



Collaborative Ultrasound Manifesto

Introduction

Ultrasound is an essential component of UK healthcare, supporting diagnostics, screening, monitoring and treatment across almost every clinical specialty. Yet ultrasound services face increasing pressure from workforce shortages, inconsistent training structures, variable governance, ageing equipment, and slow adoption of innovation. These challenges are systemic and cannot be resolved by any single profession or organisation.

To address them, AXREM, the British Institute of Radiology (BIR), the British Medical Ultrasound Society (BMUS), the Institute of Physics and Engineering in Medicine (IPEM), and the Society of Radiographers (SoR) have formed a collaborative working group representing clinical, scientific, educational and industry expertise.

This manifesto sets out shared priorities, identifies barriers to safe and sustainable ultrasound delivery, and defines coordinated actions needed to ensure high-quality, equitable ultrasound services—now and for the future.

Workforce

The UK ultrasound workforce is multidisciplinary and includes sonographers, radiologists, midwives, vascular scientists, cardiac physiologists, ophthalmic and vision scientists, surgeons, neonatologists, paediatric specialists, anaesthetists, obstetricians and foetal medicine consultants, Point-of-Care Ultrasound (POCUS) clinicians across multiple specialties, and a vital scientific and technical workforce comprising clinical scientists, clinical engineers, clinical technologists, and medical physicists.

Sonographers perform the majority of diagnostic ultrasound examinations and are highly skilled in screening, diagnostics and interventional practice. Demand for ultrasound continues to rise by approximately 5.9% per year, outpacing workforce growth. Sonographers are not statutorily regulated, limiting workforce entry routes, career mobility and patient safety assurance.^{[1][2][3]}

Medical physics, clinical engineering and clinical technologist teams provide essential scientific and technical support to ultrasound services. Their expertise underpins equipment procurement and specification, acceptance and baseline testing, quality assurance (QA),

user training, image quality optimisation, safety advice, artefact troubleshooting, lifecycle management, compliance with legislation and national guidance, audit, research and the safe clinical adoption of innovation. Workforce shortages in these groups, reported at up to 40% in some services are increasingly compromising governance, safety and innovation capacity.



Current Challenges

- Sonographer vacancy rates exceeding 24% nationally, with some regional rates approaching 40%^[4]
- Shortages of radiologists specialising in ultrasound^[5]
- Insufficient medical physics, clinical engineering, clinical technologist and sonographer capacity to sustain governance, QA and safety
- Workforce pressures exacerbated by recruitment freezes
- Rising musculoskeletal injury, burnout and stress
- Increasing examination complexity and expanding clinical pathways
- Absence of statutory regulation for sonographers
- Reduced training capacity resulting from programme closures and insufficiently funded clinical placements

What the Workforce Needs

- Safe appointment times and realistic workloads
- Modern, well-maintained equipment and protected staff spaces
- Rapid access to occupational health and work-related musculoskeletal disorder (WRMSD) prevention
- Sustainable, multi-year funding for accredited ultrasound education
- Defined career frameworks and peer support for all professional groups
- Adequate scientific and technical staffing to support governance, QA, validation and innovation adoption

Proposed Solutions

- Introduce statutory regulation for sonographers
- Implement long-term national workforce planning across all professions involved in ultrasound care, explicitly including scientific and technical roles required for governance, equipment performance and safety
- Provide ring-fenced, multi-year funding for 'Consortium for the Accreditation of Sonographic Education' (CASE)-accredited programmes and clinical placement capacity
- Prevent recruitment freezes in services failing to meet diagnostic targets
- Standardise safe appointment times and update them as examination scope expands
- Provide protected rest, recovery, debriefing spaces and access to physiotherapy and occupational health

Workforce Call to Action

To safeguard patient care and stabilise the ultrasound workforce, healthcare leaders, policymakers and educators must urgently collaborate to:

1. Introduce statutory regulation for sonographers
2. Invest in long-term protected training pathways
3. Remove recruitment barriers and support safe workloads
4. Increase scientific and technical staffing in line with IPEM workforce forecasts to maintain safety, QA, validation and innovation capability

Skills Development

High-quality ultrasound services depend on structured education, preceptorship, protected continuing professional development (CPD), interprofessional learning and clear progression routes aligned to the four pillars of practice.

Challenges

- Limited clinical placement capacity
- Inconsistent funding for training
- Variable POCUS accreditation and governance^{[6][7]}
- Career development opportunities and remuneration inconsistencies
- Restricted access to advanced practice routes for non-statutorily registered staff
- Lack of supporting professional activity (SPA) time for education, research and leadership
- Under-utilisation of late-career expertise
- Limited support for emerging skills, including AI literacy and new diagnostic pathways

Key Requirements

- Protected CPD time and equitable funding for all ultrasound practitioners, including scientific and technical staff
- A consistent career framework aligned to national capability frameworks and National Occupational Standards
- Job planning that includes SPA time^[8]
- Support to work at the top of scope of practice
- Harmonised or cross-recognised POCUS competencies^[9]
- Expanded use of imaging academies and innovative training models to expand placement capacity
- Formal roles for late-career practitioners in education and mentorship

Skills Development Call to Action

National bodies, employers and education providers should collaborate to:

1. Expand and sustainably fund training capacity
2. Ensure equitable access to CPD and career progression
3. Embed job planning that supports development across the four pillars
4. Strengthen workforce pipelines and succession planning
5. Integrate future focused skills, including AI governance and technology evaluation
6. Support regulatory and workforce initiatives, including NOS updates

Equipment Management, Quality Assurance and Audit

Why Equipment Asset Management Matters

Effective management of ultrasound equipment over its lifecycle including planned preventative maintenance (PPM) and appropriate service contracts ensures high quality patient care, clinical and financial governance, minimises risks of adverse events and reduce litigation costs.

Current Challenges

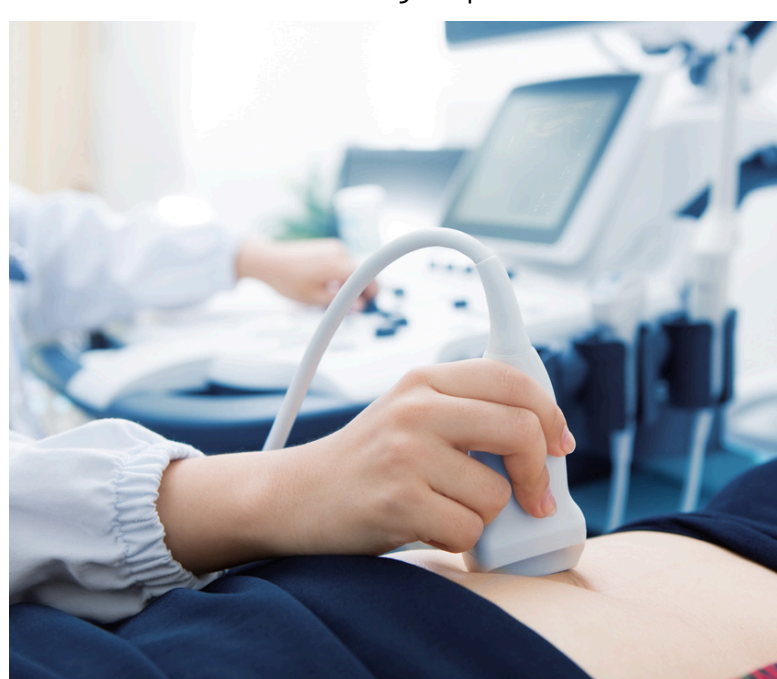
- Lack of clear ownership and accountability
- Inconsistent PPMs, service contracts and recordkeeping
- Insufficient collaboration between clinical teams and medical physics/clinical engineering
- Equipment being procured by clinical teams through non-standard routes such as research funding or donations
- Inadequate equipment management from installation through decommissioning
- Access to ultrasound equipment to perform PPMs and services due to increased clinical workload and waiting list pressures

What Effective Asset Management Requires

- All new or replacement ultrasound equipment must be listed on an asset management system
- All equipment must undergo electrical safety testing, be fit for purpose and covered under planned preventative maintenance, service contracts and quality assurance programmes over its lifecycle
- All loan equipment has a Master Indemnity Agreement (MIA) between the Trust and manufacturer before being used clinically
- A permanent electronic record of all imaging studies^[10]
- Decontamination (cleaning and disinfection/ cleaning & sterilisation) of equipment to be carried out in accordance with manufacturer's instructions and with manufacturer-recommended cleaning products

Why QA and Audits Matter

Quality assurance (QA) and clinical audit are fundamental to safe, effective and accountable ultrasound services. QA is a legal requirement and plays a critical role in improving patient safety, mitigating the risk of misdiagnosis and infection control issues, and identifying equipment faults and damage early. This reduces clinical downtime, supports more cost effective repair and replacement decisions, and can extend equipment lifespan while enabling informed procurement. The Health & Social Care Act and the Provision and Use of Work Equipment Regulations require ultrasound equipment to be fit for purpose, regularly inspected, properly maintained and subject to risk assessment and mitigation. UK evidence demonstrates that more than one third of ultrasound probes in clinical use have faults, the majority of which are detectable through routine QA.^[11]



Clinical ultrasound audit complements QA by providing a structured, evidence based approach to evaluating diagnostic quality, reporting standards and pathway compliance against national benchmarks. Audit should be embedded within routine service delivery as a continuous quality improvement process rather than a one off activity. When appropriately supported, audit enables services to reduce risk, identify unwarranted variation, improve consistency and demonstrate sustained improvement. Together, robust QA, audit and asset management underpin patient safety, staff wellbeing, organisational reputation, financial sustainability and regulatory compliance, and are essential to maintaining public trust and delivering high quality care in an increasingly pressured healthcare system.^{[12][13]}

Current Challenges

- Lack of protected time for QA^[14]
- Unclear ownership and accountability
- Inconsistent QA delivery and recordkeeping
- Poor integration between clinical and scientific/engineering teams
- Inadequate lifecycle management^[15]
- Limited QA training in education and CPD
- Growing reliance on ageing equipment

What Effective QA and Audit Require

- A dedicated QA lead per service
- Baseline QA before first clinical use and after major repairs or upgrades
- At least 30 minutes per scanner per month for user QA, undertaken by trained staff
- Routine in depth QA by appropriately trained scientific, engineering, clinical technologist and sonographer staff, in line with national guidelines

- Close collaboration between clinical teams, ultrasound practitioners, sonographers, medical physics, clinical engineering, clinical technologists, infection control teams, manufacturers and the supply chain
- A robust asset management system covering acquisition, QA, maintenance, repair, replacement and disposal

Equipment Management, Quality Assurance and Audit Call to Action

Healthcare leaders and national bodies must:

1. Provide nationally aligned, practical QA and asset management guidance
2. Invest in education and QA competency for all ultrasound users
3. Allocate protected time and funding to embed QA, audit and lifecycle management as routine practice

Innovation & Adoption

Innovation is rapidly transforming ultrasound services, with advances such as artificial intelligence (AI), handheld and portable devices, new therapeutic applications and digitally enabled pathways offering significant opportunities to improve access, efficiency and diagnostic capability. However, the pace of technological change has outstripped the development of consistent evaluation, governance and adoption frameworks. To realise the benefits of innovation without compromising patient safety, workforce capability or service resilience, new technologies must be introduced in a way that is safe, transparent, evidence-based and equitable. This requires robust local evaluation, clear accountability, and early and sustained involvement of clinical, scientific, technical and governance expertise. Innovation in ultrasound should enhance—not replace—professional

judgement, support consistent high-quality care, and be integrated thoughtfully across the full equipment and workforce lifecycle to ensure long-term value, safety and sustainability.

Key Challenges

- Limited evaluation capacity
- Variability in biomarker measurement
- Insufficient transparency from AI developers
- Medicolegal uncertainty
- Risk of deskilling without governance



Requirements for Safe Innovation

- Structured local evaluation of performance, safety, interoperability and workflow impact
- Standardised biomarkers and reporting
- AI transparency and post-implementation monitoring
- Clear user responsibility and safety guidance
- User-centred design and co-production
- Recognition of full equipment lifecycle
- Involvement of scientific and technical experts in evaluation, commissioning, monitoring and retirement

Innovation Call to Action

National bodies should:

1. Mandate local evaluation prior to adoption
2. Support standardised measurement and reporting frameworks for ultrasound biomarkers
3. Require AI transparency
4. Protect time for evaluation and training
5. Strengthen scientific and technical infrastructure for safe implementation

Conclusion and Collaborative Call to Action

Ultrasound is fundamental to modern healthcare. Without coordinated action, workforce instability, skills erosion, inconsistent QA and unmanaged innovation will continue to compromise service resilience and patient outcomes.

We call on national decision-makers, professional bodies and healthcare organisations to work together to:

1. Stabilise and expand the ultrasound workforce through statutory regulation, protected training capacity and national workforce planning
2. Invest in lifelong skills development
3. Embed robust asset management, clinical audit and QA systems
4. Adopt innovation safely and consistently
5. Provide sustainable, multi-year funding to underpin training, QA and equipment replacement
6. Deliver a unified national ultrasound strategy that reduces variation and improves outcomes across the UK

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[8] [NHS England » Allied health professionals job planning: a best practice guide](#)

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[11] Legislation and Regulations:

- Health & Social Care Act 2008 Regulations 2014: [Regulation 15: Premises and Equipment](#)
- [Provision and Use of Work Equipment Regulations 1998](#)
- [UK Care Quality Commission Guidance and Regulation](#)
- [BS EN 60601-1:2006+A2:2021](#) Medical electrical equipment. General requirements for basic safety and essential performance

Standards:

- [British Medical Ultrasound Society \(BMUS\): Technical Discussion, Standards, Guidance and Compliance Statements for Ultrasound](#)
- [Royal College of Radiologists: Standards for the provision of an ultrasound service \(2014\)](#)
- [Royal College of Radiologists: Quality Standards for Imaging \(2024\)](#)

National Guidelines:

- [MHRA Managing Medical Devices Guidance \(2021\)](#)

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