JMO Orientation Guide for
Westmead Radiology
2015
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**Westmead Hospital – Radiology Services**

The Department of Radiology at Westmead Hospital is one of the largest, and busiest, Radiology Departments in New South Wales.

The Department of Radiology provides a wide range of diagnostic and therapeutic radiology services across the modalities listed below.

**List of Clinical Services**

- General Radiography
- Computed Tomography Scanning (CT)
- Magnetic Resonance Imaging (MRI)
- Fluoroscopy
- Interventional Radiology / Angiography
- Dental Radiography
- Operating Theatres Imaging

**Target Audience**

Patients and referring doctors of Western Sydney Local Health District and beyond.

**Urgent Cases**

Urgent cases should be notified directly to Department staff, so that suitable arrangements can be made.

**Appointment Requirements**

Appointments are required for any MRI, CT, Interventional Radiology and Fluoroscopy procedure. An electronic referral (e-Order), or a written referral is always required.

No appointment is required for General Radiography, e.g. plain film x-ray. An electronic referral (e-Order), or a written referral is always required.

**Referral Requirements**

**Inpatients** – An electronic request needs to be entered through PowerChart. It is a legal requirement that all relevant fields be completed. Appropriate clinical history MUST be included. The referring medical practitioner must provide their own contact details and treating staff specialists contact details. In the event of network downtime, and electronic referrals cannot be generated, paper referral forms should be submitted.

**Outpatients** - It is a legal requirement that a written referral is provided. The referral form needs to be written out by the treating medical practitioner, or, where appropriate dental practitioner. It is essential that a relevant clinical history is provided. The referring medical practitioner must provide their own contact details and treating staff specialists contact details. Referral forms are available from Radiology. All sections of the form are required to be filed in where appropriate.

**Fees**

All Medicare eligible services are bulk billed where appropriate.
GENERAL PRINCIPLES IN REQUESTING IMAGING EXAMINATIONS
The following information has been adapted from Government of Western Australia, Department of Health website. It provides key information and considerations that may benefit any referrer:


**Diagnostic Imaging Pathways - About Imaging: General Principles in Requesting Imaging Investigations**

**Justification and Optimisation**

All requests for imaging should be subject to the processes of **justification** and **optimisation**.

**Justification** is the process of weighing the risk of a procedure against the potential benefit. For a procedure to be justified the potential benefit should outweigh the risk.

- The radiologist has the knowledge and experience to best determine the imaging risks and consider alternative imaging investigations, including those not associated with ionizing radiation. However, the referring doctor, who has seen and knows the patient, can best assess the potential benefits in performing the test and, importantly, may also be best placed to assess the detriment to the patient of not performing the test.
- Therefore, optimally, the process of justification should be the **joint responsibility** of the referrer and the imaging specialist. Implicit in this statement is the requirement for adequate communication and consultation between these individuals.

**Optimisation** is the process of ensuring that the radiation dosage during imaging is kept to a minimum according to the ALARA principle (As Low As Reasonably Achievable), while maintaining the diagnostic quality of the examination.

- Optimisation is the responsibility of the imaging specialist and technologist.

**Responsibilities of the Referring Doctor**

1. Avoid unnecessary duplication of tests. This is aided by:
   - Awareness of any previous tests performed (e.g. by other doctors)
   - Ensuring that the patient is aware of the importance of keeping previous images and taking them along for review at the time of any subsequent tests.
   - Awareness of the appropriate interval for serial imaging. This, of course, will vary with the disease process and the type of imaging.
2. Ensure the results of a test should potentially alter patient management. However, it is acknowledged that exclusion of disease in certain circumstances may provide important reassurance for doctor and patient.

3. Provide adequate clinical details to the imaging specialist. Remember the adage “garbage in, garbage out”:
   - The statement of a provisional diagnosis on the request will help the radiologist to determine the correct protocol for the imaging investigation
   - In most situations a more meaningful report will be forthcoming if the imaging specialist is provided with the clinical history relevant to the examination and the question to be answered by the investigation
   - The clinical details assist the radiographer in deciding which views to perform – more detailed information will yield specialised views when required

4. Ensure that imaging investigations are not a substitute for examining the patient.

5. Be aware that many imaging tests have risks. Referring clinicians should be sufficiently aware of those risks to determine whether the potential benefits of the test outweigh the potential risks. For any “invasive” procedure it is the Imaging Specialist's responsibility to obtain informed consent from the patient or relative or to delegate responsibility to a doctor who knows all the significant risks. The reader is referred to the Ionising Radiation Training Module at this web-site.

6. Consult with Imaging Specialist colleagues when appropriate. There is often a number of available investigations in a particular clinical situation. The choice of the appropriate test in what may be a complex clinical problem will be facilitated by consultation.

7. Particularly in younger patients, if possible and appropriate, choose imaging that does not employ ionizing radiation (e.g. ultrasound, MRI) in preference to those using ionizing radiation.

Responsibility of the Imaging Specialist

1. Ensure, in association with the referring clinician, that the appropriate test is performed.

2. Determine that radiation dosage during imaging is kept to a minimum according to the ALARA principle (As Low As Reasonably Achievable).
   - Avoid duplication of tests (reference to prior imaging, avoidance of the need for repeating views by overseeing quality control of radiography, etc).
   - Adhere to strict principles of radiation protection such as shielding, appropriate technical factors, appropriate film/screen combinations and obtaining the minimum number of exposures required for adequate diagnosis.
   - When appropriate, choose tests that do not employ ionizing radiation in preference to those that do.

3. Avoid ionizing radiation in pregnant patients by:
   - Raising the awareness of patients for the need to inform the Imaging Specialist or technologist of the possibility of pregnancy.
   - Adhering to the “28 day rule”. If a patient of child-bearing age has missed a period, the test may need to be delayed until pregnancy is excluded.
   - Performing tests that do not employ ionizing radiation, in preference to those that do, when it is appropriate for patients of child-bearing age.

4. There may be over-riding urgent clinical circumstance, that warrant irradiation of a pregnant, or possibly pregnant patient. The responsibility for performing the test should be shared after consultation with the referring clinician

5. Provide a timely and accurate report of the examination. The need for promptness should be balanced with the need for accuracy, so that instant “patient-waiting” reports should be discouraged other than for plain x-rays, since this is likely to lead to
perceptive errors. If the test shows a significant finding such that the delay in the
referring clinician receiving a typed report by the conventional arrangements would
be detrimental to the patient's health, it is the Imaging Specialist's responsibility to
attempt prompt communication of the findings to the clinician.

Informed Consent

Informed consent is the process in which a proposed procedure or decision is discussed with
the patient, enabling educated participation in their own healthcare. It is a patient's legal and
ethical right to decide on their medical treatment. For the purposes of imaging investigations,
elements of informed consent include:

- Nature of the proposed imaging investigation.
- Risks (including those of ionising radiation) and benefits of the proposed imaging
  investigation.
- Alternative and relevant forms of investigation.
- Risk and benefits of alternative investigations.
- Risk and benefits of not undergoing investigation.

The mental competency to make a decision must be assessed by the treating physician and
if deemed to be inadequate, a decision should be sought by the patients appointed power-of
attorney or next-of-kin in most situations. For the decision to be valid, consent must be
obtained voluntarily.

It must be emphasised that the standard of disclosure varies between individuals and
different risks and adverse outcomes are of different importance to each individual. The
following excerpt from the Rogers v Whittaker case highlights this.

“...in the circumstances of the particular case, a reasonable man in the patient's position, if
warned of the risk, would be likely to attach significance to it or if the medical practitioner is,
or should reasonably be aware that the particular patient, if warned of the risk, would be
likely to attach significance to it…”

Any documents prepared for the purposes of informed consent must therefore be flexible, to
allow for the varying requirements of individual patients.

A guide for consumers in gathering information that may be needed for making informed
decisions is published by the Consumers’ Health Council of Australia at: www.chf.org.au
<table>
<thead>
<tr>
<th>IMAGING INVESTIGATION</th>
<th>EFFECTIVE DOSE (mSv)</th>
<th>EQUIVALENT NUMBER OF CHEST XRAYS</th>
<th>EQUIVALENT PERIOD OF NATURAL RADIATION</th>
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<tr>
<td><strong>PLAIN RADIOGRAPHY</strong></td>
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<td>15 days</td>
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<td>35.0</td>
<td>4 months</td>
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<tr>
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<td>65.0</td>
<td>7 months</td>
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<tr>
<td>Hip</td>
<td>0.30</td>
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<td>7 weeks</td>
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<tr>
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<tr>
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<tr>
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<td>Bone Imaging (Tc-99m)</td>
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<td>200</td>
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<td>Cerebral Perfusion (Tc-99m)</td>
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<td>2.0 years</td>
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<td>Lung Perfusion (Tc-99m)</td>
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<td>50.0</td>
<td>6 months</td>
</tr>
<tr>
<td>Myocardial Perfusion (Tc-99m)</td>
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<td>2.5 years</td>
</tr>
<tr>
<td>Myocardial Imaging (FDG-PET)</td>
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<td>4.0 years</td>
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<td>10 months</td>
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<tr>
<td>DMSA Renogram</td>
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<td>35.0</td>
<td>3.5 months</td>
</tr>
<tr>
<td>HIDA Hepatobiliary Imaging</td>
<td>2.30</td>
<td>115</td>
<td>1.0 years</td>
</tr>
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</table>

**Table:** Typical effective doses for common procedures.

* The average world-wide natural radiation dose is 2.4 mSv per year

DIAGNOSTIC IMAGING PATHWAYS
DECISION MAKING
TITLE
Diagnostic Imaging Pathways

PURPOSE
Provision of a guide to the optimal selection of Diagnostic Imaging Pathways with the aim of utilizing the correct sequence of radiology investigations while exposing the patient to the least possible amount of radiation.

RECOMMENDATIONS
Adopt as a formal Westmead-wide Policy.

IMPACT OF RECOMMENDATIONS
- On Patients: Best practice guide to radiology examinations as an aid to obtaining a differential diagnosis.
- On Services: Decrease the number of unnecessary radiology examinations leading to improved workflow and reporting turnaround times.
- On Finance: If there is a significant decrease in unnecessary imaging, there is the potential to reduce workforce demands and ‘faltering demand’ in radiology, reduced booking reporting and decreased ‘wear and tear’ on equipment.

KEY ISSUES – including any other impacts
Requires implementation by all services throughout Westmead Hospital.

CONSULTATION
3-year consultation process involving ED, Surgery and Medicine.

BACKGROUND
Diagnostic Imaging Pathway document attached – pages 2 – 94

Author (or contact): Dr George Mehler, Clinical Director, Radiology  Tel: 9648 6522  Date: 16.07.13

Approved by:
1. Dr Matthew Volkaevic, Clinical Director ED     Date: 16.01.13
2. Dr Jeremy Hill, Clinical Director of Trauma Services     Date: 16.01.13
3. Mr Shaun Drummond, Executive Director, Operations Westmead     Date: 6.02.13
4. Mr Danny O’Connor, Chief Executive

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WESTMEAD HOSPITAL

DIAGNOSTIC IMAGING PATHWAYS DECISION MAKING

DATED: 16 JANUARY 2013
Version 3
A. REVIEW OF DIAGNOSTIC IMAGING PATHWAYS

All Westmead Hospital Staff Specialist Radiologists, Staff Specialist Surgeons and ED Consultants have had the opportunity to review and agree to utilise the Royal Australian and New Zealand College of Radiologists ("RANZCR") College "Diagnostic Imaging Pathways" guidelines where appropriate.

The aim of these Guidelines is to formulate an algorithm that Junior Medical ED Staff can easily follow in order to investigate optimally a patient with the minimum use of radiation.

The Dept of Radiology acknowledges that ED Consultants and Staff Specialist Physicians or Surgeons clinically examining and reviewing patients have every right to order the appropriate examination they feel is clinically indicated. They may desire to follow the guidelines, but ED Consultants and Staff Specialist Physicians or Surgeons should have the ultimate clinical decision.

The Dept of Radiology will carry out requests that an ED Consultant, Staff Specialist Surgeon or Physician makes. Should a dispute arise, the appropriate forum to review this is either at the bi-monthly ED Conference, or appropriate Clinical Meeting between Radiologists and Physicians or Surgeons.

B. MEMORANDUM

1. The RANZCR Diagnostic Pathways guidelines can be found via the Westmead Intranet / Clinical information / Radiology / Imaging guidelines WA or www.imagingpathways.health.wa.gov.au

2. The Departments of Radiology, Medicine, Surgery and Emergency Medicine agree to implement the RANZCR Diagnostic Pathways as Standing Orders for junior staff.

The following site-specific amendments agreed to at Westmead Hospital are:

a) Cord Compression Algorithm
   ➢ If an ED Consultant, Rheumatology Consultant, Oncology Consultant, or Registrar requires an after-hours MRI Spine for cord compression, then a clinical review by the Spinal Trauma Team Registrar is required (Neurosurgical or Orthopaedic Registrar as rostered).
   ➢ The Spinal Trauma Team Registrar will request the MRI Spine and prioritise giving consideration as to when surgical intervention will be required.
   ➢ If the Spinal Trauma Team Registrar is not available for review (e.g. in theatre), and the patient is in the Emergency Department; then the decision will be based on Clinical Discussions between the on-call Radiology Team and the ED Senior who examined the patient (between 0800 – 2400 hours: the ED Senior is the ED Consultant; between 0000 – 0800 hrs: the ED Senior is the Senior ED Registrar).
If the Spinal Trauma Team Registrar is not available for review (e.g. in theatre), and the patient is in the Surgical Ward, then the decision will be based on Clinical Discussions between the on-call Radiology Consultant the on-call Staff Specialist Surgeon.

If the clinical setting involves an Oncology patient, and the Spinal Trauma Team Registrar is not available for review, then the Medical Oncology Advanced Trainee or Radiation Oncology Advanced Trainee may order the MRI after clinically examining the patient and discussing their concerns with their Consultant.

b) Multi-Trauma Patients and Blunt Abdominal Trauma Algorithm:
- Follow the appropriate algorithm.
- All major trauma patients (blunt) require a CXR and Pelvis X-Ray.
- Oral contrast is not required for trauma CT abdomen/pelvis unless specifically looking for oesophageal, gastric or duodenal injury. IV contrast should still be administered unless contra-indicated. e.g. abnormal serum creatinine.
- Spinal reconstruction is routine if CT Chest / Abdo / Pelvis performed.
- ED Consultants, Staff Specialist Surgeons and Senior Medical Staff Specialists may wish to order other regions to be scanned by CT that are not in the algorithm depending upon their clinical assessment of the patient.

c) Blunt Cerebro-Vascular Injury:
- Follow algorithm (b) above, AND also add CT Angiography of the Neck for:
  - C1 to C3 fracture;
  - C-spine subluxation;
  - Involvement of the transverse cervical foramen (?vertebral a injury);
  - Hangings; and,
  - Bilateral mandible fracture.

d) Lower Urinary Tract Injury:
- Follow algorithm (b) above, and add:
  - Pelvic fracture with macroscopic haematuria must have a CT-cystogram.
  - Blood present at urinary meatus requires: retrograde urethrogram in the fluoroscopic screening room (preferable), or in resua.

e) Pulmonary Embolism: Please note that Radionuclide V/Q scans are not available outside 0830-1700 hours Monday – Friday.
- V/Q scans are not appropriate for patients with an abnormal CXR or spirometry.
- For patients <40 with a normal CXR, a V/Q is the preferred first line test within the hours of availability.
- For patients >40 years: CTPA is the preferred first line test.
- For pregnant patients please see separate algorithm (f) below.

f) Suspected Pulmonary Embolism in Pregnancy:
- Follow the American Thoracic Society (ATS) protocol below.
Lower limb Ultrasound is only available 0830 – 1700 hours, Monday – Friday and remains the first test of choice.

Pulmonary Embolism in Pregnancy Protocol: Suspected Pulmonary Embolism in Pregnant Patients - the option for MRI is deleted in the Diagnostic Imaging Pathways algorithm.

Though D-Dimer only useful in 1st Trimester, it is not used in the ATS protocol.

The Wells Scoring Criteria is not used in the ATS protocol.

COMMENT: When presented with the evidence, most pregnant women will chose a CTPA over a V/Q scan because of concerns about risks of radiation to the foetus. Although the V/Q scan is likely to be the most appropriate investigation to be performed in the vast majority in pregnant women, it is unlikely that many women will elect to have this test, and will instead favour a CTPA. It is not possible for clinicians to override this concern: the vast majority of pregnant women will end up having a CTPA regardless of the recommendations that are made. Nevertheless, the option for a V/Q scan should be appropriately proposed to pregnant patients.
Abbreviations:
- CUS: Lower Limb Ultrasound
- CXR: Chest X-Ray
- CTPA: CT Pulmonary Angiogram
- V/Q: Nuclear Medicine V/Q Scan

**g) Hip Fracture Protocol:**
- On-going suspicion for Hip Fracture: proceed to CT Hip
- The option for MRI is deleted.

**h) Renal Colic Protocol:**
- A CT KUB is the investigation of choice for all patients with suspected renal colic, nil recent history and on-going pain for > 2 hours, except where the:
  1. Patient is pregnant;
  2. Patient has had a previous CT KUB < 3 months; or,
  3. Consideration should be made to perform an US +/- KUB for patients < 30 years during available hours.
- The ED needs to be mindful of total cumulative exposure in patients with a long term history of renal colic.
- Please note that IVP’s are not generally available at Westmead Hospital.

**i) Acute Back Pain:**
- Scoliosis / Radicular Pain – If pain not improving within 10 days, or if any new focal neurological signs develop, then MRI should be utilised where appropriate.
- Considered a non-urgent investigation unless there are signs of red flag conditions such as septic arthritis, epidural abscess and cord compression present (see item 2(a) for algorithm discussion).

**j) Cervical Spine Injury:**
- Follow the algorithm (i) and (ii) below.
- If significant midline pain post-normal CT, consider active flexion / extension views at 2 weeks post injury if clinically warranted.

**k) Thoraco-Lumbar Spine Injury:**
- Follow attached algorithm (iii) below.
- ‘Coned down’ Thoraco-Lumbar spine CT should only be ordered by the Spine Team.
- CT Chest / Abdo / Pelvis with spinal reconstructions are preferred for trauma workup.

**l) Penetrating Abdominal Injury:**
- Follow attached algorithm (v) below.
- Flank / posterior wounds in stable patients require TRIPLE contrast CT Abdo / Pelvis (i.e. IV, oral and rectal contrast) to exclude retroperitoneal injury.
m) Peripheral Vascular Injury:
   ➢ See attached algorithm (iv) below for CT Angiography indications.

n) Surgery without Imaging is becoming increasingly uncommon:
   ➢ If a Surgical Registrar is not available to clinically review the patient, then
     the ED Consultant will make the appropriate determination for investigation.
   ➢ If an ED Consultant is not available, the ED Junior Staff will follow
     the relevant imaging algorithm.
   ➢ US is the imaging modality of choice for female patients of child-bearing age
   ➢ CT may be required in younger patients with atypical symptoms and a
     normal US.
   ➢ Males with atypical symptoms may require a CT as the first line imaging
     modality.

o) Left Iliac Fossa Pain:
   ➢ Plain X-Rays are not indicated unless bowel obstruction is indicated.

p) Suspected Cholecystitis:
   ➢ Targeted US of the hepat-biliary tree is the modality of choice (CT often
     cannot visualise gall-stones).
   ➢ Tc-IDT scans are not performed.
   ➢ A CT scan may be performed as first line imaging in painless jaundice.

q) Closed Head Injury Algorithm:
   ➢ Follow algorithm.
   ➢ The Canadian head CT rule has been validated and well accepted.

r) Investigation of Seizure:
   ➢ MRI first line non-urgent investigation of choice for EEG-proven partial
     seizure.
   ➢ If the seizure is not an EEG-proven partial seizure, then all suspected
     seizures receive a CT head as initial investigation of choice.

s) Facio-Maxillary Injuries:
   ➢ All suspected orbital wall/floor fractures be imaged with CT orbits or facial
     bones.

t) Stroke:
   ➢ On admission, the ED Senior Officer or Stroke Registrar will contact the
     Radiology Registrar notifying them of an impending CT.
   ➢ Patients so identified will proceed directly to CT for CT Brain as a priority.

3. Radiologists, Staff Specialist Surgeons / Physicians and ED Consultants will
   educate junior staff re. the appropriate Diagnostic Imaging Pathway algorithms and
   ensure that they are implemented.

4. All CT / MRI imaging requests shall be referred only after clinical examination
   and review by the:
   • ED Team: ED Registrar or ED Consultant;
• Surgical Team: Surgical Registrar or Staff Specialist Surgeon; or.
• Medical Team: Medical Registrar or Staff Specialist Physician.

5. The RANZCR Diagnostic Imaging Pathways, including amendments, serve as a guideline for clinical decision-making after clinical examination and assessment. Where applicable, ED or Surgical Registrars will clinically decide on pre-test probabilities after clinical examination, utilise the Diagnostic Imaging Pathway algorithms and use these to decide upon appropriate imaging based referrals.

ED: Where the clinical assessment indicates a radiology procedure that does not follow the guidelines, the case shall be clinically discussed between the ED Senior and the Radiology Registrar (between 0800 – 2400 hours: the ED Senior is the ED Consultant; between 0000 – 0800 hrs: the Ed Senior is the Senior ED Registrar).

Surgery / Medicine: Where the clinical assessment indicates a radiology procedure that does not follow the guidelines, the case shall be clinically discussed between the on-call Team Registrar and the Radiology Registrar. If there is no agreement between the Registrars, a Consultant Surgeon / Physician to Consultant Radiologist discussion will establish the Diagnostic Imaging Pathway to be followed for that particular case.

6. In the short to medium term, if the next step on the Diagnostic Imaging Pathways algorithm is an U/S or Nuclear Medicine examination and this is unavailable: then this step shall be omitted. The ED Registrar will record the following on the Comments section or the e-order either: "V/Q scan appropriate but not available", or, "U/S appropriate but not available".

7. ED or Surgical / Medical Registrars will record on the electronic request form the level of urgency of CT scan acquisition for triage purposes. These will be recorded on the electronic request form as the opening phrase in the Clinical Notes Section of the referral.

8. Clinical levels of urgency will be recorded as:

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<tr>
<th>Level</th>
<th>Description</th>
<th>Time Requirement</th>
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<tbody>
<tr>
<td>A</td>
<td>Immediate CT scan</td>
<td>Will be acquired within 30 minutes</td>
</tr>
<tr>
<td>B</td>
<td>Urgent CT scan</td>
<td>Will be acquired within 0.5 - 2.0 hours</td>
</tr>
<tr>
<td>C</td>
<td>Semi-urgent CT scan</td>
<td>Will be acquired within 2 - 24 hours</td>
</tr>
<tr>
<td>D</td>
<td>Non-urgent CT scan</td>
<td>Can be acquired as an out-patient referral</td>
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9. Corporate Urgency is defined as a referral required because subsequent clinical decision-making is contingent on the outcome of the CT examination.

➢ As a rule, clinical urgency always out-weighs corporate urgency.
➢ After-hours MRI referrals and Interventional Radiology / Angiography procedures are not to be requested as a matter of Corporate Urgency.
➢ As a rule, CT’s should not be delayed if the CT scanner is available at the time of the request.
Level 1: CT scan will be acquired as soon as practical, but should be acquired within 2 hours. Reporting of the CT will be triaged, with more urgent CT examinations having higher priority for reporting reported first.

Level 2: CT scan will be acquired as soon as practical, but the written reporting of the study is classified as 'Non-Urgent'. A verbal provisional report by the Radiology Registrar is sufficient during after-hours.

10. Radiology Registrars are required to keep an overview of workflow at all times in order to ensure that all referred studies from all referring Teams are prioritized. They are required to ensure that the RANZCR Diagnostic Imaging Pathway algorithms are adhered to.

11. All CT scans obtained are required to be provisionally reported upon by a Radiology Registrar.

12. If a patient is having a CT Brain, Thorax and Abdomen for trauma, it is permissible to add in a CT cervical spine (rather than perform a plain film examination, and bring back for CT if inadequate). Where a patient is undergoing CT Brain for head injury or intoxication, CT Cervical Spine may also be added, since in this group of patients it is not clinically possible to rule out cervical spine tenderness.

13. In cases where the RANZCR Diagnostic Imaging Pathways are not followed or fall “outside” the guidelines, it is expected that there could be contentious requests for CT imaging of other regions: the Radiology Registrar will be required to vet these requests as to appropriateness and consideration of radiation dose.

14. After-hours MRI referrals and Interventional Radiology / Angiography requests form an exception to the rule.

   ➢ After-hours MRI referrals and Interventional Radiology / Angiography procedures are only to be requested are for acute cases, i.e. They are not to be requested for reasons of Corporate Urgency.
   ➢ Where the Consultant under whom the patient is admitted is agreeable for the MRI or angiographic examination or other interventional procedure to be performed the next morning / day, the Radiology Consultant should be contacted between the hours of 0600 – 0945 hours.

15. Review Sessions:

ED: Review sessions every second month (bi-monthly) will be conducted to review occasions where the RANZCR Diagnostic Imaging Pathways were not followed. Constructive criticism will be encouraged. The ED Registrar responsible for organising the Clinical Meeting will be the Senior ED Registrar / Medical Administration (attached to Dr Matthew Vukasovic). These shall be scheduled on a bi-monthly basis from 0900 – 0945 hours on the first Wednesday of the month.

Surgery or Medicine: Review sessions at the Clinical Meeting between the Dept of Medical Imaging and appropriate Surgical or Medical Discipline will be conducted
to review occasions where the RANZCR Diagnostic Imaging Pathways were not followed. Constructive criticism will be encouraged. The Surgical / Medical Registrar responsible for organising the Clinical Meeting will be the person who organises the patient list for review at the Clinical Meeting.

(i) C-Spine Clearance – Altered LOC

1. Intubated/vedated patient

2. CT c-spine from B03 to T2

   a. Injury identified
      - Consult Spine Service
      - Full Spinal Precautions

   b. No injury identified by consultant radiologist
      - Perform Gross Motor Exam

3. Unable to perform gross motor exam (muscle relaxants, extreme sedation, analgesia, hypotension)
   - Leave collar on until gross motor exam possible
   - Consult Spine Service

4. Gross motor exam not suspicious for SCI
   - Spine is cleared
   - Remove collar

5. Gross motor exam suspicious for SCI
   - Motor asymmetry not otherwise explainable
   - Consult Spine Service
   - Full Spinal Precautions
(ii) C-Spine Clearance - Awake

Possible c-spine injury

Midline tenderness
GCS < 15
Intoxication
Peripheral neuro changes
Distracting injury

Yes
IMAGE C-SPINE

No
SPINE IS CLEARED
REMOVE COLLAR

Injury identified
CONSULT SPINE SERVICE
IMAGE C-SPINE
FULL SPINAL PRECAUTIONS

No injury identified

Persistent midline tenderness
ASPEN COLLAR
FLEX-EXT VIEWS in 3 wks with SPINE SERVICE

Non-tender midline, pain-free
ROM
SPINE IS CLEARED
REMOVE COLLAR
(iii) Thoraco-Lumbar Spine Clearance

Possible TL spine injury

Midline tenderness
Palpable step or midline bulging/swelling
GCS<15
Intoxication
Peripheral neuro changes
Distracting injury

Yes
IMAGES TL SPINE
If going to CT for Trauma scan, then recon of spine, otherwise TL spine XR

No
TL SPINE CLEARED

Injury identified
CONSULT SPINE SERVICE
FULL SPINAL PRECAUTIONS
IMAGE C-SPINE (if not already done)

No injury identified
TL SPINE CLEARED
(iv) Peripheral Vascular Injury Workup

Extremity Injury

Penetrating

Hard signs present:
- Thrill/bruit
- Pulsatile hematoma
- Auscultable bleeding
- Ischemic limb
- Absent pulse

Yes
- URGENT OPERATIVE INTERVENTION
- VASCULAR CONSULT

No
- CHECK ABI

ABI = 0.9
- OBSERVE IN HDU – vascular obt.
- Repeat ABI in 6hrs

ABI < 0.9
- Vascular injury signs still present
- CT-ANGIO
- VASCULAR CONSULT

Blunt

Signs of vascular injury:
- Thrill/bruit
- Pulsatile hematoma
- Auscultable bleeding
- Ischemic limb
- Absent pulse

ABI < 0.9
- Reduce fracture/Disloca tion
- OBSERVE IN HDU – vascular obt.
- Repeat ABI in 6hrs
(v) Penetrating Abdominal Wound

Penetrating abdominal wound

1. CT scan:
   - Transfer to OR for exploratory laparotomy
   - Evisceration
   - Transfer to OR for exploratory laparotomy

2. Hemodynamically compromised:
   - Generalized peritonitis
   - Evisceration
   - Transfer to OR for exploratory laparotomy

3. No immediate indication for laparotomy:
   - Anteriorization of wound
   - Transfer to OR for exploratory laparotomy
   - CT abdomen/pelvis

4. Non-penetrating breach on laparotomy:
   - Convert to exploratory laparotomy
   - Admit for observation

5. Non-penetrating breach on laparotomy:
   - No immediate indication for laparotomy
   - Flank/pastetelrotation
   - Try contrast (PO, IV, rectal) CT abdomen/pelvis

SIGNED:

Dr. Matthew Vukasovic
Director and Head of Dept, Emergency Department, Westmead Hospital

Dr. Jeremy Hill
Director of Trauma, Dept of Surgery, Westmead Hospital

Dr. George Molvor
Clinical Director, Dept of Radiology, Westmead Hospital
REQUESTING IMAGING EXAMINATIONS
**Imaging Orders** – Notes for Ordering doctors

Consultation is required for MRI, CT, Angio and Fluoro procedures.

Clinical History/Reason for exam – only information entered in the Current Clinical History field appears in the Imaging system (GE RIS/PACS), so:

**DO** put clinical history/reason for exam in the Current Clinical History field

**DON’T** put information in the General Clinical History field or Order comments field

**DON’T** use the & symbol in clinical history. Any data entered after this symbol does not show in the Imaging system so the order may be cancelled due to insufficient clinical history.

Please put as much clinical information as you can when ordering Imaging procedures and include details such as mobile procedure or specific body part (finger/toe etc.). Orders without appropriate or full clinical history may be rejected. Contact details are also important so you can be notified if there is a problem or if there are any questions about the patient/exam.

Occasionally orders will go missing between PowerChart and the GE RIS and neither the requesting doctor or Imaging will be aware, so please follow up on orders that have not been completed. PowerChart will display the status of orders, if the exam has been cancelled by Imaging staff, click on the order in PowerChart to find out why.

Additional Considerations

There are some key points that need to be considered when lodging an imaging request, be it either an eOrder or a paper form.

1. **Are all of the patient's details included and correct on the request?**
   In order to comply with current regulations, such as the Correct Patient, Correct Procedure, Correct Site Policy, every request must include the patient name, address, date of birth &/or medical record number (if applicable), and sex needs to be provided on the request.

2. **Has relevant clinical information been provided?**
   Every request must include relevant clinical information. The Correct Patient, Correct Procedure, Correct Site Policy, states that every request must include the procedure laterality and site, reason for the procedure, details of the examination required, the date the procedure was requested, and the exact anatomical location of the procedure.

   Terms such as “progress” and “follow up”, by themselves, are not valid reasons for clinical information.

3. **Does the request contain contact details for the requesting doctor?**
   Every request form must include a direct telephone number or pager for the referrer. A member of the Radiology Department may need to contact the referrer about the procedure that they have ordered.

4. **Are additional services required for the patient's imaging examination to proceed?**
   Does your patient require the aid of an interpreter, for example? If so this needs to be clearly written on the request, so that they can be organised prior to the examination occurring. If this is clearly documented on the request, it would avoid unnecessary delays occurring.

5. **Will the patient require an anaesthetic for the examination to proceed?**
   Some patient’s may require a general anaesthetic so that they can have their requested imaging examination. This may be the case with some MRI examinations, for example. If this is the case, this should be clearly documented on the request, so the correct staff are informed and the procedure can be booked appropriately.

6. **Does the patient have a working cannula?**
   Where a patient is to have an imaging examination other than a plain X-ray, for example a CT or MRI, they will often require an injection of a contrast media.

   When the referrer lodges a request for an inpatient to have one these types of imaging examinations, it is essential that the patient has a working cannula. If the patient does not have a cannula the referring doctor should ensure the patient is provided one, on the ward, prior to their imaging procedure.

   Please refer to “How to Request a CT” section for additional information.
HOW TO REQUEST A FLUOROSCOPY PROCEDURE
Requesting an Inpatient Fluoroscopy Procedure

Complete a paper Radiology Request form for the Fluoroscopy examination. Fax it to Radiology on 96872109, or deliver it to Radiology in person.

Request must include relevant Clinical Information, and requesting doctor’s contact information.

Document if additional services may be required, i.e. Interpreter etc.

Document on the request if there are any other special considerations that may affect the procedure.

If the examination is urgent, please contact the Radiology Registrar rostered to Fluoroscopy Procedures on Ext. 56522

Once the Radiology Registrar approves the request they will contact the Medical Officer, whose contact details have been provided, to discuss the procedure.

The examination will be booked into Fluoroscopy, and the ward notified of the appointment time.

Any relevant patient preparation will be sent to the ward, prior to the examination

Note: All Modified Barium Swallows (MBS’s) need to be booked through Speech Pathology, NOT Radiology.
Requesting an Outpatient Fluoroscopy Procedure

Complete a paper request form for the Fluoroscopy examination.
Request must include relevant Clinical Information, and requesting doctor’s contact information.
Request form must include relevant patient details, including telephone contact details.
Document if additional services may be required, i.e. Interpreter etc.
Document on the request if there are any other special considerations that may affect the procedure.
Give the paper request form to the patient, so they can take it to Radiology Reception to be booked in.

Ensure the paper request form has the name, and details, of the Consultant whom the examination report is to be sent.

Fax the completed request form to 96872109.
OR
Advise the patient to take the form to Radiology to ensure the procedure is booked in.

Note: All Modified Barium Swallows (MBS’s) need to be booked through Speech Pathology, NOT Radiology.
HOW TO REQUEST AN MRI
Requesting an Inpatient MRI

Complete and lodge an online eOrder for the MRI examination.
Request must include relevant Clinical Information, and requesting doctor’s contact information.
The make & model of any patient implant needs to be noted on the request.
Document if additional services may be required, i.e. Interpreter.
Document on the request if the patient requires sedation, and needs to be booked onto the Anaesthetic list.

↓

Complete the MRI Safety Form (paper), and fax it to 96333107 at the time the request is lodged.
This form is available on every ward.

↓

Requesting Medical Officer needs to consult the MRI Fellow, on Ext 56522, once the MRI Request & Safety Forms have been submitted.
Requesting an Outpatient MRI

Complete a paper Radiology Request form for the MRI examination.

Request must include relevant Clinical Information, and requesting doctor’s contact information.

The make & model of any patient implant needs to be noted on the request.

Document if additional services may be required, i.e. Interpreter.

Document on the request if the patient requires sedation, and needs to be booked onto the Anaesthetic list.

Complete the MRI Safety Form (paper), and attach it to the MRI Request form.

This form is available on every ward. A copy is also include on the following page.

Ensure the paper request form has the name, and details, of the Consultant whom the examination report is to be sent.

Advise the patient to take the form to Radiology to ensure the procedure is booked in.
MRI SAFETY FORM

Name: ___________________________ Date of Birth: ____________

Dear

An appointment has been made for you by ___________ to have an MRI examination.

Date: _______________ Time: _______________

Please arrive 30 minutes before your appointment time, with this form completed, to allow preparation for your examination.

Please answer all questions accurately:

Weight: ___________________ Occupation: ___________________

Do you have: Please tick

- Pacemaker or defibrillator implant? [ ] Yes [ ] No
- Neurostimulator? [ ] Yes [ ] No
- Programmable shunts/valve? [ ] Yes [ ] No
- Cochlear or stapes (ear) implant? [ ] Yes [ ] No
- Cerebral aneurysm or pit? [ ] Yes [ ] No
- Artificial heart valve or any stents? [ ] Yes [ ] No
- Have you ever had any metal fragments in your eyes? [ ] Yes [ ] No
- Are you or could you be pregnant? [ ] Yes [ ] No
- Are you breastfeeding? [ ] Yes [ ] No

Important: If you have answered YES to any of the above questions, you MUST call 02 9645 7200 to allow for implants to be checked prior to scanning.

Magnetic dentures [ ] Yes [ ] No Snappeal injury/foreign body [ ] Yes [ ] No
Hearing aids [ ] Yes [ ] No Tattoos or permanent eye liner [ ] Yes [ ] No
Body piercings [ ] Yes [ ] No Metal rocks, screws, plates [ ] Yes [ ] No

Please list ALL previous surgery below:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Form completed by: [ ] Patient [ ] Relative
[ ] Physician or other

Signature of person completing form: ___________________________ Date: ____________

Department of Radiology, Danny Road, Westmead, 2145: Phone: 9845 7200 (Ext. 27200) Fax: 9025 3167
What is MRI?
Magnetic Resonance Imaging (MRI) is an advanced scanning method that uses a strong magnetic field and radio waves to produce images of the body. No x-rays are used. This allows very highly detailed images to be produced safely and painlessly.

Is there any preparation?
Preparation for your scan is relatively simple. You may eat normally unless we advise otherwise and take any prescribed medication. Plan to arrive 30 minutes before your appointment with this form filled out. Gowns are required for the hospital car parks.

Occasionally some people suffer from claustrophobia which can be treated with sedation. Please contact the MRI department as soon as possible so we can make alternative arrangements for another day when sedation is provided with anaesthetic cover.

Metal devices cause interference with the MRI machine and their presence during the MRI procedure may cause injury to you. It is therefore important that you remove any metal objects, jewellery, hangers, glasses, watches, credit cards, keys, wigs, makeup and dentures. Please ask the MRI staff before your scan if you have any questions.

During the MRI scan
You will be asked to change into a gown and positioned on the scan table. The table will then slide into the magnet. During the scan the machine will make a lot of noise (this is the only sensation you will feel). You will be provided with earplugs, earphones and eye covers if you want. You will also be given a contact buzz as that you can contact us during the scan and talk to us. However, we ask that you only do this if absolutely necessary as this can extend the scan time. We will talk to you and observe you throughout the exam. The MRI scan generally takes between 20 minutes and 1 hour, depending on the part of the body being examined. It is extremely important that you keep still at all times during the scan. In some cases the doctor might require you to have an injection of contrast. This enhances the details of the MRI image which helps the doctor in the diagnosis of the image.

After the exam
Resume your normal daily activities. There are no after effects from this examination. The images will be reviewed by a radiologist and a report will be sent to your doctor in a few days.

Please bring all previous X-rays, MRIs, Ultrasound and CT scans

Please turn over for important information regarding your scan

Department of Radiology, Darcy Road, Westmead 2145  Phone: 96457900 (Ext. 5720) Fax: 96533167

JMO Orientation 2015 – Department of Radiology
Mandatory questions when ordering MRI procedures (electronic version of MRI Safety Form)
HOW TO REQUEST A CT
Organising a CT Scan

Useful Numbers

CT reception – 57110
CT reception Fax  9845 8354
CT 1 – 58012 (mainly outpatients / interventional)
CT 2 – 57606 (mainly ED / inpatients)

Radiology registrar rostered to CT – Page 22778
Interventional Procedures – call 56522 and ask for Interventional / Procedures Registrar

Quick guide to ordering a CT scan

1. Place e-order in Powerchart WITH RELEVANT CLINICAL HISTORY

2. Page Radiology registrar on Pager 22778. Have the following handy
   - Patient name and MRN
   - Patient history
   - Most recent blood results especially Creatinine and eGFR
   - Any allergies the patient might have
   - Any other relevant information

3. If your scan is URGENT, call the CT control room on 57606.

   CT staff will call the ward and arrange for the patient to be prepared for CT including fasting and cannulation.

4. Ensure that the patient has a working cannula. A guide of the appropriate gauge, for various examinations, is provided on the following page.

Cancelling CT scans

Call CT on 57606, as well as cancelling on Powerchart
## CT Scan Preparation

<table>
<thead>
<tr>
<th>STUDY</th>
<th>PREPARATION</th>
<th>CANNULATION</th>
<th>OTHER INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brain Non Contrast</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Brain with IV Contrast</td>
<td>Nil</td>
<td>20 G (Pink)</td>
<td></td>
</tr>
<tr>
<td>Circle of Willis CT Angiogram</td>
<td>Nil</td>
<td>18 G (Green)</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>Cervical Spine</td>
<td>Necklace / ear rings / wearing aids removed</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Soft Tissue Neck with IV Contrast</td>
<td>Nil</td>
<td>20 G</td>
<td></td>
</tr>
<tr>
<td>Carotid / Vertebro CT Angiogram</td>
<td>Nil</td>
<td>18 G</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>CT Pulmonary Angiogram</td>
<td>Nil</td>
<td>18 G</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>CT Chest</td>
<td>Nil</td>
<td>20 G</td>
<td></td>
</tr>
<tr>
<td>High Resolution CT Chest (HRCT)</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>CT Chest / Abdomen / Pelvis</td>
<td>No solid food 4hrs prior / no fluids allowed</td>
<td>20 G</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>CT Abdomen and Pelvis</td>
<td>No solid food 4hrs prior / Clear fluids allowed</td>
<td>20 G</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>Multiphase Liver / Renal / Pancreas / IVP</td>
<td>No solid food 4hrs prior / Clear fluids allowed</td>
<td>18 G</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>CT Angiogram Aorta / Abdominal Aorta / Run-off</td>
<td>Nil</td>
<td>18 G</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>CT Venogram Abdomen</td>
<td>Nil</td>
<td>20 G</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>CT Renal Angiogram</td>
<td>Nil</td>
<td>18 G</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>C1-KUB</td>
<td>Nil</td>
<td>20 G in AFFECTED HAND</td>
<td>Contact CT reception for diet protocol</td>
</tr>
<tr>
<td>CT Cerebrovascular</td>
<td>Nil</td>
<td>20 G</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>CT Arm Veinogram</td>
<td>Nil</td>
<td>Nil</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>CT Arm Angiogram</td>
<td>Nil</td>
<td>18 G in NON AFFECTED ARM</td>
<td>Cannula MUST BE IN ANTECUBITAL FOSSA</td>
</tr>
<tr>
<td>CT Trauma Study</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
</tbody>
</table>

### Special Considerations

- **Pregnancy**: Ultrasound or venous catheter for amniotic age
- **Diabetes**: withhold Metformin + 48 hrs MTX/IV Contrast, and consider IV hydration depend on renal function
  - F<150 (women) and <200 (men)
  - Discuss with radiology registrar
- **Renal Function - check Creatinine - if**
  - Cr<0.5 (men) and Cr<0.8 (women)
  - Discuss with radiology registrar
- **Contrast allergy**
  - Discuss with radiology registrar
Requesting a CT Guided Procedure

Complete a paper Radiology Request form for the CT guided procedure, and deliver it to Radiology in person.

Request must include relevant Clinical Information, and requesting doctor’s contact information.

Document if additional services may be required, i.e. Interpreter, sedation etc.

Complete a “FNA Biopsy / Procedure Form” available from Radiology and CT reception

Complete a Pathology Form with relevant tests for the specimen.

Document on the request if there are any other special considerations that may affect the procedure.

If the procedure is urgent, please contact the Radiology Registrar rostered to Fluoroscopy Procedures on Ext. 56522

Once the Radiology Registrar approves the request they will contact the Medical Officer, whose contact details have been provided, to discuss the procedure.

The examination will be booked into CT, and the ward notified of the appointment time.

Any relevant patient preparation will be notified to the ward, prior to the examination.
Radiofrequency Ablation / Microwave Ablation Bookings

Radiofrequency / Microwave ablation is a technique where certain tumours can be "ablated" or burnt off in a minimally invasive way. Not all tumours can be treated this way.

These procedures are normally performed in CT under a general anaesthetic, and can take 3 hours to complete.

To book one of these procedures

1. A discussion between a referring specialist / team and an interventional radiologist will determine whether a tumour is suitable for treatment.

2. Obtain a “Request for Admission” form from CT reception

   The CT reception staff will inform you of the date and time of procedure (depending on interventional radiologist availability)

3. **Complete the Request for Admission form and take it to Patient Booking’s (main foyer of the hospital).**

   These procedures usually require an overnight stay in hospital

4. Ensure an appropriate overnight bed is arranged post procedure

5. Arrange for the patient to go to the Pre-admission clinic prior to the scheduled procedure date

   *Failure to arrange a pre-admission clinic appointment may see the procedure cancelled and rebooked.*

Any questions on bookings can be directed to CT reception on 57110
Memo

To: Referring Doctor  
From: Dr. Anthony Kurr  
CC: CT Protocol Manual  
Date: 06/04/15  
Re: Protocol for Prevention of Iodine Contrast Nephropathy

Below are the current and updated Westmead Hospital Renal Unit Protocol for patients with impaired renal function requiring intravenous contrast. Indications include diabetic nephropathy, Bence Jones proteinuria and serum creatinine > 200umol/L. This protocol is to be instituted prior to contrast exposure.

**Oral Administration**
- N-acetylcysteine 600mg P.O. RN
  
  Two doses are to be administered on the day prior to the procedure.
  
  Two doses are to be administered on the day of the procedure.

**Oral**

**Intravenous Administration**
- IV 0.45% Saline 1mL/kg/hr for 12 hrs. prior to IV contrast

  Infusion rate may be varied according to cardiac status. Some patients may require 20-80mg Frusemide to establish a diuresis.

Stock and supply as well as advice can be obtained from pharmacy EXT. 57324 or the Renal Pharmacists; Peter Barclay-Payer #01356.

Please ensure that all patients have a serum creatinine checked on the following day.

● Page 1
PREMEDICATION FOR IODINE OR CONTRAST MEDIA ALLERGIC PATIENTS
REQUIRING CONTRAST MEDIA ADMINISTRATION

The safest option for patients who are at risk of an anaphylactoid reaction to radiocontrast material is to consider non-invasive examination media or alternative imaging modalities. As this is not always possible, the necessity of the study should be documented with the potential risk explained to the patient and consent obtained. Consideration of the use of poronite iodinated contrast media to decrease severe adverse drug reaction risk may also be required.

Patients who are at increased risk for an allergic reaction to iodinated contrast material require pre-medication prior to the test.

Pre-medication decreases the risk of an allergic reaction to contrast, IT DOES NOT PREVENT A REACTION.

Patients with prior severe reactions should be investigated by an immunologist/allergist.

The exact pathogenesis of reactions to radiocontrast material is unknown. Complement activation, direct histamine release from mast cells and basophils, recruitment of multiple inflammatory mediators and antigen-antibody interactions are all postulated.

A study of 857 cases of patients who had previously experienced an immediate generalized (anaphylactoid) reaction to radiocontrast media evaluated various pretreatment medications. Medications used included prednisone, diphenhydramine, epinephrine sulphate and cimetidine. Cimetidine was not found useful in this study but has been reported to be beneficial in individual cases.

A randomised study examined 6763 intravenous contrast material patient doses. Pre-medication with oral corticosteroids (especially more than one dose of steroid) reduced the number of patients with serious adverse reactions to intravenous contrast material.

Steroids are the mainstay of pre-medication, with antihistamines being more useful for late-onset contrast medium reactions.

The following is a suggested premedication regimen:

1) **PREDNISOLONE 25mg**
   - Take TWO tablets the evening before the test (at least 12 hours before test) and
   - Take TWO tablets on the morning of the test (2 hours before test)
   - To be taken preferably with food or milk (take with a sip of water if fasting)

2) **CETIRIZINE 10mg**
   - Take ONE tablet on the morning of the test (2 hours before test)*

3) **RANITIDINE 150mg**
   - Take ONE tablet on the morning of the test (2 hours before test)

*Dosage adjustment may be required in renal/hepatic impairment.

References
ACCESSING IMAGES THROUGH PACS
Accessing Medical Images Through Powerchart

**STEP 1 - Logging On**
Double Click on Powerchart Icon and enter your username and password.

**STEP 2 - Find your Patient**
- Bring up the search window by clicking on the find button.
- Enter patient’s MRN or Name in corresponding search fields and press enter.
- A list of results will appear showing all pathology and radiology procedures
- Click on the appropriate modality to refine your search.

**STEP 3 - Find Your Results/Medical Images**
- If the status is listed as “ordered” no imaging has been received.
- If the status is listed as “In progress” Imaging has begun, results may be preliminary or not received.
- If the “Patient Imaging Folder” is displayed then images have been received. Double click on this to launch the patient’s imaging folder, comparison exams are available with this option.
- If the status is listed as “Name of procedure such as chest” then the images and results have been finalised. Double click on this to open up the report. From here click on the view images button to view just this particular study’s images (comparisons not available with this option).

**STEP 4 - Manipulating the Image**
- Press and hold down the RIGHT mouse button and move the mouse up and down, or left and right to adjust the brightness and contrast of the image
- Single click the RIGHT mouse button to see a list of all the available menu options
- Press and hold down the MIDDLE scroll button and move the mouse up and down to zoom in and out
- Press and hold down the LEFT mouse button and move the mouse left to right, and up and down to roam the image about the screen
- Double LEFT mouse click the image to make it the full screen size

**STEP 5 - Viewing the Report**
- To view a report, click the Report Tab at the bottom of the screen
DOWNTIME PROCEDURES
ACCESSING PACS IMAGES DURING DOWNTIME

During a downtime, you may not be able to access Radiology PACS images via Power-Chart. In this situation, PACS images are diverted to a special archive called BACKUP WEB.

The BACKUP WEB can be accessed from Internet Explorer on any computer connected to the hospital Intranet.

If you are unsure whether you should use BACKUP WEB, contact Radiology or ask one of the Radiographers for advice.

Alternatively, you can navigate to the following address to get to the Westmead BACKUP WEB:


Username: downtime
Password: downtime

Once you have logged in to BACKUP WEB, enter your patient’s name (Last name, First name) or MRN to locate their records

You will find your images on BACKUP WEB if they are unavailable via Power-Chart for any reason.

You might also be directed to BACKUP WEB by a Radiographer when there are QA issues relating to particular studies.

RIS PACS SUPPORT

24 Hour support is available from the RIS PACS technical support team

Any users experiencing difficulties accessing images or reports through PowerChart or the Centricity Web should:


OR

Call the ITS Helpdesk on 1800285533