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# Principles for podiatrists using ultrasound imaging (USI)/point of care ultrasound (POCUS)

Version 1.1 06 September 2024

Authors: Mr Jai Saxelby, Professor Heidi Siddle, Dr Lisa Wright, Mr Lawrence Ambrose

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# Introduction

This document has been developed by the Royal College of Podiatry (RCPod) to provide information for Health and Care Professions Council (HCPC) registered podiatrists, service providers and other stakeholders with an interest in the use of ultrasound imaging (USI) by podiatrists in the UK.

The information in this document sets out the current landscape of USI use and applications relevant to the podiatry profession in UK sectors of healthcare, including NHS services and independent practice. This document will refer to the considerations and requirements when used by podiatrists as part of their scope of practice in relation to meeting regulatory standards[1], and RCPod Clinical Standards[2].

This document should be read in conjunction with the RCPod document, *'Practice guidance for podiatrists when using ultrasound Imaging (USI) as part of their scope of practice.'*

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# Background information relating to the current USI landscape

Ultrasound (high frequency sound waves) travels through the body in a way, which makes it possible to form images via the echoes from tissues, thus allowing real-time imaging of a wide range of tissues, organs systems and pathologies. USI is used primarily for screening, diagnosis, and interventions, such as guided injections.

The use of USI as part of a patient's care starts with the decision to request an ultrasound scan by the assessing podiatrist. Traditionally, USI would be undertaken by an imaging professional, such as a radiologist or sonographer who has been trained to perform a range of scans and interpret and report their findings. On receiving the report, the requesting podiatrist would then make further decisions about the patient's management informed in part by this information.

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# Sonography/ultrasound regulations

A radiologist is a type of doctor who specialises in medical imaging to diagnose and treat diseases, ultrasound is one of the imaging methods they can use. Sonographers are healthcare professionals qualified to independently undertake, interpret, analyse, and report on diagnostic, screening, or interventional ultrasound examinations. Sonographers are not recognised as a statutorily regulated healthcare profession and there is no legal requirement to hold a recognised ultrasound qualification to practice as a sonographer in the UK. However, most employers require evidence of Consortium for the Accreditation of Sonographic Education (CASE) accredited training, or equivalent, to work as a sonographer in the NHS.

A Podiatrist should be aware of the regulatory requirements relating to ultrasound practice in the country they practice. In England, the Care Quality Commission (CQC) regulates health and social care, and it is a legal requirement under the Health and Social Care Act 2008 to register with the CQC if a practice is providing diagnostic and screening procedures, such as ultrasound[3]. Whilst in Wales, the Health Inspectorate Wales (HIW) regulate health and social care[4], in Scotland, Healthcare Improvement Scotland (HIS) are responsible for regulation of health and social care[5], and in Northern Ireland, The Regulation and Quality Improvement Authority (RQIA) regulate health and social care[6]. Podiatrists are not required to be registered with those regulators to use US in practice.

# Changes in who undertakes USI

There is an increasing demand for USI, driven by the expansion of applications, and provision constrained by a chronic shortage of radiologists/sonographers. With the emergence and access to standardised training and mentorship with resulting certification, USI skills are being acquired and

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used by other healthcare professionals, including podiatrists, who are expanding their scope of practice and roles in both NHS and private healthcare settings. These new applications usually relate to a focused use of USI, which has been compelled by a necessity for either immediate medical care, e.g. emergency medicine (A&E)*, to reduce delays in patient care because of prolonged wait times for imaging services, and the need to perform procedures more safely e.g., guided injections[7]. The application of USI into a clinical role, is known as **'point of care ultrasound' (POCUS**), the primary role i.e. screening, diagnosis and interventions of USI remains the same as it would be for an imaging professional, only the timing, context and who undertakes USI has changed. The aim of using POCUS is to enhance the patient experience through instant access to diagnosis, implementation of the most appropriate clinical pathway and achievement of the optimal outcome in the shortest possible time frame. It has been demonstrated that assessment, investigation, and initiation of treatment at the initial appointment (one stop clinic) is cost-effective, with increased patient satisfaction and a reduced number of hospital appointments[8]. There is specific evidence to show the utility of USI enhancing the accuracy of diagnosis in a Rheumatology Podiatry clinic[9].

*Emergency Ultrasound is the use of USI for the bedside evaluation of acute or critical medical conditions.

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# Point of care ultrasound (POCUS): applications in podiatry

It has been highlighted that the use of USI is extremely valuable to podiatrists in relation to diagnosis, delivery and access of care, patient education, engagement, and empowerment, especially for those working in the fields of musculoskeletal (MSK) disease, rheumatology, and diabetes[10, 11]. A survey of ultrasound practice amongst podiatrists in the UK, showed the most prominent field of use by podiatrists was in MSK with 37% using it to assist diagnosis, as well as using it to guide steroid injections and nerve blocks[12].

A proof-of-concept trial showed the positive benefit of podiatrists using POCUS in an orthopaedic triage setting for the patient's care pathway, as well as showing clinical benefit and adequate demand for the service[13]. Examples from different parts of the UK have been used to illustrate how USI maybe used in podiatric practice; several of which were combined with rheumatology to provide clinical services, research, and education and demonstrates the use of USI in aiding the assessment of rheumatoid arthritis (RA) foot disease by detecting inflammatory changes and marginal erosions earlier than conventional x-rays, therefore providing a window of opportunity for earlier diagnosis and treatment[14 , 15]. The use of a structured training programme integrated into a diabetic foot clinic demonstrated the effectiveness in providing vascular POCUS for the detection of peripheral arterial disease in people with diabetes, thus offering another application of POCUS use within podiatric practice[16]. Further, in podiatry, USI has a wider use in research and patient education[17].

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# New sonographic roles and responsibility

With the development of POCUS there are two routes that can be utilised to provide USI to a patient's care i.e., the traditional imaging service option, or POCUS provided within the clinical specialty in which the patient's care resides.

However, the lack of regulation and no obligation to hold an ultrasound qualification, has led to inconsistencies in how USI is being utilised by clinicians in a POCUS context, with some clinicians using it to support their clinical assessment rather than to diagnose, which some infer as a desire to avoid responsibility for their actions by denying they are using it for diagnostic reasons[18].

In response to this change in who can undertake USI and better reflect the USI landscape, the term ultrasound practitioner (UP) has been adopted and defined as: '*A healthcare professional who holds recognised qualifications in medical ultrasound and is able to competently perform ultrasound examinations falling within their personal scope of practice. The professional background of UP can be very varied and will include radiologists, radiographers, sonographers, midwives, physiotherapists, obstetricians, and clinical scientists*[19]. Podiatrists are not currently included in this definition.

In their recent information paper on POCUS use in physiotherapy (2022) the Chartered Society of Physiotherapists (CSP) have published a clear and up to date definition of POCUS in physiotherapy practice; 'Point of Care Ultrasound in physiotherapy practice is the use of ultrasound imaging (Ui) technology to assist the registered physiotherapist in screening, diagnosis, intervention and /or treatment of any condition within the practitioner's scope of physiotherapy expertise and competence. POCUS must be used within the overarching framework of providing physiotherapy management of the condition which addresses any element of human movement, performance,

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and function in the widest sense, and at any point within the pathway of care for that condition.'[20] The CSP further state a physiotherapist *'must also be educated, trained and competent in POCUS for it to form part of their personal scope of practice',* which aligns with the definition of an UP, although they make a separation, stating there is a difference between POCUS within physiotherapy practice and practice as a sonographer[20, 21].

# Is POCUS any different to career sonography* in delivering an ultrasound diagnosis?

Under the Health and Social Care Act 2008[22], the CQC requires those services providing diagnostic and screen procedures, such as ultrasound, to be registered and follow their framework[23], however physiotherapy practice is exempt from this requirement, whilst other clinical professions working in a similar POCUS capacity are not*. Further clarification from the CQC would be helpful for POCUS users to determine if registration is required or not.

*Sonography: the diagnostic or therapeutic use of ultrasound (see ULTRASOUND sense 1:vibrations of the same physical nature as sound but with frequencies above the range of human hearing) and especially a non-invasive technique involving the formation of a two-dimensional image used for the examination and measurement of internal body structures and the detection of bodily abnormalities. **https://www.merriam-webster.com/dictionary/sonography**

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# USI professional bodies

Ultrasound specific professional bodies such as CASE, BMUS (British Medical Ultrasound Society) and The Society and College of Radiographers (SCoR) support POCUS practice by those with appropriate skills, training, competence and on-going audit and CPD.

### Consortium for the Accreditation of Sonographic Education (CASE)

CASE was formed in 1993, and currently consists of seven member organisations (MO)*, who decide the strategic direction and policy of CASE; the RCPod joined as a MO in 2017. The primary role of the consortium is to accredit high quality training programmes/awards that promote best practice, ensuring the UPs are safe and competent to practise; this was the primary reason for the RCPod joining CASE and to be involved in future discussions about standards, governance, and clinical guidance, thus it is essential the RCPod remains a member for the benefit of its membership. CASE provides comprehensive information relating to the standards for sonographic education which includes standards of proficiency for sonographers and is based on the HCPC standards of proficiency for a Radiographer, which follows a similar framework to that for podiatrists[24].

### British Medical Ultrasound Society (BMUS)

BMUS is a multi-disciplinary body drawn from a wide range of disciplines, including medical, paramedical, physicists, engineers, nurses, midwives, vets, and many other professionals with an interest in medical ultrasound. Their primary objectives include:

- *The advancement of science and technology of ultrasonics as applied to medicine.*
- *The maintenance of the highest standards in these fields.*
- *The advancement of education and research in these fields, and dissemination of the results.*
- *The provision of advice and information regarding ultrasound to the public at large[25].*

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In collaboration with the SCoR, BMUS produced a document entitled 'Guidelines for Professional Ultrasound Practice'[26] which is for those involved in USI and has been written to complement the 2014 (updated in 2017) joint document by the Royal College of Radiologists (RCR) and the SCoR, standards for the provision of an ultrasound service[19]. This document states that the guidelines presented are not prescriptive but are available to be used as recommendations for good practice, covering topics, such as governance, safety, medico-legal issues, education and accreditation and an introduction to a range of USI that are available, however, they are regarded as the benchmark for good practice for those undertaking USI. More recently, the collaboration by the BMUS and the RCR: Recommendations for specialists practising ultrasound independently of radiology departments: Safety, governance, and education has been published to specifically guide those undertaking USI in a non-radiology environment i.e., POCUS, which are relevant to podiatrists[27].

# Education, training, and competency for podiatrists undertaking USI

With its useful clinical applications, lowering costs of equipment, no radiation burden and apparent ease of use, USI is becoming more popular with podiatrists. However, some of these factors are potential drivers for misuse and podiatrists should not underestimate the cost of misdiagnosis[28, 29]. Considering these risks and concerns the RCPod recommends that any member who wants to use USI must undertake a CASE accredited programme/award that aligns with their personal scope of practice for USI/POCUS use and comply with the relevant regulator (HCPC) standards[1].

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## What education, training and competency is required by podiatrists undertaking a USI?

The use of ultrasound is a skill that is currently acquired post-registration and like all activities the podiatrist must ensure they are educated, trained and competent for it to be used within their scope of practice.

The extent of the training required will be dependent on the podiatrist's scope of USI/POCUS practice. However, regardless of the breadth of their USI/ POCUS practice all clinicians must have the same depth of knowledge and understanding of ultrasound principles and practice i.e., core topics.

### Core Topics

According to CASE Standards of Sonographic Education[24], as well as their validation and accreditation handbook[30], the core topics that underpin ultrasound, include:

- **Science and Technology**

  This includes the principles of USI, ultrasound and its propagation in tissue, image generation, artefacts, principles of Doppler ultrasound, development of technology, equipment choice and manipulation, equipment appraisal and evaluation, image recording, ultrasound bio-effects and quality assurance, all of which are linked to image acquisition and interpretation[30].

- **Professional Studies**

  This will include communication, Patient Care and Advocacy, Health, and Safety (including ergonomics and infection control), Image Appraisal, Clinical Reporting, Judgement and Decision-Making, Clinical Audit, Evidence-based Practice and Clinical Governance, National and Local Healthcare Policies and Ethics, Promoting Health and Wellbeing, Self-development, and Critical Appraisal Skills[30].

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## Specific Clinical Areas of USI/POCUS

Along with the study of core topics, the podiatrist must decide on their scope of USI/POCUS practice. The CASE validation and accreditation handbook, as well as Standards for Sonographic Education document requires accredited courses to identify a specific clinical topic/module, specific to the health professionals remit of professional practice. For example, a podiatrist specialising in MSK work would be required to complete an MSK ultrasound module for the foot & ankle (which should align with the podiatrist's personal scope of practice in relation to USI use), and will need to include the following in relation to each clinical topic (module): Applied anatomy, physiology and patho-physiology, scanning methods and techniques, including relevant measurements, power Doppler, colour flow mapping and spectral analysis, use and applications of ultrasound contrast agents (as appropriate to practice), ultrasound appearances , including normal anomalous appearances and the appearances of common pathological processes, clinical reporting, the contribution ultrasound makes to the clinical management of patients and the role and value of complementary imaging[24, 30].

## Supervision and mentoring

A clinical placement with appropriate levels of supervision and mentoring are an essential part of any CASE accredited course and students will not be accepted onto a course until this and access to a patient list and ultrasound equipment has been agreed and organised. However, finding a suitable mentor is a known challenge and barrier to ultrasound training, which requires exploration to strengthen mentoring opportunities and access moving forward. For those podiatrists wanting to undertake a mentoring role, they must have at least a PgCert in medical ultrasound, or equivalent and a minimum of 2 years' experience in the relevant scope of practice[31] and should be given support and training to undertake this role by the education provider.

## Modules and the level of training required.

The primary outcome required by CASE for programmes/modules delivering USI education are that they teach and assess competency to practice. All modules and programmes are required to be

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mapped to the relevant CASE learning outcomes in the document '*Standards for Sonographic Education',* to show how these are met within the programme, and to National Occupation Standards (NOS)[24].

- *For academic level 7 programmes for existing health care professionals, mapping should be for the level 7 learning outcomes and ultrasound imaging NOS.*
- *For academic level 6 programmes and direct entry level 7 programmes, mapping should be to the level 6 learning outcomes and ultrasound NOS plus the 'Standards of Proficiency for a Sonographer' (based on HCPC standards).*
- *For programmes with modules that include interventional procedures, mapping to the interventional NOS should also be completed.*

### Case directory of education programmes

CASE maintains a directory of programmes/awards and focused courses which are accredited by the CASE Committee; **accreditation is only given to programmes/awards or focused courses that incorporate the assessment of clinical competency skills within its portfolio,** which aligns with the HCPC standards requirements in relation to appropriate competency for the individual's defined scope of practice.

**HCPC Regulation relating to Podiatry and the use of USI (POCUS) within a podiatrist's scope of practice**.

'Chiropodist/Podiatrist' is a protected title, and the profession is regulated by the HCPC who set the standards of proficiency.[*, 32]

[*] The reader should refer to the HCPC website for the most up to date standards.

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# HCPC and scope of practice

The HCPC recognises that a podiatrist's scope of practice may change over time and that practice may become more focused and specialised; the use of USI/POCUS being such an example.

In relation to scope of practice, the HCPC requires the following of a registrant:
*'You must only practice in the areas where you have the appropriate knowledge, skills and experience to meet the needs of a service user safely and effectively'*[1].

*'You must undertake additional training to update your knowledge, skills and experience if you wish to widen your scope of practice'*[1]

*'You must keep your knowledge and skills up to date and relevant to your scope of practice through continuing professional development'.*[1]

*'You must keep up to date with and follow the law, our guidance and other requirements relevant to your practice'.*[1]

*'Every time you renew your registration, you will be asked to sign a declaration that you continue to meet the standards of proficiency that apply to your scope of practice'.*[1]

The HCPC states *'we recognise the valuable role professional bodies play in representing and promoting interests of their members. This often includes providing guidance and advice about good practice, which can help meet the HCPC standards.'*[1].

The RCPod has defined training and governance for podiatrists using USI, in the document 'Guidance

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for podiatrists when using ultrasound imaging (USI) as part of their scope of practice' to support members in meeting HCPC standards.[33]

# Professional indemnity (Professional liability insurance)

The HCPC requires by law that registrants must have a professional indemnity arrangement in place when registered with them[34]. A podiatrist must make sure that their arrangement provides cover appropriate to their practice and take account of the nature and extent of its risks, this will include USI if that is within the podiatrist's defined scope of practice.

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# Conflicts of interest

The authors have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

# Acknowledgements

Dr Gareth Bolton-Senior Lecturer, University of Cumbria. Current Chair of CASE Committee
Gill Harrison-Professional Officer (Ultrasound), The Society and College of Radiographers
Dr Heather Venables-Senior Lecturer, University of Derby. Previous Chair of CASE Committee
Gill Dolbear-Principal Lecturer, Canterbury Christ Church University. CASE Education Officer

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# References


1) Standards of conduct, performance, and ethics. Health and Care Professions Council. 2023. **hcpc-uk.org/globalassets/standards/standard-of-conduct-performance-and-ethics/revised-standards-2023/revised-standards-of-conduct-performance-and-ethics.pdf**
2) Clinical podiatric practice guidelines. Royal College of Podiatry. 2024. **membersarea.rcpod.org.uk/podiatric-practice/professional-resources-area/standards**
3) Registration under the Health and Social Care Act 2008. The Scope of registration, p47 Diagnostic and screening procedures. Care Quality Commission. 2022. **cqc.org.uk/sites/default/files/2022-05/20220517%20Scope%20of%20Registration%20Guidance%20May%202022.pdf**
4) Who needs to register with us? Health Inspectorate Wales. 2017. **hiw.org.uk/who-needs-to-register-with-us**
5) Health Improvement Scotland. 2024. **healthcareimprovementscotland.org/**
6) The Regulation and Quality Improvement Authority. 2024. **rqia.org.uk/**
7) McKiernan S, Chiarelli P, Warren-Ford H. Diagnostic ultrasound use in physiotherapy, emergency medicine and anaesthesiology. Radiology 2010; 16, 154-159. **doi.org/10.1016/j.radi.2009.12.004**
8) Sivan M, Brown J, Brennan S, Bhakta B. A one-stop approach to the management of soft tissue and degenerative musculoskeletal conditions using clinic-based ultrasonography. Musculoskeletal Care. 2011; 9(2):63–8. **doi: 10.1002/msc.194**
9) Newcombe, L., Tougher, J., Woodburn, J., Barn, R. P237 Utility of diagnostic ultrasound in a rheumatology podiatry clinic, Rheumatology, Volume 59, Issue Supplement 2, April 2020, keaa111.231. **doi.org/10.1093/rheumatology/keaa111.231**
10) Bowen CJ. Extending the scope of practice of Podiatrists: A consideration of the use of Diagnostic Ultrasound Imaging. B J Pod Med; 2003; 6 (4):92-95. **eprints.soton.ac.uk/id/eprint/17819**

ROYAL COLLEGE of PODIATRY


11) Dando C , Ellis R, Carroll M, Molyneux P, Gijon-Nogueron G, Siddle HJ, Cherry L, Gatt A, Bowen C. Exploring the use of musculoskeletal ultrasound imaging by podiatrists: an international survey. Journal of Foot and Ankle Research; 2021 14:39. **doi.org/10.1186/s13047-021-00478-4**

12) Siddle HJ, Patience A, Coughtrey J, Mooney J, Fox M, Cherry L. Survey of ultrasound practice amongst podiatrists in the UK. J Foot Ankle Res. 2018; 11(18). **doi.org/10.1186/s13047-018-0263-4**

13) Morgan GE, Welch H., Jenkins D., Wroe LM. Proof of concept trial of diagnostic ultrasound in the orthopaedic triage setting. Open science journal; 2018; 3 (1). **osjournal.org/ojs/index.php/OSJ/article/download/1283/151**

14) Siddle HJ, Cherry L, McKeeman H, Newcombe L, Bailey J, Dando C. Musculoskeletal ultrasound for the foot and ankle. Podiatry Now; 2017;20(2).

15) Bowen CJ, Hooper L, Edwards CJ, Arden NK. Using ultrasound to image the foot in rheumatoid arthritis: Current understanding, challenges, and future scope. August 2013 Imaging in Medicine 5 (4):347-356. **doi:10.2217/iim.13.37**

16) Normahani P, Agrawal R, Bravis V, Falinska A, Bloomfield L, Mehar Z, Gaulton D, Sangster A, Arkle T, Gomm C, Aslam M, Standfield NJ, Jaffer U. Effectiveness of a multicenter training programme to teach point-of-care vascular ultrasound for the detection of peripheral arterial disease in people with diabetes. Journal of Foot and Ankle Research 2018); 11:41. **doi.org/10.1186/s13047-018-0283-0**

17) Newcombe L, Tougher J, Kelleher N, Woodburn J, Barn R. P086 Patient perceptions of musculoskeletal ultrasound as an educational tool in a rheumatology podiatry clinic, Rheumatology, Volume 61, Issue Supplement_1, May 2022, keac133.085. **doi.org/10.1093/rheumatology/keac133.085**

18) Edwards H. Let's all jump on the ultrasound bandwagon: further debate on the use of ultrasound. Ultrasound 2010; 18: 4–7. **doi:10.1258/ult.2009.009003**

19) Standards for the provision of an ultrasound service. The Royal College of Radiologists and the Society and College of Radiographers. 2017.

ROYAL COLLEGE of PODIATRY

**rcr.ac.uk/system/files/publication/field_publication_files/BFCR%2814%2917_Standards_ultrasound.pdf**

20) Information paper. Context of Physiotherapists using POCUS in physiotherapy practice – PD0138. Chartered Society of Physiotherapists. 2022. **csp.org.uk/publications/context-physiotherapists-using-point-care-ultrasound-pocus-physiotherapy-practice**

21) Information paper. Practice Guidance for Physiotherapists using Point of Care Ultrasound in physiotherapy practice-PD0139. Chartered Society of Physiotherapists. 2022. **csp.org.uk/system/files/publication_files/PD139_POCUSPracticeGuidance_e1_Apr22.pdf**

22) Health and Social Care Act 2008. **legislation.gov.uk/ukpga/2008/14**

23) Inspection framework: Diagnostic Imaging. NHS Acute and independent acute hospitals. Care Quality Commission. 2020. **cqc.org.uk/sites/default/files/20200715_Acute_NHS_and_IH_Diagnostic_Imaging_service_framework.pdf**

24) Standards for Sonographic Education. Consortium for Sonographic Education. 2022. **case-uk.org/standards/**

25) Promoting Ultrasound for Healthcare Professionals. British Medical Ultrasound Society. 2024. **bmus.org/**

26) Guidelines for Professional Ultrasound Practice. 8th Edition. Society of Radiographers. 2023. ISBN:978-1-1-909802-89-6. **sor.org/learning-advice/professional-body-guidance-and-publications/documents-and-publications/policy-guidance-document-library/sor-and-bmus-guidelines-for-ultrasound-8th**

27) Recommendations for specialists practising ultrasound independently of radiology departments: Safety, governance, and education. The Royal College of Radiologists. 2023. **rcr.ac.uk/system/files/publication/field_publication_files/recommendations_for_specialists_practising_ultrasound_independently_of_radiology_departments.pdf**

28) Chen DW, Reyes-Gastelum D, Radhakrishnan A ,Hamilton AS, Ward KC, Haymart MR, Physician-Reported Misuse of Thyroid Ultrasound, Journal of the Endocrine Society, Volume 4, Issue Supplement_1, April-May 2020, MON– 501. **doi:10.1001/jamasurg.2020.2507**

ROYAL COLLEGE of PODIATRY

29) Council Update: Application for the regulation of sonographers from the Society and College of Radiographers. Health and Care Professions Council. 2008. **hcpc-uk.org/globalassets/meetings-attachments3/council-meeting/2008/july/council_20080703_enclosure05/**

30) CASE Validation & Accreditation Handbook. Consortium for the Accreditation of Sonographic Education. 2020. **case-uk.org/handbook/**

31) CASE requirements for the Accreditation of Musculoskeletal Ultrasound Courses. Consortium for the Accreditation of Sonographic Education. 2023. **case-uk.org/information/position-statements/msk-requirements/**

32) Standards of conduct, performance, and ethics. Health and Care Professions Council. 2023. **hcpc-uk.org/standards/standards-of-conduct-performance-and-ethics/**

33) Practice guidance for podiatrists when using ultrasound imaging as part of their scope of practice. Royal College of Podiatry. 2024.

34) Professional indemnity and your registration. Health and Care Professions Council. 2014. **hcpc-uk.org/globalassets/resources/guidance/professional-indemnity-and-your-registration.pdf**