

Nurses Performing Ultrasound Scanning in Fertility Care

CLINICAL PROFESSIONAL RESOURCE



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Notes

It is recognised that care may be provided by registered nurses and midwives, health care support workers, assistant practitioners, nursing associates, student nurses and midwives, and trainee nursing associates. For ease of reading, the generic terms ‘nurse’, ‘nursing’ and ‘nurses’ are used throughout this document, unless specified.

The RCN recognises and embraces our gender diverse society and encourages this guideline to be used by and/or applied to people who identify as non-binary, transgender, or gender fluid.

The RCN also recognises that not all those born female or male will identify with the same gender nouns, but for ease of reading we use the term woman/man/men and where appropriate, acknowledge non-binary terms.

1 Introduction

The RCN aims to progress the careers of nurses working in fertility care, with a number of previous publications to enhance competence and enable managers and employers to support progression and career pathways of nurses.

In 2022, the RCN Fertility Nursing Forum held a round table event to discuss some of the key issues impacting on career progression, and subsequently published a consensus statement (RCN, 2023) which included:

- staffing for safe and effective care
- implementation of the RCN Fertility Nursing Education and Career Framework
- ultrasound training
- continuing professional development
- political awareness.

One of the issues identified was education and competence around the use of ultrasound scanning skills in fertility care by registered nurses advancing their skills and the lack of national guidance to support best practice.

For the purposes of defining ultrasound scanning as an advanced skill, RCN are referring to enhanced clinical expertise, ability to analyse and synthesise information, and being responsible for clinical governance. This includes reporting findings, which should not be separated from scanning (CASE Handbook 2022:5). CASE (2022) also affirms that USS is a *'dynamic' investigation in which the acquisition of suitable images and assessment of them is entirely operator-dependent at the time of the scan. Deficiencies in acquisition cannot be rectified by involving a more skilled practitioner at a later stage. Assessment and interpretation of saved images is recognised as sub-optimal practice although, as with all image interpretation, dual reporting can be helpful in increasing specificity* (CASE Handbook 2022:5).

This guidance is not about the role of supporting or assisting a competent practitioner who is carrying out the ultrasound procedure.

Key points recommended by the RCN include:

- ultrasound scanning is an advanced level skill
- a postgraduate certificate in ultrasound is recommended in terms of clinical expertise, ability to analyse and synthesise information, and for clinical governance
- national standards for education in ultrasound scanning are required to protect patients and nurses.

rcn.org.uk/Professional-Development/publications/education-and-career-progression-fertility-nursing-uk-pub-010-729

The use of ultrasound in fertility care is an advanced level skill, consequently nurses are well placed to develop competencies which can improve continuity of care, patient experience, and safety. When considering barriers to developing skills in ultrasound, discussions focused on level of education required for this advanced skill, unit staffing and skill mix, funding, protected time for learning and appropriate mentors/supervisors.

It was acknowledged by the project team that some nurses will be practicing ultrasound skills, having completed an initial education different to the recommendations here. As with any developing skill, it is the responsibility of the individual registrant to ensure they are competent and confident to practice at a contemporary level to meet current and future service requirements. Employers also have a responsibility to ensure opportunities are provided to ensure those skills are maintained and enhanced to meet current requirements.

Fertility nurses who are performing ultrasound independently in the fertility setting should be educated to/working towards master's level academic study and display master's level thinking and decision making. Nurses who choose not to pursue independent practice in ultrasound, should be clear about the support and supervision available to them in their place of employment.

An entry level course such as the British Fertility Society ultrasound module can support career progression and development of ultrasound skills in fertility care and develop those working towards further education in this area. This course is not currently CASE accredited or at academic level 7 but can support those who are currently practicing ultrasound (as a refresher/CPD) or who are interested in becoming an ultrasound practitioner.

Some nurses will pursue a full master's level degree, or equivalent, to advance their skills, knowledge, leadership, research and understanding of service provision, others may wish to continue scanning under supervision. Those who choose not to advance their skills need to understand the support systems available to them, and have confidence in their competence, knowledge, skills and expertise.

The RCN supports:

- a postgraduate certificate in ultrasound is recommended in terms of clinical expertise, ability to analyse and synthesise information, and for clinical governance. The ultrasound course should be accredited by the Consortium for the Accreditation of Sonographic Education (CASE), or equivalent. Nurse sonographer roles should be identified in staffing reviews and ensure that there are specific roles to be trained into
- some nurses (who have not accessed level 7 education previously) may require access to level 7 study assistance to access HEI courses
- protected time and funding should be standard to aid learning
- the learner working with a clinical mentor* who can provide feedback, support, and can assess their competence and development. It will also be useful to liaise with radiology/ultrasound colleagues and doctors for support

* Coaching and Mentoring (NHS Leadership Academy, 2022) leadershipacademy.nhs.uk/programmes/coaching-and-mentoring

CASE Validation and Accreditation Handbook case-uk.org/handbook (page 45 clearly outlines the requirements of mentors).

- every unit should have a comprehensive peer review system in place, so that once qualified, practice is continually assessed, in line with the NMC Code (2018), and have access to ongoing mentorship and support, and regular clinical review of cases
- a need for nationally recognised guidelines for nurses training and maintaining their skills in USS for the purposes of fertility care/practice. The framework identified the skills required around this area of practice, and this requires enhancing to give clear guidance around the overall requirements, for example accessing education courses, practice placement, mentors, peer review and ongoing support post qualifying.

Taken from: RCN (2023) *Education and Career Progression Framework for Fertility Nursing Consensus Statement*, available at: rcn.org.uk/Professional-Development/publications/education-and-career-progression-fertility-nursing-uk-pub-010-729

Advanced nurse practice standards

Ultrasound scanning is an advanced skill and the “RCN is clear that advanced practice is a level of practice, rather than a type of practice and is across all 4 pillars of nursing. This level is underpinned by a comprehensive range of knowledge, skills and capabilities within each of the 4 pillars of nursing: clinical practice, education, research and leadership. These will have been developed through studying a master’s degree in a relevant subject area with experiential learning or by demonstrating equivalence. Integration of the capabilities across the 4 pillars, together with critical reflection, enables a nurse working at the advanced level to function to their full potential and feel empowered to make decisions in the workplace” (RCN, 2023a).

Registered nurses working at this advanced level must:

- have an active registration with the NMC
- practice within the 4 pillars of clinical, education, leadership and research
- have a job plan that demonstrates advanced nursing practice and has equity with peers working at this level
- be educated to master’s level
- be an independent prescriber (if a requirement within their setting)
- meet NMC revalidation requirements
- demonstrate autonomous evidence.

(RCN, 2024a)

Ultrasound scanning in fertility care is focused on a screening scan for the purposes of assisted reproduction, and where a suspected abnormality or pathology is identified onwards referral is vital for a full diagnostic scan. This should be undertaken by a qualified and appropriately skilled clinician for the purposes of diagnosis.

The RCN professional framework aims to articulate and clarify the differing roles and responsibilities in nursing and clarify role progression, including levels of practice. See further information at: rcn.org.uk/Professional-Development/Levels-of-nursing

Routes to extending academic skills

Advanced level nursing focuses on professional development and is underpinned by nursing education and critical thinking. Education for advanced practice in ultrasound scanning and critical thinking should be at master's level, and investment in nurses to enhance their practice is critically important for both patients/women and professional development to deliver better health care provision.

Demonstrating learning at master's level/advanced practice is important for career development and there are processes available for those who may not have had the opportunity to complete a full programme at this academic level. This includes being able to demonstrate and recognise former learning from experience such as recognition of prior learning (RPL) and recognition such as credentialing.

- **Recognition of prior learning (RPL)** Many students enter higher education with valuable knowledge and skills developed through a range of professional contexts. Both formal study (certificated) and informal learning (via work experience) may be accredited for either entry to a programme of study or, where the learning is at the right level, to gain exemption from parts of the programme.

It is important to stress that credit is not given for experience alone but from the learning gained through that experience. To receive RPL, evidence must be provided of prior achievements which are formally mapped and assessed against course learning outcomes. This process enables an academic judgment to be made of the amount of credit that can be granted, or for course enrolment without the formal entry requirements. In making this assessment, universities are assured that all students receiving an award have achieved the course requirements through studying the course in full or using some of their previous experience or qualifications. Learners wishing to claim RPL should contact their local university admissions office, and further information is available at: qaa.ac.uk/docs/qaa/quality-code/making-use-of-credit.pdf

- **Credentialing** is an RCN process for assessing the background and legitimacy of nurses to practice at an advanced level through assessing their qualifications, experience and competence. It allows nurses and midwives to gain formal recognition of their level of expertise and skill in their clinical practice, their leadership, their education, and their research in a way that is recognisable to colleagues, employers, patients and the public. RCN Credentialing is open to nurses and midwives who can demonstrate that they are working at an advanced level, practise in the NHS or independent sector and this is open to members or non-members of the RCN. Further information can be found at: rcn.org.uk/Professional-Development/Professional-services/Credentialing

Health care support workers, junior/new to fertility nurses and ultrasound scanning

There are various roles within fertility care which may involve assisting with ultrasound scanning. These include (but are not limited to) health care support workers, newly qualified and new to fertility care nurses, more experienced fertility nurses, operating theatre practitioners and theatre nurses. Assisting with ultrasound procedures is defined as providing support to a competent practitioner who is carrying out the ultrasound procedure and can include:

- assisting with ultrasound procedures by holding an ultrasound probe after placement by the operator
- adjusting settings on the ultrasound machine upon instruction from the operator
- acting as a chaperone for any ultrasound procedure.

It is important to understand that these role aspects, although an important part of fertility care, are not covered by this document and should only be carried out by those trained to carry out the procedures and under complete supervision of a competent practitioner.

Further information on competency and fertility nursing roles can be found at: rcn.org.uk/Professional-Development/publications/rcn-education-and-career-progression-framework-for-fertility-nursing-009-926-uk-pub

2 Essential skills for nurses: USS techniques in fertility care

These guidelines are designed for nurses using ultrasound scanning as part of their comprehensive role in fertility care, rather than sonographers, whose career focus is ultrasound scanning. The RCN recognises that nursing is a safety critical profession founded on 4 pillars: clinical practice, education, research and leadership (RCN, 2024), more information is available at: rcn.org.uk/Professional-Development/Definition-and-principles-of-nursing

The 4 pillars are used to explain the requirements for advanced practice.

Clinical practice

Ultrasound scanning is an advanced skill, and [section 3](#) outlines the different types of scans used, including making the distinction between initial and more advanced skills (see also Benner's stages of clinical competence on [page 17](#)).

Clinical practice preparation will include theory and practice, and is a combination of understanding the equipment used, the techniques employed for the different scans, and the use of the nurses' range of clinical skills including information giving, effective and appropriate communication, consent, and patient care. Access to clinical placements to develop these skills is essential and should be considered and agreed prior to embarking on a programme of education.

Education

As an advanced skill, academic level 7, or equivalent, learning is required, with a minimum postgraduate certificate as an entry level to ultrasound training. Courses such as the British Fertility Society ultrasound module can support development of ultrasound skills in fertility care for continuing professional development, or those interested in becoming an ultrasound practitioner. It may be that some nurses will pursue a full master's level degree, or equivalent, to enhance their skills, knowledge, leadership, research and understanding of service provision.

Leadership

The role of nurse leadership in fertility ultrasound care, includes clinical expertise, management skills, patient care co-ordination, and team leadership. Leadership also requires engaging in education, research, and policy development to enhance care quality and access to fertility services. This leadership role is crucial for providing high-quality care to individuals and couples seeking fertility treatments, for promoting safe and effective ultrasound care and for ensuring that nurses performing ultrasound within the fertility care setting share best practice and promote professionalism.

The NHS Leadership Academy developed the *Healthcare Leadership Model* (leadershipacademy.nhs.uk/healthcare-leadership-model) to enable nurses to become better leaders in their day-to-day roles. The model consists of 9 leadership dimensions, with each dimension shown on a 4 part scale, ranging from 'essential' through 'proficient', 'strong' to 'exemplary'. This can help fertility nurses understand their leadership development needs.

The 9 dimensions contain a description of what it is and why it is important. There are a series of questions to guide peoples' thoughts and result in effective leadership behaviour. The questions can also help nurses to explore intentions, motivations and strengths and as well as areas for development.

1. Inspiring shared purpose.
2. Leading with care.
3. Evaluating information.
4. Connecting our service.
5. Sharing the vision.
6. Engaging the team.
7. Holding to account.
8. Developing capability.
9. Influencing for results.

Research

Nurse audit and research in ultrasound involves evaluating and assessing the quality, effectiveness, and safety of ultrasound services. Through auditing, nurses review patient records, examine ultrasound images, assess staff competencies, and ensure compliance with guidelines. In research, they may conduct studies exploring new technologies, techniques, or protocols, contributing to evidence-based practice. Audit and research in fertility ultrasound ensures high-quality, safe, and effective care, reflective practice and enhances patient care.

3 Ultrasound scanning techniques for fertility care nursing competencies

Ultrasound is a complex skill and is used in many areas of clinical practice. Nurses who are engaged in ultrasound scanning in fertility care may be involved in a range of different types of ultrasound scanning activities, as outlined below in Table 1.

Table 1 Matrix of the different types of fertility nursing scanning and the relevant skill required for each

Type of ultrasound scan	Definition	Competency/skill/knowledge required	Using Benners (see page 17) stages of clinical competence
Initial baseline/assessment scan	A transvaginal scan to assess the pelvic anatomy and to assess fertility. While assessing the pelvis the uterus and ovaries should be assessed in depth and a full antral follicle count and ovarian volume should be taken to gain a clearer understanding of current fertility.	<ul style="list-style-type: none"> • Proficiency in operating the ultrasound equipment, using the transvaginal probe, and obtaining clear images of the pelvic structures. • An indepth understanding of the pelvic anatomy, including the uterus, ovaries, and antral follicles, as well as the ability to differentiate between normal and abnormal findings. • Be able to recognise uterine, endometrial and ovarian pathologies such as fibroids, polyps, ovarian cysts and adnexal masses, hydrosalpinx. • The skill to interpret the images, assess the uterine lining, detect any abnormalities, count antral follicles accurately, and measure ovarian volume. • Ability to make clinical decisions based on the findings and communicate them effectively to other health care professionals and to the patient. 	Competent Proficient Expert
Follicle tracking scan - natural cycle	A transvaginal scan to assess follicle growth and endometrial measurement during an individual's natural cycle. It is used as an aid to assist in predicting ovulation or confirming ovulation has taken place.	<ul style="list-style-type: none"> • Proficiency in operating the ultrasound equipment, using the transvaginal probe, and obtaining clear images of the pelvic structures. • An indepth understanding of the pelvic anatomy, including the uterus, ovaries, and antral follicles, as well as the ability to differentiate between normal and abnormal findings. • The ability to analyse images, evaluate the uterine lining, identify any irregularities, count antral follicles, measure ovarian volume, and check for signs of ovulation. • Ability to make clinical decisions based on the findings and communicate them effectively to other health care professionals and to the patient. 	Competent Proficient Expert

<p>Follicle tracking scan - medicated</p>	<p>A transvaginal scan to assess follicle growth and endometrial measurement during an individual's medicated tracking cycle. This scan will aid in predicting ovulation. It may be used as a guide to trigger ovulation. This scan may also be used to ensure an individual is not overstimulating (producing too many follicles) as a result of medication.</p>	<ul style="list-style-type: none"> • Proficiency in operating the ultrasound equipment, using the transvaginal probe, and obtaining clear images of the pelvic structures. • An indepth understanding of pelvic anatomy, including the uterus, ovaries, and antral follicles, as well as the ability to differentiate between normal and abnormal findings. • Skill in analysing images, assessing the uterine lining, identifying any anomalies, counting antral follicles, measuring ovarian volume, and monitoring signs of ovulation and response to medication. • Expertise in analysing images, monitoring the ovaries for signs of Ovarian Hyper stimulation syndrome (OHSS). • Ability to make clinical decisions based on the findings and communicate them effectively to other health care professionals and to the patient. 	<p>Competent Proficient Expert</p>
<p>Follicle tracking scan - during IUI/DIUI treatment</p>	<p>A transvaginal scan to assess follicle growth and endometrial measurement during an IUI/DIUI cycle. This scan will be used to aid an ovulation trigger time in order to ensure the IUI/DIUI treatment is carried out at the correct time. This scan may also be used to ensure an individual is not overstimulating (producing too many follicles) as a result of medication if medication is being used in the IUI/DIUI cycle.</p>	<ul style="list-style-type: none"> • Proficiency in operating the ultrasound equipment, using the transvaginal probe, and obtaining clear images of the pelvic structures. • An indepth understanding of pelvic anatomy, including the uterus, ovaries, and antral follicles, as well as the ability to differentiate between normal and abnormal findings. • Skill in analysing images, assessing the uterine lining, identifying any anomalies, counting antral follicles, measuring ovarian volume, and monitoring signs of ovulation and response to medication. • Expertise in analysing images, monitoring the ovaries for signs of OHSS. • Ability to make clinical decisions based on the findings and communicate them effectively to other health care professionals and to the patient. 	<p>Competent Proficient Expert</p>

<p>Down regulation scan</p>	<p>This is a transvaginal scan used to assess that an individual is ready to begin an IVF/ ICSI treatment protocol - often referred to as a long down regulated cycle. The aim of the scan is to ensure a thin womb lining and ovaries are quiet with no cysts in preparation to begin gonadotropin injections.</p>	<ul style="list-style-type: none"> • Proficiency in operating the ultrasound equipment, using the transvaginal probe, and obtaining clear images of the pelvic structures. • An indepth understanding of pelvic anatomy, including the uterus, ovaries, and antral follicles, as well as the ability to differentiate between normal and abnormal findings. • Skill in analysing images, evaluating endometrial thickness, assessing the uterine lining, identifying ovarian activity, and detecting abnormalities or residual follicular activity. • Expertise in analysing images. • Full understanding of the medications used in down regulation. • Ability to make clinical decisions based on the findings and communicate them effectively to other health care professionals and to the patient. 	<p>Competent Proficient Expert</p>
<p>Treatment baseline scan</p>	<p>A transvaginal scan that is carried out within the first couple of days of a cycle to assess if an individual is ready to start treatment using gonadotropin injections. The scan is often carried out on day 1,2 or 3 of a cycle and the ovaries are assessed for cysts prior to starting treatment.</p>	<ul style="list-style-type: none"> • Proficiency in operating the ultrasound equipment, using the transvaginal probe, and obtaining clear images of the pelvic structures. • An indepth understanding of pelvic anatomy, including the uterus, ovaries, and antral follicles, as well as the ability to differentiate between normal and abnormal findings. • Skill in analysing images, evaluating endometrial thickness, assessing the uterine lining, identifying ovarian activity, and detecting abnormalities or residual follicular activity. • Expertise in analysing images. • Ability to advise on necessary blood tests and medications to support the decision to commence gonadotropin. • Ability to make clinical decisions based on the findings and communicate them effectively to other health care professionals and to the patient. 	<p>Competent Proficient Expert</p>

<p>IVF/ICSI stimulation scan -</p>	<p>This is a transvaginal scan to assess the progress of an IVF/ ICSI cycle. The purpose of this scan is to measure the growth of the follicles growing within the ovaries following gonadotropin injections, and endometrial measurements. It is also used to assess for any form of overstimulation during treatment.</p>	<ul style="list-style-type: none"> • Proficiency in operating the ultrasound equipment, using the transvaginal probe, and obtaining clear images of the pelvic structures. • An indepth understanding of the pelvic anatomy, including the uterus, ovaries, and antral follicles, as well as the ability to differentiate between normal and abnormal findings. • Skill in analysing images, assessing the uterine lining, identifying any anomalies, counting established follicles, measuring ovarian volume, and monitoring signs of maturity and response to medication. • Ability to advise on necessary blood tests and medications to support the decision to continue with the protocol. • In depth knowledge of all medications used in a stimulation cycle • Expertise in analysing images, monitoring the ovaries for signs of OHSS. • Ability to make clinical decisions based on the findings and communicate them effectively to other health care professionals and to the patient. 	<p>Competent Proficient Expert</p>
<p>FET/FER treatment cycle scan</p>	<p>This is a transvaginal scan used when an individual is going through a frozen embryo treatment cycle. The purpose of this scan is to assess the uterine lining, and level of activity of the ovaries, in order to prepare for the frozen embryo replacement.</p>	<ul style="list-style-type: none"> • Proficiency in operating the ultrasound equipment, using the transvaginal probe, and obtaining clear images of the pelvic structures. • An indepth understanding of the pelvic anatomy, including the uterus, ovaries, and antral follicles, as well as the ability to differentiate between normal and abnormal findings. • Skill in analysing images, assessing the uterine lining, identifying any anomalies and monitoring signs of ovulation and response to medication. • Expertise in analysing images, monitoring the uterine lining for signs of bleeding or polyps. • In depth knowledge of all medications used in a FET/FER cycle • Ability to make clinical decisions based on the findings and communicate them effectively to other health care professionals and to the patient. 	<p>Competent Proficient Expert</p>

<p>Embryo transfer trans abdominal scan</p>	<p>This is an trans abdominal scan carried out during embryo transfer to guide the clinician during the procedure to ensure the embryo is replaced in the correct location.</p>	<ul style="list-style-type: none"> • Proficiency in operating the ultrasound equipment, using the trans abdominal probe, and obtaining clear images of the pelvic structures. • An indepth understanding of the pelvic anatomy, including the uterus and ovaries and bladder, as well as the ability to differentiate between normal and abnormal findings. • Skill in analysing images, locating and assessing the uterine lining, and detecting any abnormalities. • Full understanding of the embryo transfer procedure • Ability to make clinical decisions based on the findings and communicate them effectively to the practitioner performing the embryo transfer and to the patient. 	<p>Competent Proficient Expert</p>
<p>Scan during egg collection</p>	<p>This is a transvaginal scan carried out during egg collection to guide the clinician during the procedure.</p>	<ul style="list-style-type: none"> • Proficiency in operating ultrasound equipment, using the transvaginal probe, and obtaining clear images of ovarian follicles. • Comprehensive understanding of pelvic anatomy, including the ovaries, follicles, and surrounding structures, as well as recognising normal and abnormal findings. • Expertise in analysing images, identifying mature follicles, guiding needle placement for follicle aspiration, and monitoring the aspiration process. • Skill in performing ultrasound-guided follicle aspiration, including needle handling, co-ordination with embryologists, and ensuring minimal discomfort for the patient. • Full understanding of the risks involved in an egg collection procedure and skill to manage any adverse risks. • Ability to make clinical decisions based on the findings and communicate them effectively to other health care professionals and to the patient. 	<p>Proficient Expert</p>

<p>OHSS assessment scan</p>	<p>This is a transvaginal scan or trans abdominal scan that is carried out to assess the extent of OHSS in an individual following egg collection. The purpose of this scan is to assess the size and location of the ovaries, but also to assess any fluid build-up within the pelvis and/or abdominal cavity. This scan can be a deciding factor when deciding to go ahead with an embryo transfer or not.</p>	<ul style="list-style-type: none"> • Proficiency in operating ultrasound equipment, using the appropriate probes (trans abdominal or transvaginal, as needed), and obtaining clear images of ovarian structures and abdominal fluid accumulation. • Comprehensive understanding of pelvic anatomy, including the ovaries, and the pathophysiology of OHSS, recognizing normal and abnormal findings. • Expertise in analysing images, assessing ovarian size and morphology, identifying the presence of ascites (fluid accumulation in the abdomen), and estimating the severity of OHSS. • Utilising the findings to make informed clinical decisions, and effectively communicating them to other health care professionals, especially in the context of OHSS management. • Ability to advise on necessary blood tests and medications for OHSS management. 	<p>Proficient Expert</p>
<p>Early pregnancy scan</p>	<p>This is a transvaginal scan carried out between 6-8 weeks gestation. The purpose of the scan is to confirm pregnancy location. It is also to assess a pregnancy at its very early stages.</p>	<ul style="list-style-type: none"> • Proficiency in operating ultrasound equipment, using the appropriate probes (trans abdominal or transvaginal, as needed), and obtaining clear images of the gestational sac/s, embryo, and surrounding structures. • Comprehensive understanding of early pregnancy anatomy, recognising normal and abnormal findings such as viable intrauterine pregnancy, ectopic pregnancy, miscarriage, and multiple pregnancies. • Expertise in analysing images, assessing gestational sac/s size and shape, identifying the presence of a yolk sac/s and embryo, measuring crown-rump length (CRL) for dating, and evaluating fetal heart activity. • Effective communication with patients about the procedure, findings, and any subsequent recommendations or actions, particularly in relation to the management of early pregnancy complications • Utilising the findings to make informed clinical decisions, and effectively communicating them to other health care professionals, including GPs and early pregnancy assessment units (EPAU). 	<p>Proficient Expert</p>

*All scans should include an overall assessment of the pelvis, ie, an FET/FER treatment scan should not be used to just look at the womb lining. The ovaries and overall pelvis should also be assessed during the scan or an IVF/ICSI scan should always include an assessment of the womb lining.**

Benner's stages of clinical competence

Code	Novice to expert continuum	Description
N	Novice or beginner	No experience in the situation in which they are expected to perform and depends on rules to guide their actions. Lacks confidence to demonstrate safe practice and requires continual verbal and physical cues.
AB	Advanced beginner	Demonstrates marginally acceptable performance because the nurse has had prior experience in actual situations. Often needs help setting priorities and cannot reliably sort out what is most important in complex situations and will require help to prioritise.
C	Competent	Demonstrates efficiency, is coordinated and has confidence in their actions. Able to plan and determine which aspect of a situation is important and which can be ignored or delayed. The practitioner lacks the speed and flexibility of a proficient practitioner but they show an ability to cope with and manage contingencies of practice.
P	Proficient	Someone who perceives the situation as a whole rather than in parts. They have a holistic understanding of the clinical situations which makes for quick and more accurate decision making. They consider fewer options and quickly hone in on accurate issues of the problem.
E	Expert	No longer relies on rules, guidance, etc to rapidly understand the problem. with an extensive background of experience demonstrates an intuitive grasp of complex situations. They focus on the accurate region of the problem without first considering fruitless possibilities.

From: Benner P (1984) From Novice to Expert, Excellence and Power in Clinical Nursing Practice, Menlo Park: Addison-Wesley: Menlo Park, CA.

4 Education and training in USS for fertility nurses in the UK

All registered nurses and midwives are committed to work within their scope of practice and recognise the boundaries around that practice, guided by their NMC Code (2018).

Section 6 considers the needs of those nurses and midwives currently practicing and how they can be confident of their current level of competency.

The landscape for nurses advancing their education in ultrasound is complex. There is no one route, and no national guidance, until now, to support best practice. USS is an advanced skill, and a minimum postgraduate certificate is recommended in terms of clinical expertise, ability to analyse and synthesise information, and for clinical governance.

As with all advanced skills, it is important for the nurse to explore this option safely, taking account of the NMC Code (NMC, 2018), before embarking on further education. An introductory course, such as the BFS Ultrasound in Fertility course, is one example of how nurses wishing to explore and expand their skills and knowledge can do this.

Across the UK, there are 3 organisations that support accreditation for ultrasound education, which is often, but not exclusively delivered by higher education institutions.

The College of Radiographers (CoR) collegeofradiographers.ac.uk

The CoR promotes the development of medical imaging and radiotherapy, through study and research into radiography, and promotes awareness of the profession.

British Medical Ultrasound Society (BMUS) bmus.org

BMUS is a multidisciplinary organisation. Current membership includes radiologists, physicists/scientists, emergency physicians and others including obstetricians, midwives, nurses, paediatricians, vets, GPs and equipment manufacturers. It issues safety standards and guidance relating to the safe use of ultrasound and provides a number of study days each year, one of which, generally, will be on an obstetric/gynaecology topic.

Consortium for the Accreditation of Sonographic Education (CASE) case-uk.org

CASE consists of 7 organisations which have a '*desire to ensure that the education and training of sonographers in the UK is delivered at an appropriate level in to ensure that those completing programmes or courses achieve a standard of competency to practise as professional practitioners.*' **CASE - Home** (case-uk.org). CASE accredits courses delivered within the UK, and the current handbook has 13 postgraduate courses in England, 2 in Ireland (Dublin and Belfast), 2 in Scotland and none in Wales. Exit awards are MSc, PGDip or PGCert. It contains standardised information on all UK and Ireland ultrasound education programmes that hold current CASE accreditation.

A small number of universities have a named module for fertility ultrasound scanning and there are several that offer this under a negotiated specialist module. There are other modules which are suitable for fertility nurses, for example the early pregnancy assessment module and the gynaecology module. These modules can be taken as a standalone module along with an ultrasound physics/technology module or as part of a 60 credit Postgraduate Certificate (Table 2 below).

European Society of Human Reproduction and Embryology (ESHRE)

The main aim of the ESHRE is to promote interest in infertility care and to aim for a holistic understanding of reproductive biology and medicine, including ultrasound scanning.

ESHRE have a dedicated guideline on recommendations for good practice in ultrasound: Oocyte pick up that outline good practice recommendations for ultrasound scanning in fertility care. Although these recommendations are not specific to fertility nursing staff, the recommendations are incorporated into the ESHRE nursing and midwifery certification programme, which provides registered nurses and midwives with certification in fertility care to perform advanced level practice. The recommendations can be viewed at: eshre.eu/Guidelines-and-Legal/Guidelines/USS-practice-in-ART and further information on certification can be found at: eshre.eu/Accreditation-and-Certification/Nurses-Midwives-Certification

Table 2 Directory of accredited gynaecology and early pregnancy ultrasound courses (CASE accredited)

Name of institution	Course available	Course title	Level/credits	Course leaders	Comments
Teesside University	Only as part of PG Cert	Negotiated Module	7/20	Simon Richards s.richards@tees.ac.uk	Can be accessed as part of a PGC as a negotiated module
University of West of England (Bristol)	Only as part of PG Cert	Negotiated specialist in early pregnancy, and/or Gynaecology module, includes fertility assessments,	7/15	Rita Phillips Antonio. Sassano rita.phillips@uwe.ac.uk antonio2.sassano@uwe.ac.uk	Can access as standalone CPD modules
University of Salford, Manchester	Only as part of PG Cert	Two negotiated modules	7/15	Angela Booth a.booth@salford.ac.uk	Can be accessed as part of a PGC as a negotiated module
Kings College, London	Only if already completed CASE accredited Pg Cert	Advanced/ Specialist practice (directed reading) negotiated module	7/15	Emma Chung emma.chung@kcl.ac.uk	If a student already has a CASE accredited PgCert they would be able to complete advanced/ specialist practice (directed reading) negotiated module to obtain a Pg Dip

University of Cumbria	Only as part of PG Cert	negotiated Practice module	7/20	Gareth Bolton gareth.bolton@cumbria.ac.uk	Can be accessed as part of a PgCert, with the clinical module being via the negotiated practice route
Sheffield Hallam University	Only as part of a 2-module course	First Trimester Ultrasound focused course	7/30	Elizabeth Bullivant e.bullivant@shu.ac.uk	Only as part of Applied Ultrasound Physics course – can choose a negotiated module – Gynaecology, 1st trimester
		Negotiated learning ultrasound practice	7/15		
Birmingham University	Focused module	Ultrasound for Fertility	7/40	Zoe Hunt zoe.hunt@bcu.ac.uk	
	Focused module	Ultrasound for Early Pregnancy	7/40		
AECC University College	Only if already completed CASE accredited Pg Cert	Basic Gynaecology & Early Pregnancy Ultrasound	7/20	Farrah Elsaghir FElsaghir@aecc.ac.uk	2-day introductory course plus 1x workplace assessment
University of Derby	University Certificate in Negotiated Specialist Ultrasound	Gynaecology Ultrasound Ultrasound in Early Pregnancy Assessment	7/20	Rebecca White Admissions_US@derby.ac.uk	
Leeds University	None at present but plans in place for 2024	unknown		Ruth Brooke R.E.Brooke@leeds.ac.uk	Presently redesigning their ultrasound training provision and plan to commence CASE accredited undergraduate course in 2024
University College Dublin	Graduate Certificate in Fertility Ultrasound	Graduate Certificate in Fertility Ultrasound		Ms Ann Fleming ann.fleming@ucd.ie	
Birmingham City University	Ultrasound for Assisted Reproduction		7/20	www.bcu.ac.uk	Accepting students from September 2024

5 Principles of good practice

Many nurses will choose to develop their USS skills to an advanced level, however, there will be nurses who are currently competently and confidently practicing USS who choose not to advance to level 7. It is vital that all nurses uphold clear principles of good practice and peer review to ensure skills are maintained and reviewed.

Principles of good practice

- Peer review and auditing own practice.
- Time and support for continuing skills and knowledge development.
- Preceptorship.
- Mentors, assessors, and supervision.
- Clinical governance and professional responsibilities of ultrasound practice.

BMUS (2021) provides an overview of good practice principles in ultrasound care, which can be incorporated/expanded on when performing gynaecological and fertility ultrasound care.

Principles of good practice should include:

- thorough history taking to maximise diagnostic accuracy
- the offer of a chaperone always
- maintain privacy and dignity and perform the ultrasound in a quiet private area
- adhere to infection control policies and procedures.
- ensuring accountability and taking responsibility for care provided
- manage risk and ensure patient and practitioner safety
- promote person-centred care and involve the patient in all aspects of the ultrasound procedure
- only work within own professional scope of practice and competence within fertility ultrasound care
- continuing their professional development, by ensuring they remain competent and confident in practice (for example attending relevant courses, such as the BFS Ultrasound in Fertility Care).

To achieve these principles, the RCN recommends peer review and auditing own practice as essential skills required to demonstrate ongoing competence and confidence.

Peer review and auditing own practice

All registered nurses and midwives are required, as part of continuing registration with the NMC, to demonstrate competence through the process of revalidation, which should include evidence of their ability to continue to practice ultrasound scanning safely and competently. Details of requirements for this, can be found at: [nmc.org.uk/revalidation](https://www.nmc.org.uk/revalidation). Part of the process of ensuring competence is reflection on own practice and validation of that practice by peers and other experienced health care professions.

Actively and honestly engaging with a peer review process supports best practice and enhances standards of care, by ensuring personal practice remains contemporary and evidence based, whilst promoting professional development.

Nurses who perform ultrasound within the fertility setting should have a planned approach to peer review, which includes evaluation by qualified peers, typically fellow nurses (preferably with MSc in scanning), expert fertility medical practitioners or sonographers. Identified peers may be local to the clinic but may also be invited in from another clinical environment to assess team members. Such reviews should be carried out on an annual basis alongside an appraisal and competency assessment.

Alongside peer review, it is recommended that a formal fertility ultrasound scanning education programme is attended every 2 years to support keeping up to date with practice requirements (such as the BFS Ultrasound in Fertility Care course).

Peer reviews for fertility ultrasound scanning should be a collaborative activity between the individual and the assessing peer and should be conducted in a supportive and constructive manner. Self-assessment and evaluation should be encouraged as part of the process as engaging in self-assessment allows nurses to identify strengths but also areas for improvement and encourages learning and professional growth.

Best practice would include clinics/fertility centres establishing a local peer review process and audit tool that is specific to the types of scans carried out and the scope of the nurses performing the scans. This tool should clearly outline the objectives, criteria and guideline for conducting the peer review specifically for fertility nurses.

By developing clear audit tools as a clinic, peers/assessors are able to document review and provide constructive feedback that will encourage learning and ensure positively driven improvements in patient care.

The BMUS peer audit tool (2014) is a recommended tool for practitioners to use when conducting peer review. This is for quality assurance and for the maintenance of practitioner competence. The tool measures each section with a score of 1 to 3; with explanations as to what each score represents. The BMUS tool has been adapted in the example below ([Table 3](#) on page 23) to make the tool more specific to fertility nurse.

Table 3 Example of peer review audit tool

Reviewee name and position:		
Reviewer name and position:		
Date of review:		
Types of scan being reviewed:		
	Score:	Comments:
Time management and procedure preparation: Keeping to time of appointment, awareness of the aim of the scan and/or stage of treatment. Confirming patient details.		
Knowledge of equipment: Awareness of equipment safety, MI + TI, knobology, process and procedure with equipment malfunctions and or dysfunction. Knowledge and application of pre-sets.		
Identification and awareness of related pathology / abnormalities: Correlation of findings to expectations, knowledge of procedure/local policy and protocol when abnormalities are found. Identification of OHSS and awareness of management according to local policy (if applicable). Awareness of pelvic and uterine pathology.		
Image quality: Understanding of required images. Identification and labelling of pelvic organs on images taken.		
Report quality: Documentation of findings, plan for treatment/ next steps. May provide recommendations.		
Reflective review: Reflective discussion with reviewer. Discussion of findings and self-reflection on reviewees ability, strengths and weaknesses.		

Adapted from: BMUS, 2014. Peer review audit tool: bmus.org

Key:

1 = Has a basic understanding of the competency. Room for improvement. Technique and/or knowledge require review. Requires regular prompting and assistance throughout. Practitioner may aim to 'target scan'.

2 = Satisfactory knowledge and technique. Is able to carry out competency with minimal assistance or prompting. Is able to explain rationale for actions. Technique is satisfactory. Good knowledge of machine safety and knobology.

3 = Excellent communication and explanation of actions. Excellent technique. Excellent knowledge of machine safety and knobology.

Score 4-9 = recommendation to attend refresher course for ultrasound.

For those that score below the recommended level, a discussion should take place with the individual and a plan of action should be outlined to ensure appropriate training is provided as soon as possible.

Time and support for skills and knowledge development

Investing in skills and knowledge development is critical for safe ultrasound care. Regular access to quality professional development ensures nurses remain current, especially with emerging techniques and technologies. To enhance both professional satisfaction and patient care fertility services should provide ongoing protected learning time, mentorship, and supervision for all their healthcare professionals.

A collaborative environment will facilitate knowledge and best practice sharing. Regular performance appraisals and access to educational resources should be part of service provision and practitioners should be encouraged to participate in education, leadership opportunities, research and engage with professional networks and colleagues within the fertility ultrasound arena.

A culture of feedback and reflective practice will further support the ongoing professional development and growth of fertility nursing staff and supports high quality care provision.

Preceptorship

Preceptorship is a period of structured transition for the newly qualified practitioner when they will be supported by a preceptor, to develop their confidence as an autonomous professional, refine skills, values and behaviours and to continue on their journey of life-long learning. All departments offering fertility scanning should have supportive and progressive career pathway for both newly qualified and more experienced practitioners performing ultrasound scanning, in the form of a preceptorship and capability programme (BMUS, 2022).

Mentors, assessors and supervision

Selecting appropriate mentors, assessors, and supervisors is crucial for fostering professional growth and maintaining high standards of practice in ultrasound care. Ideally, mentors should be experienced and competent practitioners in ultrasound with effective communication skills and a genuine interest in nurturing the development of less experienced colleagues. They should have a thorough understanding of the latest ultrasound technologies, techniques, and guidelines, and be able to provide constructive feedback and guidance.

Similarly, assessors should possess a deep knowledge of the field and be able to evaluate performance against established criteria. Assessors should be afforded the opportunity to complete a programme of education for assessors, to enhance consistency of approach. They should be objective, fair, and capable of providing insightful feedback to help individuals improve their skills. Ongoing supervision also plays a crucial role, providing oversight, guidance, and support to ensure that nurses performing ultrasound are competent, confident, and able to provide the highest quality of care to their patients.

Together, mentors and assessors, form a support network that is essential for the professional development and competency of nurses practising ultrasound in fertility care.

Coaching and Mentoring (NHS Leadership Academy, 2022) leadershipacademy.nhs.uk/programmes/coaching-and-mentoring

CASE Validation and Accreditation Handbook case-uk.org/handbook

Clinical governance and professional responsibilities for ultrasound practice

Clinical governance responsibilities in ultrasound care can be varied and are typically guided by legal and ethical standards, institutional policies, and professional guidelines. At all times, health care professionals should demonstrate clinical effectiveness and ensure that ultrasound procedures reflect contemporary evidence-based practice. Some of the main responsibilities of clinical governance can include:

- **Maintain competence:** nurse sonographers should maintain their knowledge, skills, and proficiency in ultrasound through continuous education and training.
- **Informed consent:** they should ensure that patients have provided informed consent before any sonographic procedure. This includes explaining the procedure, risks, benefits, and alternatives to the patient in a way they can understand.
- **Patient privacy and confidentiality:** they must respect and protect the privacy and confidentiality of patient information. This includes adhering to the NMC code and General data protection regulations (GDPR).
- **Documentation:** accurate and thorough documentation of the ultrasound examination is crucial. This includes documenting findings, any communication with the patient or healthcare team, and any deviations from normal protocols.
- **Quality assurance:** engaging in quality assurance and improvement activities to ensure the accuracy and reliability of ultrasound results. Performing audit, reflective practice and incident reporting where required.
- **Communication:** communicating effectively with patients, partners if applicable, and the wider multidisciplinary team, including reporting sonographic findings and any concerns to the person managing the patients care or a senior colleague.
- **Safety:** ensuring a safe environment for the patient, oneself, and others. This includes following infection control practices and ensuring that the practitioner is competent to use the sonography equipment. Ensure that there are effective policies and processes in place and an accountability structure.
- **Ethical considerations:** acting in the best interests of patients and maintaining professional boundaries which includes working within the scope of competence.
- **Legal compliance:** complying with relevant legal requirements and responsibilities, including the NMC Code and within the scope of the certification or qualification obtained within ultrasound scanning. NMC registrants have a legal and professional obligation to 'do no harm' and this should be displayed at all times.

To demonstrate safety, ongoing competence and to promote best practice, it is essential for nurses to remain up to date on the relevant legal and professional standards in fertility care. Nurses performing ultrasound should be aware that they are legally accountable for ultrasound procedures that they perform including the clinical reporting of these procedures.

6 Supporting nurses currently in practice

All nurses and midwives are duty bound to maintain and improve their skills set, as they continue to practice. The development of ultrasound scanning has enhanced clinical practice, and nurses have engaged with professional development to enable them to carry out this advanced skill, in line with their NMC Code (2018).

The standard being set now is more comprehensive than previously used, and the project team recognise that many nurses and midwives are already practicing with competence and confidence to support best practice. Nurses who choose not to pursue independent practice in USS, need to have transparent protocols in place to ensure they are well supported and supervised in the practice environment.

Recognising that nurses currently in practice may be anxious about demonstrating their expertise at this national standard, the project team have some suggestions below on how to do this. Many nurses will also be interested in expanding their skills to meet the standards now set for advanced practice.

Evidence suggest that some nurses will have gained their qualifications at the equivalent of level 5 or 6 in academic study terms and may wish to progress to level 7 or be able to demonstrate their current competence to practice at this advanced level of practice.

Use of portfolio/reflective practice can include evidence of prior learning, additional study, experience in practice and of continued professional development. This can include peer review (see below), evidence of audit of own practice, and feedback from mentors/experts.

Use for the recognition of prior learning (RPL) or the RCN credentialing system (see [introduction](#)), are ways demonstrating advanced practice in ultrasound.

Peer review and evidence of maintaining practice. If study has been at level 6, then to progress to Level 7 would require evidence of continued scanning, peer review and evidence of a critique, for example critical reading around ultrasound, research into ultrasound.

Possible options for progression/maintaining competence

- Explore the fertility ultrasound experience and competence with the support of the expert colleagues.
- Additional work placed learning.
- Formal external continuing professional development, (CPD) in ultrasound scanning every 2 years (for example the BFS Ultrasound in Fertility Care).
- For a level 5 or level 6 – potentially 40 credits needed, with consideration from modules from a university, for example a fertility in practice module, or research module could be 20 credits. This could then be linked to an advanced clinical practice course, with demonstrating value for practice.
- Apply for a PGDip, or full master's programme, which would be broader than just ultrasound, for example will include non-medical prescribing, advanced level practice, research, leadership.

Where to start

- Self-assessment is a good place to begin to review current competence and confidence. The competencies in [section 3](#) can be used as a basis for this and this can also include reviewing and discussing with peer images/case studies from recent practice, including images that may have required a further scan from a different practitioner.
- Once a self-assessment is complete, it would be useful then to plan a needs-based analysis of current skills, knowledge and competence, using section 3 above. It may be useful to use a peer or mentor to support this process.
- Once education needs have been identified, research what is available, including venue, cost and required commitment, and access to practice placements.
- Discuss plans with manager, bringing evidence to this discussion will help to further opportunities.

Keeping up to date, competent and confident in practice is a necessary commitment, and a conversation with a mentor and or manager is always a good place to start.

Example of how one organisation is moving this agenda forward

In 2023, Care Fertility (carefertility.com) developed an inhouse certificate in fertility ultrasound. Delegates take a 3-month module, where, on successful completion, they receive a Leeds Care Fertility placement for 2 intensive days of teaching in anatomy and physiology, setting up for an examination, communication, including record keeping and GDPR, the science of the scan machine, clinical governance, pharmacology influence on scan findings, and practical scan exposure. Delegates then return to their local clinic for weekly support to complete a portfolio including academic reflections for each type of ultrasound scan, and in preparation to return for an assessment day. The third day commences with a written exam, submission and assessment of the portfolios and reflections, and a practical assessment of simulated scan. The 3 assessments are combined, for an aggregated score of 85% pass mark.

The process of establishing a portfolio approach, creates a culture of lifelong learning to this advanced clinical practice, to support revalidation. They are also in the process of establishing an adverse scan monthly committee where anyone in the group who scans, or who is learning to scan, can attend, and take turns to present interesting or unusual case studies for learning and development. They are also working to establish connections with academic institutions to have the course accredited in the future, with the aim of achieving academic level 7 status, with a future ambition to creating further fertility specific modules at level 7, that could form part of an MSc in advance practice for nurses and midwives.

7 Conclusions

Nurses using ultrasound scanning in fertility care should be competent and confident in their practice. This is an advanced skill, which will enhance individual practice and improve continuity of care, patient experience, and safety.

These guidelines have been developed to provide national standards for nurses working in fertility care settings to develop this highly skilled advance practice.

Nurses wishing to expand their skills to include ultrasound scanning

Nurses wishing to develop ultrasound scanning skills will need to be educated at academic level 7 (or equivalent), have access to appropriate practice placements, and be well supported by their managers. This should include protected time to study, access to mentors and assessors, as well as being encouraged to peer review and audit their own practice. Continuing professional development is also key to ensuring they can revalidate to maintain and enhance those skills, once established.

Nurses currently practicing ultrasound scanning

Some nurses will be competently and confidently practicing ultrasound skills already and will have completed an initial education different to the recommendations in this publication.

As with any developing skill, it is the responsibility of the individual registrant to ensure they are competent and confident to practice at a contemporary level to meet current and future service requirements,

Managers and employers supporting best practice

Employers and managers have a responsibility to provide opportunities for employees to assess and review their skill set to ensure they meet current requirements; this applies to registrants already practising ultrasound, as well as those wishing to advance their level of practice. This should include:

- support for nurses wishing to expand their skills in ultrasound screening needs to include access to level 7 courses, which will provide the right level of education
- support for nurses currently practicing, who may wish to expand their skills to ensure they remain competent and confident to practice safely
- skills analysis of the unit requirements and opportunities for nurses to advance their skills. This should include consideration of appropriate funding and protected time for learning
- providing appropriately prepared mentors, supervisors, and assessors
- support in accessing practice placements, including time to complete the course
- establishing peer review and audit systems, including multidisciplinary case reviews.

Advanced practice focuses on nursing professional development, which is underpinned by appropriate nurse education and the ability to apply critical thinking to practice. This enhances patient care, as well as enables career development. Investment in nurses to enhance their practice is critically important for women and for professional practice to continue to develop health care provision across the UK.

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RCN quality assurance

Publication

This is an RCN practice guidance. Practice guidance are evidence-based consensus documents, used to guide decisions about appropriate care of an individual, family or population in a specific context.

Description

This guidance has been developed to support best practice for nurses working at advanced level practice in performing and reporting on ultrasound scanning, specifically in fertility care. Nurses are well placed to develop competency in ultrasound scanning, which can improve continuity of care, patient experience, and safety.

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The Nine Quality Standards

This publication has met the nine quality standards of the quality framework for RCN professional publications. For more information, or to request further details on how the nine quality standards have been met in relation to this particular professional publication, please contact publications.feedback@rcn.org.uk

Evaluation

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