

# SONOGRAPHER (DEGREE)

**Reference Number: ST0554**

## Details of standard

This apprenticeship standard is currently in development and its contents are subject to change

### Occupation summary

This occupation is found in the health sector and includes the NHS and private healthcare providers working in hospitals and clinics. The broad purpose of the occupation is to conduct diagnostic and screening ultrasound examinations. Ultrasound is the use of highly specialised scanning equipment to create echoes of high-frequency sound waves that can be bounced off body tissues. The echoes are then converted into an image called a sonogram. Ultrasound imaging allows an inside view of soft tissues and the body, to examine anatomy and identify problems. Sonographers perform and report a wide range of clinical ultrasound examinations within a defined area of practice. They undertake scans which may include but are not limited to cancer detection, women's health and pregnancy, abdominal, vascular and musculoskeletal examinations, although their individual scope of practice can be wide and varied. It requires extremely good hand-eye coordination, spatial awareness and excellent interpersonal skills. In their daily work, an employee in this occupation interacts with patients, their carers, members of the public and a range of healthcare professionals, e.g. doctors, midwives, nurses and radiographers. The sonographer will be competent to practice independently in this discipline but will work as part of a wider clinical team. They are independent professional practitioners responsible for managing their own work and for a wide range of specialist ultrasound scanning equipment and resources. They typically report to advanced practitioners, and may supervise healthcare assistants and clinical support workers.

### Typical job titles

Typical job titles include sonographer.

### Entry requirements

Individual employers will set the selection criteria for appointing apprentices; candidates typically will have 5 GCSEs including English and Maths A-C or 4 and above, and 3 A-levels A-C including one science, or equivalent qualifications.

### Occupation duties

#### Duty

#### Criteria for measuring performance

#### KSBs

**Duty 1** Work independently to plan,

Works in line with legislation,

K1 K2 K4 K5 K7

organise and prioritise ultrasound patient sessions, including evaluating patient notes and assessing their suitability to undergo the imaging procedure to ensure it is the right test, at the right time for that particular patient.	standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.	K10 K11 K12 K13 K14 K15 K16 K17 K18 K20 K24 K26 K27 K29  S1 S2 S3 S4 S5 S6 S7 S12 S13 S15 S16 S17 S18 S19 S20 S22 S24 S25 S26 S27 S28 S29 S33  B1 B2 B5
<b>Duty 2</b> Maintain data protection, patient confidentiality, effectively use relevant IT systems and undertake accurate data entry, patient report writing and record keeping with attention to detail.	Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.  Handles patient information in accordance with data protection and patient confidentiality protocols.  Maintains accurate records.	K1 K2 K7 K13 K15 K17 K19 K22 K27 K29  S1 S2 S3 S4 S7 S11 S13 S17 S23 S24 S25 S37  B3 B5
<b>Duty 3</b> Communicate effectively with patients, their family and carers and the Multi-Disciplinary team	Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.  Communicates effectively.	K1 K2 K5 K6 K7 K8 K11 K13 K16 K17 K24 K25 K26 K27  S1 S2 S3 S4 S5 S6 S12 S15 S16 S18 S19 S20 S22 S23 S29 S36  B1 B2 B5 B6
<b>Duty 4</b> Confirm patient consent for a variety of ultrasound procedures as a practitioner and understand limitations of own role within the consent process.	Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.	K1 K2 K5 K6 K7 K8 K13 K16 K17 K20 K25 K27  S1 S2 S3 S4 S5 S6 S12 S15 S16 S18 S19 S20 S22 S23  B1 B2 B4 B6
<b>Duty 5</b> Comply with statutory and local departmental ultrasound policies including health and safety	Complies with statutory and local departmental ultrasound policies.	K1 K2 K6 K7 K8 K13 K16 K19 K20 K28 K29

policies such as infection control, incident reporting, safeguarding, complaint procedures and accurate record keeping of patient information relating to imaging.		S1 S2 S3 S4 S5 S12 S13 S14 S15 S16 S21 S22 S23 S24 S25 S26 S34 S37 S38 S39 S40
<b>Duty 6</b> Carry out the range of ultrasound examinations within your scope of practice, to acquire and interpret ultrasound images and produce patient reports.	Acquires accurate ultrasound images.  Accurately interprets ultrasound images.  Produces accurate and timely patient reports.	B5  K1 K2 K3 K4 K5 K8 K9 K10 K11 K13 K14 K15 K18 K22 K23 K29  S1 S2 S3 S4 S5 S7 S8 S9 S10 S11 S12 S13 S14 S16 S20 S23 S27 S28 S29 S30 S33 S37 S41
<b>Duty 7</b> Optimise image quality by adjusting ultrasound machine and controls in order to obtain high quality scans and accurate diagnoses.	Obtains high quality scans and accurate diagnoses.	B1 B2 B3 B5  K1 K9 K10 K13 K14 K18  S7 S8 S9 S10 S11 S12
<b>Duty 8</b> Evaluate the quality of images according to the clinical criteria. Recognise normal, normal variants and abnormal image appearances in order to provide a report and to escalate urgent and unexpected findings in a timely manner.	Recognises and can report normal, normal variants and abnormal image appearances.  Escalates urgent and unexpected findings in a timely manner.	B5  K1 K2 K3 K4 K5 K7 K11 K13 K15 K17 K18 K20 K23 K24 K25  S1 S2 S7 S8 S9 S10 S11 S12 S13 S14 S16 S17 S20 S28
<b>Duty 9</b> Recognise and appropriately act upon the emotional and psychological needs of patients, colleagues, team and oneself due to the exposure to distressing and emotional situations.	Recognises and deals effectively with the emotional and psychological needs of self and others.	B2 B5 B6  K1 K5 K8 K13 K16 K17 K18 K20 K23 K24 K25 K26  S3 S4 S5 S6 S18 S19 S20 S26 S29 S31 S33 S42  B1 B2 B5 B6

<p><b>Duty 10</b> Communicate and discuss complex and sensitive information with Sonography patients in an empathetic and professional manner, ensuring their needs are met during the scan.</p>	<p>Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.</p> <p>Communicates empathetically and professionally.</p> <p>Ensures patient's needs are met during the scan.</p>	<p>K1 K5 K6 K8 K13 K16 K17 K20 K22 K25 K26</p> <p>S4 S5 S6 S18 S19 S20 S24 S25 S26</p> <p>B1 B2 B4 B5 B6</p>
<p><b>Duty 11</b> Take professional accountability for own practice and adhere to departmental policies relevant to the role of a Sonographer.</p>	<p>Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.</p>	<p>K1 K2 K5 K6 K7 K8 K10 K12 K13 K14 K15 K16 K17 K18 K19 K20 K22 K23 K24 K25 K26 K27 K29</p> <p>S1 S2 S3 S4 S5 S6 S7 S8 S10 S11 S12 S13 S14 S15 S16 S17 S18 S21 S22 S23 S24 S25 S27 S29 S30 S32 S33 S34 S36 S37 S38 S40</p>
<p><b>Duty 12</b> Supervise assistant practitioners, healthcare support worker, students and other learner groups within imaging and non-imaging services, facilitating their development and training, as appropriate.</p>	<p>Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.</p> <p>Facilitates the development and training of others.</p>	<p>K1 K15 K18 K23 K24 K27</p> <p>S12 S30 S33 S38</p> <p>B2 B3 B4 B5</p>
<p><b>Duty 13</b> Practise autonomously, safely, and effectively within the scope of Sonography practice and within the legal and ethical boundaries of a Sonographer.</p>	<p>Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.</p>	<p>K1 K2 K3 K4 K5 K6 K7 K8 K9 K10 K11 K12 K13 K14 K15 K16 K17 K18 K19 K20 K21 K22 K23 K24 K25 K26 K27 K28 K29</p> <p>S1 S2 S22 S23 S24 S25 S26 S27 S29 S42</p> <p>B4 B5</p>

<p><b>Duty 14</b> Practise in a non-discriminatory way acting in the best interest of patients at all times and act as an advocate for patients and their families within the Imaging Multi-Disciplinary Team setting.</p>	<p>Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.</p>	<p>K1 K2 K6 K7 K8 K12 K13 K16 K17 K20 K24 K25 K26 K27</p> <p>S1 S2 S3 S4 S5 S12 S13 S14 S15 S16 S21 S22 S23 S24 S25 S26 S34 S37 S38 S39 S40</p> <p>B1 B2 B5</p>
<p><b>Duty 15</b> Contribute to patient management plan, seeking appropriate onward referral as required when findings are outside their scope of practice</p>	<p>Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.</p> <p>Makes appropriate referrals.</p>	<p>K1 K2 K4 K5 K13 K14 K17 K24 K25 K26</p> <p>S12 S20 S21 S22 S23 S29</p> <p>B4 B5</p>
<p><b>Duty 16</b> Reflect on own Sonography practice and learning, and identify areas for personal development to maintain fitness to practice and to satisfy the requirements of relevant professional standards .</p>	<p>Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.</p>	<p>K1 K2 K15 K18 K19 K22 K23</p> <p>S20 S27 S29 S30 S32 S34 S35 S38</p> <p>B3 B4 B6</p>
<p><b>Duty 17</b> Develop procedures and changes to working practices or procedures for own work area, including research and audit of service delivery.</p>	<p>Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.</p>	<p>K1 K2 K14 K15 K22 K23 K27</p> <p>S29 S30 S32 S33 S34 S35</p> <p>B3 B5</p>
<p><b>Duty 18</b> Assist in an agreed quality assurance programme including the regular inspection of ultrasound machines and ancillary equipment</p>	<p>Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.</p> <p>Maintains a safe working clinical environment.</p>	<p>K1 K2 K10 K14 K22</p> <p>S8 S11 S12 S14 S15 S17 S32 S33 S37 S40</p> <p>B3 B5</p>
<p><b>Duty 19</b> Facilitate learning through delivering public health activities and education for patients and the general public</p>	<p>Works in line with legislation, standards, codes of conduct, national and local policies and procedures relevant to practice as a sonographer.</p>	<p>K2 K5 K8 K14 K15 K17 K24 K25 K26 K27</p> <p>S31 S33 S34 S35 S38</p>

## KSBs

### Knowledge

**K1:** Knowledge and understanding of the Society and College of Radiographers and British Medical Ultrasound Society (2017) Guidelines For Professional Ultrasound Practice, and national and local ultrasound policies.

**K2:** Knowledge and understanding of the legislative and clinical governance frameworks associated with sonography and the political, social, and economic factors impacting on health and social care and ultrasound service delivery in the NHS, private and independent sectors.

**K3:** Knowledge of the structure and function of the human body and how to relate these to normal, normal variants and abnormal ultrasound appearances and pathophysiology.

**K4:** Knowledge of the signs and symptoms of disease and trauma that result in referral for ultrasound procedures, and the use of other diagnostic tests.

**K5:** Understanding of the limitations of own scope of practice, knowledge and skills, and when to seek advice or refer to another professional.

**K6:** Knowledge of the procedure for obtaining consent and the implications of not obtaining consent, including the Society and College of Radiographer consent guidance documentation

**K7:** Knowledge and understanding of patient confidentiality, the responsibility to maintain it and understanding of the General Data Protection Regulation, including the need for accurate record keeping, in accordance with relevant legislation, protocols and guidelines.

**K8:** Knowledge and understanding of how to modify and tailor own communication skills address factors such as age, capacity, learning ability and physical ability whilst performing ultrasound examinations and discussing outcomes to ensure the patient and people acting on their behalf understand the message you are conveying

**K9:** Knowledge and understanding of the physics and technology of ultrasound imaging and image generation, including the underlying scientific principles.

**K10:** Knowledge and understanding of ultrasound equipment and its safe use and function in order to ensure that it is appropriate for purpose

**K11:** Knowledge and understanding of how to select, use and apply appropriate scientific and clinical terminology in all aspects of their professional practice.

**K12:** Knowledge and understanding of how the risk-benefit philosophy applies to ultrasound safety, to protect both individual service users and the population.

**K13:** Knowledge and understanding of the concepts and principles involved in the practice of ultrasound and ultrasound reporting, including clinical judgement, clinical decision making and when to escalate.

**K14:** Knowledge and understanding of the importance of quality assurance, health and safety and patient centred care as they apply to the practice of ultrasound.

**K15:** Knowledge and understanding of how to critically appraise current literature in order to support evidence based practice and research.

**K16:** Knowledge and understanding of the impact of culture, equality and diversity on practice in order to practice in a non-discriminatory manner, maintaining patients dignity and rights.

**K17:** Knowledge and understanding of patient /service user centred care in the context of their professional practice.

**K18:** Understanding of the importance of participation in training, supervision and mentoring.

**K19:** Knowledge and understanding of appropriate supplementary procedures aligned to mandatory training including manual handling, data protection, confidentiality, infection control and disposal of bodily fluids.

**K20:** Knowledge and understanding of medical ethics and mental capacity.

**K21:** Knowledge and understanding of ergonomically sound practice to ensure own wellbeing.

**K22:** Knowledge and understanding of the need to monitor and evaluate the quality of practice and the value of contributing to the generation of data for quality assurance and improvement programmes.

**K23:** Understand the importance of reflective practice, lifelong learning and continuing professional development within their own ultrasound practice and that of others.

**K24:** Understand the need to build and sustain professional relationships as both an independent professional and collaboratively as a member of a team.

**K25:** Understand the need to engage and empower service users and carers in planning and evaluating.

**K26:** Understanding of the role of the sonographer in the promotion of health and health education in relation to healthy living and health screening for disease detection.

**K27:** Understanding of the concept of leadership and its application to sonography practice.

**K28:** Knowledge and understanding of the pharmacology of ultrasound contrast media and drugs used during diagnosis and treatment, the methods of drugs administration, and how to remove and re-apply dressings.

**K29:** Understand cyber security in relation to ultrasound practice.

## Skills

**S1** Interpret, apply and reflect on professional codes of practice and legislation in order to deliver ultrasound examinations and take responsibility for own actions, exercising a professional duty of care.

**S2** Receive and justify appropriateness of referrals, and advise other healthcare professionals about the relevance and application of ultrasound examinations to the service user's needs.

**S3** Use independent methods to establish and confirm service user identity and confirm patient consent prior to undertaking ultrasound procedures.

**S4** Assess patients clinical condition prior to, during and after ultrasound examinations, recognising changing signs, symptoms and progression of disease, and make appropriate decisions relating to ultrasound appearances and the immediate management of the patient

- S5** Use effective communication with the patient to determine their suitability for the procedure before and during their examination,.
- S6** Assess potential communication barriers and modify communication to ensure inclusivity and form relationships and rapport with all patients.
- S7** Acquire, interpret and report on the range of ultrasound examinations within their scope of practice with a high level of skill and accuracy.
- S8** Optimise the ultrasound machine and controls to perform a high quality scan.
- S9** Use spatial awareness and psychomotor skills when manipulating the patient's body to produce accurate ultrasound images.
- S10** Distinguish between normal and abnormal appearances evident during the ultrasound examination and on resultant ultrasound images, and document findings in a written report.
- S11** Critically evaluate the quality of ultrasound images for clinical manifestations and technical accuracy in relation to their diagnostic value.
- S12** Work both independently and in a multi-professional team.
- S13** Use physical, graphical, verbal and electronic methods to collect and analyse information from a range of sources including service user's clinical history, diagnostic images and reports, pathological tests and results.
- S14** Operate ultrasound equipment and related accessory equipment safely and accurately, and take appropriate action in the case of faulty functioning and operation.
- S15** Apply the risk-benefit philosophy to ultrasound safety considerations to protect both individual service users and the population.
- S16** Select and explain the rationale for examination and treatment techniques and immobilisation procedures appropriate to the service user's physical and disease management requirements.
- S17** Take responsibility for reasoned decisions when performing a broad range of clinical, technical, managerial or scientific procedures and record appropriately.
- S18** Recognise verbal and non-verbal cues that indicate the patient may require emotional and psychological support.
- S19** Seek clinical supervision to ensure support whilst dealing with possibly distressing and difficult circumstances.
- S20** Seek advice from or refer to another professional when findings are outside your scope of practice.
- S21** Initiate resolutions to ultrasound problems using a comprehensive range of cognitive and practical skills associated with ultrasound.
- S22** Manage risk and report concerns about safety, and be open when things go wrong.
- S23** Keep accurate records of own work and promote and protect the interests of patients, staff, and public.
- S24** Maintain and respect patient confidentiality while following local safeguarding policy and national guidelines.



- S25** Recognise and respond appropriately to situations where it is necessary to share information to safeguard ultrasound patients or the wider public.
- S26** Provide patients or their advocates with the information necessary to enable them to make informed decisions, with regular reappraisal of their information needs, as appropriate.
- S27** Manage own workload and resources effectively and be able to practice accordingly.
- S28** Integrate theoretical and practical knowledge in order to solve problems.
- S29** Work within the limits of own knowledge and skills, delegate appropriately. Lead and manage in accordance with your level of responsibility.
- S30** Maintain and further develop your own skills and knowledge
- S31** Ability to support and facilitate learning for others.
- S32** Contribute to the development, design, and implementation of clinical audit and service improvement initiatives and use evidence-based research and clinical trials outcomes to explore and develop own clinical practice.
- S33** Work in partnership with service users, other professionals, support staff and others, and contribute effectively to work undertaken as part of a multi-disciplinary team.
- S34** Reflect critically on practice and contemporary evidence that underpins ultrasound practice, and apply critical thinking and problem solving to professional decision making.
- S35** Apply findings from patient feedback audit and clinical trials to practice.
- S36** Apply conflict resolution strategies appropriately.
- S37** Keep accurate, comprehensive and comprehensible records and other information in accordance with applicable legislation, protocols and guidelines.
- S38** Reflect on and learn from clinical incidences and complaints, and share learning with peers.
- S39** Signpost patients and their families to the patient complaint process, support them and colleagues during incidences and the reporting process.
- S40** Use information and communication technologies appropriate to their practice.
- S41** Remove and re-apply dressings and supports appropriately and in a safe, effective and considerate manner.
- S42** Use basic life support techniques and be able to deal safely with clinical emergencies

## Behaviour

- B1:** Behave with dignity, respecting an individual's diversity, beliefs, culture, needs, and preferences.
- B2:** Show respect, empathy and the right to privacy for everyone in their work environment and have the courage to challenge areas of concern.
- B3:** Be adaptable, reliable, and consistent.
- B4:** Show discretion, resilience and self-awareness.

**B5:** Act with professionalism, honesty, integrity and respect in all interactions. Maintain good character as outlined in their professional code of conduct and not bring their profession or organisation into disrepute.

**B6:** Demonstrate emotional intelligence, remaining calm in distressing and adverse situations.

## Qualifications

### English and Maths qualifications

Apprentices without level 2 English and maths will need to achieve this level prior to taking the End-Point Assessment. For those with an education, health and care plan or a legacy statement, the apprenticeship's English and maths minimum requirement is Entry Level 3. A British Sign Language (BSL) qualification is an alternative to the English qualification for those whose primary language is BSL.

### Other qualifications

**Mandatory qualification 1: BSc Honours Ultrasound; BSc Honours Medical Ultrasound; BSc Honours Diagnostic Imaging; BSc Honours Diagnostic Ultrasound; BSc Honours Medical Imaging (Ultrasound); BSc Honours Ultrasound Imaging**

**Level of qualification:** 6 (integrated degree)

**Basis for mandatory qualification:** Hard sift

Type of qualification

Type 2 off-the-job qualification

University 1

The name of all the Universities delivering the integrated degree

Sheffield Hallam University

University 2

The name of all the Universities delivering the integrated degree

Birmingham City University

University 3

The name of all the Universities delivering the integrated degree

Teesside University

University 4

The name of all the Universities delivering the integrated degree

City, University of London

## University 5

The name of all the Universities delivering the integrated degree

University of Cumbria

## University 6

The name of all the Universities delivering the integrated degree

University of Leeds

Evidence for mandating the qualification: please upload 10 job adverts from employers representative of the sector including small employers (fewer than 50 employees) showing the qualification as an entry requirement and provide a summary below of evidence of support for inclusion of the qualification from your consultation on the occupational standard

Until now, it has only been possible to train to be a Sonographer at Master's level, having already achieved an undergraduate degree in Diagnostic Imaging or Radiography. Concurrently with the work of this trailblazer, Health Education England has managed a national project to review sonography training and career frameworks, and one of the outcomes has been to agree to develop entry level sonography training at level 6, both through degree apprenticeships and full time undergraduate study. The level 6 educational standards were approved by the HEE working group in June 2018 and the first undergraduate courses, including degree apprenticeships, can now be developed and accredited by the Consortium for the Accreditation of Sonography Education (CASE). Therefore, all job adverts for sonographers are currently at band 7 and state the requirement for a Master's level qualification as level 6 qualifications and band 5 and 6 roles have not yet been available.

## Professional recognition

Society and College of Radiographers / Sonographer

British Medical Ultrasound Society / Sonographer

## Additional details

**Occupational Level:** 6

**Duration (months):** 36

## Review

This standard will be reviewed after three years.

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## Version log

VERSION	DATE UPDATED	CHANGE	PREVIOUS VERSION
1	15/02/2019	Standard first published	Not available