

## SFHCHS107

### Acquire Magnetic Resonance images for diagnostic purposes



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#### Overview

This standard is concerned with the use of Magnetic Resonance imaging equipment to capture anatomical or functional images for diagnostic purposes. Individuals acquiring images will work within the limits of their authority and competence in respect of type of patient and complexity of imaging requirements.

Users of this standard will need to ensure that practice reflects up to date information and policies.

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### Performance criteria

*You must be able to:*

- P1 confirm all safety procedures and documentations are complete prior to entry to MR scan room
- P2 examine previous relevant images and clinical information, where available, to ensure that the correct procedure and techniques are employed
- P3 position patient correctly and remove potential artefacts
- P4 explain the procedure and requirements for compliance with procedure and check patient understanding
- P5 select appropriate sequences, coils and parameters
- P6 accurately select all parameters for the imaging procedure and enter correct patient details, including identification
- P7 ensure only essential, individuals remain in the room during image acquisition
- P8 reassure patient whilst they are in the scanner, maintaining both visual and verbal contact
- P9 adapt technique to meet patient requirements and to optimise image acquisition
- P10 commence image acquisition and monitor patient for signs of discomfort and compliance
- P11 view images on completion for technical acceptability and suitability for diagnostic purposes
- P12 perform post processing to ensure image quality
- P13 collate and prepare appropriate patient documentation and images for transfer in line with local protocols
- P14 maintain safety in the controlled area in accordance with current guidelines and requirements

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### Knowledge and understanding

*You need to know and understand:*

- K1 the requirements and procedures for patient identification, and consent,
- K2 your responsibilities and accountability under current national regulations and legislation, European, International and local guidelines, Professional Standards and Codes of Practice. This includes;
  - K2.1 health and safety at work and safe working methods
  - K2.2 control of infection, including aseptic techniques
  - K2.3 use of hazardous materials (COSHH)
  - K2.4 waste disposal
  - K2.5 use of medical devices and product liability
  - K2.6 security within the workplace
  - K2.7 patient confidentiality and data protection
  - K2.8 patient identification
  - K2.9 data entry, utilisation, recording and transfer
  - K2.10 guidelines for people in the scanner room
- K3 information that should be given to patients:
  - K3.1 prior to commencing the investigation
  - K3.2 during the investigation
  - K3.3 on completion of the investigation
- K4 the correct and safe use of the range of equipment associated with image acquisition and transfer
- K5 the physical processes involved in the production of images
- K6 the methods by which anatomical images are acquired, processed, transferred and stored
- K7 the capabilities and limitations of MR image capture equipment
- K8 the principles of MR physics
- K9 controlled areas and safety requirements in the MR environment
- K10 the physical principles of MR scanning
- K11 the type of acquisitions and protocols to be used
- K12 technical and diagnostic quality requirements of MR images
- K13 artefacts on images, their causes and avoidance strategies
- K14 factors which influence the decision to repeat images or take additional images
- K15 alternative imaging examinations.
- K16 the use of Quality Assurance equipment, recording results and taking appropriate action
- K17 potential harmful effects of electro-magnetic radiation
- K18 the location of Gauss lines
- K19 how to position coils for optimum imaging
- K20 how and from whom to obtain additional information to assist with decisions regarding procedures
- K21 relevant protocols, procedures associated with image acquisition and

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- transfer, including emergency procedures
- K22 timely equipment fault recognition and local procedures for reporting these
- K23 patient preparation procedures for MR scanning
- K24 the importance of checking for presence of metallic objects/prostheses, including cardiac pacemakers and the appropriate action to take
- K25 preparation of environment and equipment for MR scanning
- K26 patient and equipment positioning (including those required for comfort and immobilisation relevant to examination being performed)
- K27 the contra-indications (absolute and relative) to MR scanning, including the clinical implications of potential reactions relevant to the examination
- K28 the gross, surface and cross-sectional anatomy of the areas to be scanned
- K29 medical terminology relevant to the examination, including abbreviations
- K30 the relevant physiology of the areas to be scanned
- K31 the common normal variants and their appearance on MR images
- K32 common clinical problems of the areas to be scanned and their appearance on MR images
- K33 manifestations of patients' physical and emotional status
- K34 when additional images or scanning sequences are required to aid diagnosis and to enhance the examination
- K35 the type, range and purpose of records associated with image acquisition and transfer and their correct completion
- K36 local procedures and procedures pertaining to recording, collating and preparing appropriate patient documentation and images for transfer or storage according to local protocols
- K37 how to explain procedures in terms that can be easily understood by individual patients
- K38 methods to check patient understanding and how to encourage participation and compliance
- K39 personal level of competence and authority and when to seek assistance
- K40 the common anxieties and concerns of patients and how to recognise associated behaviours

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### **Additional Information**

#### **External links**

This standard links with the following dimension within the NHS Knowledge and Skills Framework (October 2004):

Dimension: HWB6 Assessment and treatment planning

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<b>Developed by</b>	Skills for Health
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<b>Originating organisation</b>	Skills for Health
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<b>Relevant occupations</b>	Health, Public Services and Care; Health Professionals
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<b>Suite</b>	Clinical Health Skills
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<b>Key words</b>	MRI, imaging, image acquisition, diagnosis
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