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# Questions

## Prioritisation of Clinical Situations 1

[1]: Prioritisation of Clinical Situations / 6 Minutes

You are the on-call radiology registrar covering a night shift. Please prioritise the following scan requests:

1. CT head for a 72-year-old male with acute onset aphasia and right-sided weakness, last seen well 1 hour ago. Referred by A&E.
2. MRI lumbar spine for a 42-year-old female with severe low back pain, saddle anaesthesia, and urinary incontinence for the past 6 hours. Referred by neurosurgery.
3. CT pulmonary angiogram for a 28-year-old female who is 32 weeks pregnant with pleuritic chest pain and shortness of breath. Haemodynamically stable. Referred by obstetrics.
4. CT abdomen/pelvis for a 9-year-old boy with right lower quadrant pain and suspected appendicitis. Referred by paediatric surgery.

### Answer

1. **A (CT head) -** This patient is likely having an acute stroke and is within the thrombolysis window of 4.5 hours. As per NICE guidelines, a CT head should be performed immediately to assess eligibility for thrombolysis or thrombectomy. Delaying this scan could lead to worse outcomes, so I should communicate with the clinical team directly to coordinate.
2. **B (MRI lumbar spine) -** This patient likely has cauda equina syndrome (CES) based on the classic triad of severe back pain, saddle anaesthesia, and urinary dysfunction. The RCR recommends scanning within 4 hours to prevent permanent neurological deficits. Timely imaging is important but the 4-hour window allows for the acute stroke to go first.
3. **D (CT abdomen/pelvis) -** While appendicitis requires urgent diagnosis and treatment, ultrasound is the preferred first-line imaging modality in children to avoid ionising radiation per the ALARA principle. I would communicate with the clinical team to ensure they are aware of this, and if there are any valid reasons for a CT here. It may also be reasonable to take the patient directly to theatre depending on the presentation.
4. **C (CTPA) -** Although pulmonary embolism is dangerous, especially in pregnancy, the patient is currently stable. The RCR states that risks of delayed scanning usually outweigh contrast risks even with pregnancy. However, given the other unstable cases, a slight delay is acceptable. I would explain my reasoning to the clinical team and recommend close monitoring. I would also explore the possibility of starting definitive treatment early and delaying the scan to the next day, where there is more capacity and the mother can be given time to make an informed decision. There may also be a possibility of a V/Q scan during the day, which delivers a lower radiation dose to the mother in exchange for a higher radiation dose to the baby.

## Prioritisation of Clinical Situations 2

[2]: Prioritisation of Clinical Situations / 6 Minutes

You are covering an overnight radiology shift at a trauma centre. Please prioritise the following cases:

1. CT head for a 25-year-old male in a high-speed MVA, intubated in the trauma bay. Haemodynamically unstable.
2. CT abdomen/pelvis for an 82-year-old female with abdominal pain and distension. Lactate 4.5. Referred by general surgery.
3. MRI brain for a 37-year-old female with new seizures and a right temporal lobe mass on recent outpatient CT. Neurology referral.
4. CT face for a 19-year-old male with isolated facial trauma after an alleged assault. Stable vitals. Plastic surgery referral.

### Answer

1. **A (CT head/trauma scan) -** This patient requires an emergent trauma scan based on the mechanism and haemodynamic instability. The primary survey should be completed within 15 minutes per RCR guidelines, followed by a full report within 1 hour. I should communicate with the clinical team directly to coordinate.
2. **B (CT abdomen/pelvis) -** The patient likely has ischaemic bowel or another intra-abdominal catastrophe based on the abdominal exam and elevated lactate. Emergent CT is indicated after the trauma patient. This scan will likely be delayed because of the trauma patient, so It would be important to explain this to the clinical team in case they need to modify their management plan.
3. **D (CT face) -** While this patient requires timely imaging, his isolated facial trauma and haemodynamic stability allow him to be imaged after the unstable polytrauma and acute abdomen. Most other fractures would benefit initially from plain film imaging in two views, but CT is appropriate for facial trauma. If the scan is for operative planning, the clinical team may be amenable to delay it till the morning. It's worth discussing with the clinical team whether any further imaging is required for occult injury to he head or neck.
4. **C (MRI brain) -** Although a new brain mass is concerning, this patient is currently stable and was referred from an outpatient setting. The RCR recommends MRI within 2 weeks for suspected brain tumours in stable patients.

## Prioritisation of Clinical Situations 3

[3]: Prioritisation of Clinical Situations / 6 Minutes

You are the daytime radiology registrar. Please prioritise the following cases:

1. MRI Internal Auditory Meati (IAMs) for a 52-year-old male with acute right-sided sensorineural hearing loss. ENT referral.
2. CT head for a 67-year-old female on warfarin, now with acute headache and vomiting. INR 3.5. A&E referral.
3. US Doppler scrotum for a 14-year-old male with acute testicular pain and swelling for 2 hours. Urology referral.
4. CT coronary angiogram for a 58-year-old male with atypical chest pain. RACPC referral.

### Answer

1. **C (US Doppler scrotum) -** This patient likely has testicular torsion given his age and acute presentation. Ultrasound within 4 hours is crucial to assess salvageability of the testis, and I would coordinate with the sonographers to make sure this happens. This is so that the definitive management of bilateral fixation can be performed as soon as possible.
2. **B (CT head) -** This patient likely has an acute intracranial haemorrhage given the clinical scenario and supratherapeutic INR. Delaying CT could lead to herniation and death. A non-contrast CT head is indicated, and I would ask the clinical team to monitor for deterioration while pending scan.
3. **A (MRI IAMs) -** While hearing loss can be idiopathic, an inner ear mass or labyrinthitis needs to be excluded. However, this can safely be done within 1-2 weeks per ENT UK guidelines in absence of other cranial nerve palsies.
4. **D (CT coronary angiogram) -** This is an outpatient with atypical chest pain, meaning their pretest probability of coronary artery disease is low. The RACPC should work the patient up with a stress test first per NICE guidelines. Radiation dose is also a concern. It is worth noting that inappropriate scans can lead to unnecessary downstream testing and patient anxiety, and it would be important to communicate this to the clinical team.

## Have you ever been in a situation where you felt out of your depth clinically and how did you handle it?

[4]: Specialty Skills / 3 Minutes

### Answer

As a foundation doctor, there have been many instances where I felt I was working at the edge of my clinical competence. One specific example was when I was the sole FY1 covering the urology ward on a busy weekend. My registrar was called to theatre, leaving me to manage the entire ward independently.

I remember feeling quite overwhelmed. I was receiving frequent calls from nurses regarding unwell patients, and there was one particularly complex patient who deteriorated and perforated while in SAU. I had to break bad news to the family, which added to the pressure.

I took a step back, made a list of all the jobs prioritising them by urgency, and systematically worked through them. I openly communicated with the nursing staff about the situation. I also made sure to keep my registrar informed about the workload.

Recognising the need for senior input, I deemed it appropriate to call the consultant in from home for support and decision-making. Eventually, the consultant came in, freeing up the registrar to assist me with the ward jobs.

Through simple measures like prioritising, communicating effectively, and escalating appropriately, I was able to manage a highly pressurised situation to the best of my ability and ensure optimal patient care.

During my radiology taster week, I observed how such skills are crucial for radiologists, especially during busy on-calls where they must juggle urgent reporting, vetting scans, and troubleshooting issues with radiographers. The attributes I demonstrated would enable me to cope effectively with the pressures inherent to radiology.

### Rationale

This answer demonstrates key qualities necessary for managing pressure and uncertainty in radiology: recognising when feeling out of depth, taking a systematic approach, communicating effectively, seeking senior support appropriately, and reflecting on how skills transfer to radiology. The answer uses a relevant clinical example, maintains patient focus, and links back to radiology.

## Can you give an example of when you worked effectively in a multidisciplinary team to improve patient care?

[5]: Specialty Skills / 3 Minutes

### Answer

Effective multidisciplinary teamwork is fundamental to quality patient care. A great example of this was during my time as an FY1 in haematology. We had a chemotherapy patient who contacted the clinical nurse specialist (CNS) suspecting febrile neutropenia. The CNS promptly arranged for the patient to attend the day unit and asked me to review them.

By the time I arrived, the CNS had already taken bloods and administered the first dose of antibiotics, expediting the patient's care. I clerked the patient, confirming the diagnosis of febrile neutropenia, and discussed the case with my registrar to finalise the management plan. I provided a thorough handover to the ward nurses to ensure continuity of care.

I also liaised with the on-call radiographer to arrange an urgent chest x-ray in light of the patient's neutropenic sepsis and need for isolation. All of this came together within an hour of the patient arriving - a real testament to efficient multidisciplinary collaboration.

This experience highlighted to me the importance of valuing and respecting the contributions of all members of the healthcare team. Clear communication, a shared understanding of roles, and a united focus on the patient enables swift, coordinated action.

On my radiology taster week, I observed a similar ethos of multidisciplinary cooperation. Whether it was radiologists working with radiographers to protocol scans, or contributing their expertise in MDT meetings, the principles of effective teamwork were evident throughout.

I believe my experiences and skills in collaborative working would allow me to integrate well into the radiology team and interface effectively with other specialties to optimise patient care.

### Rationale

This answer provides a clear example demonstrating effective MDT work, with specific actions taken by the candidate and others to improve patient care. Key teamwork skills are highlighted and the importance of respecting all team members is emphasised. The answer maintains a strong patient focus throughout and links the experience to what was observed in radiology.

## What skills do you have that will help you to become a good radiologist?

[6]: Specialty Skills / 3 Minutes

### Answer

I believe I possess several skills that would enable me to become an effective radiologist. Firstly, I have strong problem-solving abilities. As an avid coder since my school days, I've developed a systematic approach to tackling complex issues. Recently, I taught myself the React framework and was the lead developer on a software package for medical handover - all done in my spare time. The logical thinking and tenacity required for coding are skills I believe will serve me well in radiology, especially when faced with challenging diagnostic conundrums.

I'm also passionate about research and innovation. I'm currently involved in a qualitative study exploring clinicians' opinions on AI in healthcare. Through this, I'm gaining an appreciation of the nuances and complexities around introducing AI into clinical practice. With radiology being at the forefront of AI application, I feel my research experience and understanding of the associated challenges will be valuable.

Additionally, I have a strong academic foundation and self-directed learning skills. I've consistently performed well in exams and have developed effective strategies for assimilating large volumes of information. These attributes will aid me in tackling the rigorous radiology curriculum and passing the FRCR exams.

Importantly, I'm a strong communicator and team player. I've received excellent feedback on my ability to communicate with patients and colleagues. For example, when I was working in ED, I was commended for my sensitive breaking of bad news to a patient's family after an unexpected CT finding of malignancy. I believe my interpersonal skills will enable me to discuss imaging findings clearly, both with patients and in MDT settings.

Finally, I'm highly motivated and committed to a career in radiology. I've gone out of my way to gain experience in the field, including a special study module, a taster week, and two audits. I've also undertaken relevant extracurricular activities, such as the NHS Clinical Entrepreneur programme. I believe my drive and dedication will see me through the challenges of radiology training.

### Rationale

This answer highlights a range of skills relevant to radiology, including problem-solving, research and innovation, academic ability, communication, teamwork and commitment to the specialty. Specific examples are provided to illustrate these skills. The answer touches on key aspects of a radiologist's role (diagnostic challenges, AI, FRCR exams, patient communication, MDTs) demonstrating good insight.