

## CI.C.2019 Perform, interpret and report on ultrasound examinations

### OVERVIEW

This standard covers performing, interpreting and reporting on ultrasound images of anatomical structures. Imaging may be undertaken as part of a screening, diagnostic or monitoring process. Key people are those involved in the individual's care and others involved in provision of services, including chaperones. Users of this standard will need to ensure that practice reflects up to date information and policies. Version No 2

### KNOWLEDGE AND UNDERSTANDING

You will need to know and understand:

1. legal, organisational and policy requirements relevant to your role, the role of others in your organisation and the activities being carried out
2. the relevant national and local standards, guidelines, policies and procedures that are available and how and when they should be accessed
3. the importance of respecting individuals' culture, privacy, dignity, wishes, beliefs and decisions and how to do so
4. the limitations of your own knowledge and experience and the importance of operating within your scope of practice
5. preparation of the environment and equipment for ultrasound examinations
6. local policy and protocol for arranging and working with a chaperone
7. the physical processes involved in the production of an ultrasound image
8. the biological effects and potential risks associated with the use of ultrasound
9. the principles and applied knowledge of the Doppler effect and its clinical application in imaging and diagnosis
10. artefacts on images - their causes, value, limitations and minimisation strategies
11. the effect of sound propagation through different tissues
12. techniques to optimise the ultrasound image including position and preparation of the individual
13. the safe operation of ultrasound equipment
14. the potential for work-related disorders and how to minimise the risk
15. the importance of timely equipment fault recognition and local procedures for reporting these
16. image capture and recording devices
17. equipment age and capabilities, limitations and routine maintenance, including the quality control processes required by the operator

- 18.the function, specification and performance characteristics of ultrasound equipment and transducers
- 19.the clinical conditions appropriate for ultrasound examinations and the implications of other disease processes relevant to the area of study
- 20.the clinical justification of the examination request and an understanding of limitations
- 21.the contraindications associated with each investigation and the implications of proceeding with due consideration of related risks
- 22.the clinical implications of any allergy relevant to the examination
- 23.the importance of obtaining valid consent in line with national and local guidelines
- 24.methods of communicating difficult and complex information to individuals and key people
- 25.the importance of providing individuals and key people with opportunities to ask questions and increase their understanding
- 26.the information that should be given to individuals before, during and on completion of the examination
- 27.how to adapt communication styles, ask questions, and listen carefully in ways which are appropriate for the needs of the individual
- 28.normal anatomy and physiology, normal variants and anatomical relationships demonstrable by ultrasound including knowledge of normal measurements and predisposing factors of the individual
- 29.how to acquire the best possible diagnostic images for a range of type and size of individual
- 30.recognition of abnormal anatomy and physiology demonstrable by ultrasound and the significance of such abnormality
- 31.the pathological processes and their appearance on ultrasound, relevant to the examination undertaken
- 32.manifestations of an individual's physical and emotional status
- 33.the impact of equipment controls on image quality and production, and safety indices
- 34.local procedures pertaining to the examination report
- 35.report writing techniques including medical terminology and standard abbreviations relevant to the examination
- 36.alternative imaging examinations, diagnostic and interventional techniques, and other relevant investigations
- 37.referral pathways, follow-up procedures and support resources for the individual
- 38.procedures relating to recording, collating and preparing appropriate information, documentation and images for transfer or storage according to local protocols
- 39.how to keep full, accurate and clear records in line with organisational procedures

## PERFORMANCE CRITERIA

You must be able to do the following:

- 1.apply standard precautions for infection prevention and control, and other appropriate health and safety measures
- 2.ensure all necessary preparations have been made by the individual and staff before starting the procedure
- 3.check and prepare the equipment required for the examination
- 4.ensure the environment is conducive to maintaining the privacy and dignity of the

- individual
- 5.check the identification and clinical history details before commencing the procedure in accordance with local policies and procedures
  - 6.introduce yourself and other members of staff present during the examination
  - 7.review any previous relevant imaging where available
  - 8.enter the identification details of the individual into the ultrasound machine or, if previously entered, check for accuracy
  - 9.obtain valid consent for the procedure in accordance with national and local guidelines
  - 10.respect the individual's privacy, dignity, beliefs and decisions
  - 11.confirm the appropriateness of key people before the examination in accordance with local guidelines
  - 12.communicate with the individual / key people to facilitate their understanding of and co-operation with the examination
  - 13.establish the individual's capacity to understand the procedure with the help of key people if necessary
  - 14.clearly explain the procedure and possible outcomes, including risk, benefits and limitations
  - 15.check for any contraindications for the proposed procedure and take appropriate action in response to identified risks
  - 16.ensure the individual is in an appropriate and comfortable position for the examination, ensuring clothing is suitably adjusted to facilitate the examination
  - 17.select and prepare the appropriate imaging technique, transducer and initial scanning parameters for the individual and the site under examination
  - 18.apply sufficient acoustic coupling gel to the area to be examined to ensure optimal sound transmission
  - 19.make adjustments to the equipment controls to optimise the image quality and recognise the appearance of ultrasound artefacts
  - 20.ensure power levels and insonation time are kept to a minimum in accordance with national and international safety guidelines
  - 21.acquire and interpret appropriate ultrasound images and produce a report in accordance with your scope of practice and in-line with national and local guidelines and protocols
  - 22.observe and be aware of the individual's condition and well-being at all times and take appropriate action in response to any signs of discomfort and/or distress
  - 23.take appropriate steps to minimise the risk of work-related disorders
  - 24.maintain communication with the individual / key people throughout the procedure
  - 25.record images with appropriate annotation and measurements according to national and local guidelines and protocols
  - 26.extend the procedure as appropriate to confirm or supplement any initial findings
  - 27.seek advice from appropriate others where you observe unexpected appearances or unusual findings that are outside your area of personal competence
  - 28.provide the individual with information relating to the procedure and aftercare where necessary
  - 29.explain the process for obtaining results
  - 30.advise a referral to the appropriate person if an abnormality is observed which is likely to require further investigation or treatment, following national and local guidelines and protocols
  - 31.record, collate and prepare appropriate information, documentation and images for transfer or storage according to local protocols
  - 32.verify that the images have arrived/been stored according to local protocols

## ADDITIONAL INFORMATION

This National Occupational Standard was developed by Skills for Health. This standard links with the following dimension within the NHS Knowledge and Skills Framework (October 2004): Dimension: HWB6 Assessment and treatment planning