MAKING THE BEST USE OF CLINICAL RADIOLOGY SERVICES

Dr Martina Paetzel
Consultant Radiologist
LEARNING OBJECTIVES

• To be aware of guidelines regulating ionising radiation & radiation dose

• To introduce how to request common examinations and how the radiology department accepts referrals

• To cover some common indications for common examinations

• To be aware of some of the safety issues for each examination

• To cover the information we need from you to give you the most helpful report
WHAT YOU THINK WE DO:

A Radiologist's Day

J. Chang MD
www.poorMD.com

Radiologist at work

Radiologist at lunch

Frustrated radiologist

Radiologist at breakfast

Radiologist at break

Tired Radiologist

Radiologist at bed time

Radiologist going home

Radiologist at play

Radiologist at dinner
WHAT WE REALLY DO:

- CT – Approximately 80-90 exams
- MR – Approximately 30-40 exams
- US – 130 exams
- XR - ~400 exams
- (not including NM, Interventions, biopsies, mammo)

> 600 Exams per day!

The Radiologist of the Day typically gets bleeped about 30 times per day. Over half of these calls are redirected to the right place.
GUIDELINES

- Making the best use of clinical radiology services.
- Referral guidelines from Royal College of Radiologists (iRefer)
- Link on intranet via: Divisions and departments (purple on left)
- Facilities and clinical support
- Radiology
- RCR guidelines
IREFER

[Screen capture of the iRefer website]

[Image description: A person working on a computer with medical images displayed on the screen.]
REQUESTING IMAGING

White: Plain X-ray OP, IP Cyber-Rad
White: PE imaging request CT/VQ
White: MRI safety checklist
Blue: Ultrasound OP, IP
Green: Nuclear medicine
Pink: CT (A&E vision)
Yellow: MRI
# CT Imaging Request

## Patient Information

**Hospital Number:**

**Name:**

**Address:**

**Date of Birth:**

**NHS Number:**

### Clinical Details

State the problem and the questions to be answered:

### Examination(s) Requested

- ☐ URGENT
- ☐ NOT URGENT
- ☐ GP FAST TRACK

#### Referrer

**Name:**

**Bleep:**

**Signature:**

**Print:**

**Speciality:**

**Date:**

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All X-ray requests must be made in accordance with NREMIR 2000 Procedures and Protocols.

Incomplete or illegible cards will be returned.

Patients may telephone the department to arrange a mutually convenient appointment.

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# Radiology Use Only

## Previous Imaging:

### Pregnancy Procedure:

**LMP Date:**

**Possibility of Pregnancy?**

**Yes / No**

**Radiographer:**

**Date Received:**

**Appointment details:**

**V5 793**
REQUESTING IMAGING

_Cards must be filled out completely_

Valid _bleep or extension_ that we can reach you
Signed and Printed name

_Must_ have relevent clinical details, clinical question / DDx

_Must_ be legible

_Electronic Requests require (mostly) the same!_

Valid bleep number, extension
Must have clinical question, relevant details
REQUESTING PRIVILEGES FY & ST1-2

- Plain Film / X-ray
- Ultrasound except biopsies/drainages
- Complex investigations are for senior doctors only (ST3 and above).
- Bringing down cards for non-urgent scans to reception in X-ray Central
RADIATION PROTECTION

- All requests must be justified
- Radiographers can justify some tests under protocol.
- Radiologists must justify the rest
- There are strict laws governing radiation protection (IRMER)
- Radiation is more dangerous the younger you are, or if pregnant / breast feeding
<table>
<thead>
<tr>
<th>What is needed</th>
<th>Extension</th>
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<tbody>
<tr>
<td>Inpatient Queries</td>
<td>6426</td>
</tr>
<tr>
<td>CT, MR, US, NM, ROD</td>
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<tr>
<td>Outpatient Queries</td>
<td>5613</td>
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<tr>
<td>Outpatients, Secretaries, Reports, Diagnostic Support</td>
<td></td>
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<tr>
<td>X-Ray</td>
<td>8149</td>
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<tr>
<td>For out of hours requests 3400</td>
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HOTLINE

- Inpatients

6426

Option 1: CT
Option 2: MR
Option 3: US
Option 4: NM
Option 5: Urgent
HOTLINE

- Outpatients

5613

Option 1: Reports
Option 2: Ultrasound
Option 3: MR
Option 4: CT
Option 5: Rad Support
For urgent X-rays please politely let the radiographers know

- IP X-ray 8:30-8pm 8419
- A&E out of hours 3400

Films will always be better in the department. Use portables sparingly

Please do not forget to cancel requests if they are no longer needed (e.g. US if CT has been done)
At-a-Glance Guide for Requesting Radiology Examinations

<table>
<thead>
<tr>
<th>Weekends:</th>
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<tbody>
<tr>
<td><strong>Switchboard</strong></td>
<td><strong>Consultant Radiologist</strong></td>
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<td></td>
<td><strong>9 am – 3 pm (Onsite)</strong></td>
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<tr>
<td><strong>03330100999 – Medica – CT ONLY</strong></td>
<td><strong>8:00 pm – 9:00 am Weekdays</strong></td>
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<td><strong>3:00 pm – 9:00 am Weekends</strong></td>
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<tr>
<th>X-Ray</th>
<th><strong>3400</strong></th>
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<td><strong>IT Problems</strong></td>
<td><strong>1016</strong></td>
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<tr>
<td><strong>6426 – Inpatients</strong></td>
<td><strong>Option 1 – CT-Requests</strong></td>
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<td></td>
<td><strong>Option 2 – MR Requests</strong></td>
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<td></td>
<td><strong>Option 3 – US Appointment Queries</strong></td>
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<td></td>
<td><strong>Option 4 – Nuc Med Requests</strong></td>
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<td><strong>Option 5 – Consultant Radiologist – senior doctors only</strong></td>
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<tr>
<th><strong>5613 – Outpatients</strong></th>
<th><strong>Option 1 – Report requests, HOT reporting</strong></th>
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<td><strong>Option 2 – US Requests</strong></td>
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<td><strong>Option 4 – CT Requests</strong></td>
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<td><strong>Option 5 – Radiology Systems Support</strong></td>
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<tr>
<th><strong>8419 – X-Ray/Plain Film</strong></th>
<th><strong>Out of Hours: 3400</strong></th>
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<th><strong>Interventions (any kind):</strong></th>
<th><strong>Bleep consultant directly – consultant referral only</strong></th>
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<tr>
<td><strong>IT problems</strong></td>
<td><strong>Radiology secretaries</strong></td>
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| **Other Options**             | **Radiology registrar to look at CT and PF / demonstration of findings** |
|                              | **Bring down non-urgent request cards to X-ray Central directly** |
|                              | **Consultant Radiologist consultation, usually ST3 & above / preferably consultant-to-consultant** |
RADIOLOGIST OF THE DAY (ROD)

- Consultant Radiologist on call
- For urgent referrals from Consultants and senior doctors (ST3 and above)
- Please come with your consultant when they are requesting urgent scans as you soon will be requesting them and need to know what we need to know.
- For urgent scans we need to know why we need to postpone another patient to do yours, and how it will change your management
- For x-ray reports please ring 5613 and press option 1 for results enquiries, and ask for it to be put on HOT reporting.
MEDICA

- For CTs only
- 8:00 pm – 9:00 am Weekdays
- 3:00 pm – 9:00 am Weekends
TRAINEES

- We currently have 6 trainees who sit in the PACS room who can demonstrate plain films and CTs for you.
TIPS IF YOU HAVE TO RING

• The Radiology Department is hugely busy!

• Ring wisely… And be prepared! Please follow the guidelines.
  • Be prepared to justify why we have to cancel another appointment for your patient.
  • If there are previous scans, please look at them (and read the report) before you ask for a scan.
  • Have the relevant clinical history at hand.
  • Have the patients’ details ready before you call!
    • This includes patient ID, surname, first name and what type of scan you want
  • Please speak clearly when talking to a consultant on the phone
    • No food whilst on the phone!
    • State your name and grade clearly.
COMMON INDICATIONS - CXR

- Chest pain
- Heart failure
- Asthma or COPD – sometimes
- Infection / pneumonia
- Haemoptysis
- Pneumothorax - Not rib fracture
- SOB if unknown cause
- Erect CXR for perforation > 15mins

“Still, let’s do an x-ray just to be sure.”
COMMON INDICATIONS - AXR

• Acute abdominal pain
• Perforation
• Obstruction
• Acute exacerbation of IBD if suspect toxic dilatation
• KUB for renal calculi if CT has not been performed
• *Not* gallstones, pancreatitis etc
COMMON INDICATIONS - US

- Gallstones (needs fasted >4hours)
- Abnormal LFT’s / jaundice
- Acute renal failure / hydronephrosis
- Gynae probs / PMB / cysts etc (need full bladder)
- Abdominal aortic aneurysm check
- Testes – not acute torsion
- Marking for pleural or ascites drain
- Paeds: hips, cranial, some bowel
WHAT WE NEED TO KNOW - CT

- CT is high radiation dose so we need good details to justify the examination including a clinical question or differential diagnosis.

- Contrast can give you allergy and renal failure – check renal function and allergy history (including coronary angiograms, IVP etc).

- Need IV access – usually at least a pink. Green for angiograms, cardiacs etc.

- Any tubes or orifices we could put contrast in.

- Co-existing illnesses – especially neoplasm.

- Previous surgery.

- A relevant up to date bleep number of someone who knows the patient to answer questions and convey urgent results to.
WHAT WE NEED TO KNOW - CT

Pregnancy!
WHAT WE NEED TO KNOW - MRI

- All inpatients must have a safety checklist attached to the card – be absolutely sure there’s no pacemaker
- Renal function - as Gadolinium can cause nephrogenic systemic fibrosis
- How long the patient can lie still for – minimum 15 minutes for simple examinations
- If they’re claustrophobic. You can prescribe oral anxiolytics prior to scan but they must remain awake
- Must be awake, able to answer safety questions and follow instructions
- Please give adequate pain relief
- May need a venflon if a contrast examination
- No metal allowed in the scanner.
- Pregnancy – there is a relative contraindication in first trimester
- Cardiac MRI is specialist investigation from consultant cardiologist
ROUTINE HOURS

- IP X-ray 8:30am – 8pm
- US 9am – 5pm weekdays
- US early pregnancy unit - 2 hrs on Sunday mornings
- CT 9am – 5pm,
- CT weekends 9:00-3pm for IP
- MRI 8am-8pm, weekdays
- MRI weekends 10-12 for cord compression only
- NM 9am – 5pm weekdays
XERO & CYBER-RAD

- Xero for viewing images
- Use Trust username (short version eg surnameDr1) and password
- Must change domain name from AGFA to Fylde coast
- Cyber-Rad for requesting IP x-ray and US, uses first part of the e-mail (eg firstname.surname)
- If doesn’t work, please contact IT
SUMMARY

• Specific laws and guidelines govern radiology
• If unsure ask your seniors
• RCR referral guidelines fairly helpful and comprehensive
• Urgent referrals are from senior doctors only but please listen to find out what we need to know
• Use the telephone guide to get to the right place more efficiently
• Fill out the request card completely and legibly – otherwise they will be sent back!
THANK YOU!

We are a friendly department!
We aim to help you as much as we can!

Any Questions?
Trainees in the PACS room
martina.paetzel@bfwhospitals.nhs.uk