**Local Training Record**

**Assessment of Competence**

**Dual Energy X-Ray Absorptiometry (DXA) room**

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| **Name** |  |
| **Job Title** |  |
| **Scanner ID** |  |

Underpinning Knowledge and Understanding Required:

1. The current European and national legislation, national guidelines and local policies and protocols which affect your work practice, including:
* health and safety at work
* safe working methods
* control of infection
* use of hazardous materials (COSHH)
* waste disposal
* use of medical devices and product liability
* security within the workplace
* consent to radiological examinations
* patient identification
* data entry, utilisation, recording and transfer
* emergency procedures
1. Your role, responsibility and accountability under current National legislation and local policies and guidelines.
2. The roles and responsibilities of other team members.
3. Knowledge and understanding of roles, responsibilities, and training requirements under IR(ME)R 2024.
4. Knowledge and understanding of roles and responsibilities under the Ionising Radiation Regulations 2017 (IRR17)
5. Good knowledge of:
* Referral, justification and authorisation and reporting processes
* harmful effects of radiation to the human body
* appropriate Radiation Exposures for DXA Scans
* variables affecting exposure factors
* technical and diagnostic quality requirements of the image
* recognition of artefacts and their impact
* factors which influence the decision to repeat the scan or perform additional scans
* safe working practices, including radiation protection of self, patients and others in the work environment
* when additional scans are required to aid diagnosis and to enhance the examination
* systems to access additional support for professional advice, urgent or unexpected findings or emergencies
1. An appropriate understanding of DXA requests for radiography examinations and knowledge of medical terminology relevant to the scan including abbreviations.
2. Good knowledge of the gross anatomy of the human skeleton including:
* anatomical landmarks on the body that are relevant to DXA imaging e.g. centring points
* relevant bones of the appendicular skeleton
* main abdominal organs, their position and relationship to each other and their normal gas shadows and soft tissue as seen on DXA Scans
* gross anatomy and physiology of the areas imaged for DXA Scans
* common relevant pathologies and normal variants
* patient’s positioning relevant to the examination
1. Know the importance of timely equipment fault recognition, local procedures for reporting these and one's own responsibility for taking action.
2. Equipment capabilities, limitations and routine maintenance including the quality assurance and control processes required by the operator.
3. Good working knowledge of CRIS and PACS systems.
4. Knowledge and understanding of local policy for the identification of patients.
5. Knowledge and understanding of local policy for checking individuals of childbearing age for pregnancy or potential pregnancy.
6. **Most** **importantly, know the limitations of your own knowledge and experience and the importance of not operating beyond this.**

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| **Performance Criteria** | **Achievement** |
| **Date** | **Assessor’s Initials** |
| Has a good understanding of the DXA x-ray system, equipment and how to use it |  |  |
| Has a good understanding of examinations and how to obtain optimum scans |  |  |
| Is able to safely use manual handling equipment and demonstrate safe manual handling practices |  |  |
| Is able to competently deal with infection control issues |  |  |
| Is able to competently demonstrate:* switching radiographic equipment on and off including isolator switches
* safe operating of DXA equipment including movement of the scan arm and positioning
* carry out DXA examinations according to protocol
* positioning and immobilising patients to best demonstrate anatomic areas of interest to a high degree of accuracy, respecting patient ability and comfort
* Assess and document technical difficulties with patient ability, anatomy, previous surgery and fractures
* Background knowledge of Osteoporosis
* An understanding of Indications/Contra-indications for Bone Densitometry
* An understanding of health promotion and how to deliver this in an appropriate was for the patient to understand
* Understand how to use the weighing scales and height measuring tool
* Understanding of Bone Density measurements-BMD values, reference data, T-scores, Z-scores and WHO definitions
* safe use of suction and O2 equipment (both piped and portable)
* knowledge of emergency call bell locations including: Cardiac arrest buttons, patient call bells and pull cords, emergency call/urgent assistance buttons, fire ‘break glass’ points and emergency phone numbers and protocols for these
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| For GE iDXA Lunar densitometry scanner:Is able to competently demonstrate:* Principles of DXA technology
* Training and competent in use of scanning and computer equipment and software systems
* switching DXA equipment on and off including isolator switch and knowledge of the location of emergency stop buttons
* Training and competent in use of scanning and computer equipment and software systems
* safe operation of scan arm
* correctly select the patient from the worklist, checking identification and if necessary know how to input patient’s details into the equipment
* how to select the correct scan protocol for the examination
* post processing; demonstrate how to reject scans and send reports to PACS (as required, but not standard part of role)
* record the DAP reading from the dose report
* how to clean equipment using appropriate cleaning materials
* how to perform weekly Quality control (QC) and record this on the EXCEL, verifying QC results and comparing these results to accepted values as well as knowing when to raise this to the supervisor is outside the required tolerances
* how to perform daily Quality Assurance (QA) testing and actions to take if the test fails.
* To be competent in performing initial DXA scans, when patient have not had the scan at our site before
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| For DXA Scanning, in addition to standard scans, which is separately assessed with the ISCD precision study:* Completed the precision study and achieved the required least significant change (LSC) / Standard deviations (SD) results for accuracy
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| Check individuals of child-bearing age for pregnancy or potential pregnancy, if appropriate to the examination, and take action in accordance with local protocols |  |  |
| Position the patient and adjust their clothing according to the protocols for the examination to be performed in a manner which allows an optimal outcome to be achieved while:* recognising the patient’s need to retain their dignity and self-respect
* ensuring his/her comfort as far as possible
* preventing the appearance of artefacts
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| Apply, check and adjust appropriate scan settings for the patient size to minimise patient exposure whilst optimising diagnostic image quality |  |  |
| Check the room prior to making the exposure to ensure that only essential, protected persons remain with the patient and that all local rules have been adhered to and take appropriate action if this does not occur |  |  |
| Maintain communication with the patient/carer to facilitate their understanding and co-operation throughout the examination |  |  |
| Observe the patient’s condition and well-being at all times and take appropriate action if necessary |  |  |
| Process the scan image, correctly identified and inspect it for satisfactory technical and diagnostic quality according to local guidelines and criteria |  |  |
| Within the protocol assess the need to repeat any scans, to ensure the scan is optimally performed. |  |  |
| Refer to the Supervising Radiographer or DXA Lead if an abnormality is observed on the image which is likely to require further investigation or treatment, following departmental protocols |  |  |
| Inform the patient/carer of the results procedure and answer or refer any questions appropriately |  |  |
| Check the identification of the images against associated documents |  |  |
| Record, collate and prepare appropriate patient documentation and images for transfer or storage according to local protocols |  |  |
| Recognise where help/advice is required and seek it from appropriate sources |  |  |

**Competency Statement: The operator has been observed as meeting competency standards for producing DXA scans for diagnostic purposes.**

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| **Signature of Operator:** | **Print Name:** |
| **Date:** | **Position:** |
| **Signature of Assessor/Verifier:** | **Print Name:** |
| **Date:** | **Position:** |