</b>	<p>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. 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 / Performing Practitioner will escalate the report to the referrer in accordance with Imaging department policy. The referrer will then contact the patient as appropriate.</p>
<b>Image Archive</b>	Ensure required Images transfer into the correct record on PACS. Rejected Images should not be archived.
<b>Rejected Images</b>	Non diagnostic / unrequired images will not be sent to PACS
<b>Reporting</b>	Images will be reported by performing UHDB Radiologist
<b>Dose Recording</b>	Operators must record the patient’s dose on CRIS, as specified by the employer’s procedures.

<b>Diagnostic Reference Level</b>	<b>Exam</b>	<b>Local DRL Dose</b> (mGycm <sup>2</sup> )	<b>National DRL</b> <b>Screening Time</b> (mins)	<b>National DRL Dose</b> (mGycm <sup>2</sup> )
	Tunnelled Line	904	1.5	3000
	Permacath	126	N/A	N/A
<b>Overexposure</b>	Examinations breaching the DRL by a factor of 10 without obvious cause should be regarded as an incident and a DATIX incident report should be completed. Such incidents should be escalated to the senior Radiographer on duty for local investigation. Please see Imaging employer's procedure for Radiation Incidents and Trust Incident Investigation Policy.			
<b>Error Reporting</b>	Radiographers have a professional duty to be open about errors. When a significant error is identified whilst 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.			
<b>Basis for Practice</b>	Royal College of Radiologists i-Refer, local commissioning and agreed referral pathways			
<b>Signature &amp; Date</b>	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			