

Appendix 1: Summary of key points and recommendations.

Theme	Category	Key finding's impact on Physiotherapists' adoption of LUS	Recommendations
Support for physiotherapists using LUS	Organisation	<p>The MDT generally supported physiotherapists' adoption of LUS.</p> <p>Pre-existing professional relationships were significant enablers.</p> <p>Communication regarding the remit of scanning was key.</p>	<p>Frameworks needs to be developed and published to guide how organisations and MDT members can support LUS for physiotherapists</p> <p>All stakeholders may seek advice from colleagues in other critical care units who have already adopted LUS into practice.</p> <p>Framework needs to be developed and published to guide how open communication can ensure all parties agree the remit of LUS adoption by physiotherapists in clinical environment.</p>
	Physiotherapy department	<p>Some physiotherapy managers may be cautious regarding the professional considerations and potential legal implications.</p>	<p>Physiotherapy managers and clinicians should seek advice from colleagues who have already adopted LUS into practice.</p> <p>Publication of guidance, e.g. frameworks to clarify professional considerations related to physiotherapists' adoption of LUS.</p>
Knowledge and understanding of LUS evidence	Evidence base	<p>The limited formal evidence base related to physiotherapists' use of LUS can be regarded as a barrier to its adoption.</p>	<p>Regularly review the expanding evidence base for relevance, transferability and applicability:</p> <ul style="list-style-type: none"> • Research conducted by other professions in LUS • Publications related to ultrasound imaging by physiotherapists in other specialisms • Publications related to LUS by physiotherapists <p>Proactive participation in opportunities to extend the evidence base:</p> <ul style="list-style-type: none"> • Local audit/service evaluation/Quality Improvement • Participation in professional groups to develop policy • Formal clinical research, (collaborate with colleagues in Higher Education Institutions) <p>Proactive sharing of evidence:</p> <ul style="list-style-type: none"> • Publish and present at conferences, (collaborate for support) • Contribute to professional networks • Establish peer support groups for knowledge exchange

	Department understanding of LUS	Adopting a new technique, approach, technology or intervention necessitates addressing a sharp learning curve. Development is not possible without learning and strategies to evaluate value.	<p>Clinicians may draw on support from professional and regulatory bodies.</p> <p>Clinicians may need to recruit support strategies to facilitate the process of linking theory to new practice:</p> <ul style="list-style-type: none"> • Establish peer support groups for knowledge exchange • Set up collaborations, e.g. with Higher Education Institutions to support audit, clinical research and sharing of findings. <p>Quality Improvement (QI) theory may provide guidance.</p>
Governance	Clinical effectiveness	<p>High sensitivity and specificity of LUS when compared to other imaging.</p> <p>No ionising radiation so can be used for serial scanning.</p> <p>Integrated into practice to facilitate clinical decision making</p> <p>Tool to quickly evaluate efficacy of interventions.</p>	<p>Clinicians to draw on:</p> <ul style="list-style-type: none"> • Formal clinical data and personal observations • Evidence relating to physiotherapists' adoption of LUS and transferable evidence <p>Publication of guidance, e.g. relevant frameworks and publications from professional and regulatory bodies.</p>
	Education	Existing education pathways are effective but support and mentorship can be difficult to access	<p>Evaluation of existing education pathways.</p> <p>Liaison between education providers and professional bodies for coherency and strategies to enhance mentorship opportunities.</p>
	Risk management	<p>Clinical risk, (direct harm) from LUS is very low.</p> <p>Managers are wary of indirect harm – imaging and communication errors.</p>	Publication of guidance, e.g. relevant frameworks and publications from professional and regulatory bodies.
Physiotherapists' motivation to use LUS	Personal motivation	<p>Professional career development.</p> <p>Enhancement to professional satisfaction and stimulation.</p>	Individual clinicians may need to create as well as respond to professional development opportunities.
	Physiotherapy specific motivation	LUS aligns with respiratory physiotherapist's assessment and management processes.	<p>Clinical research required to evaluate efficacy of LUS with critical care patient population.</p> <p>Publication of guidance, e.g. relevant frameworks and publications from professional and regulatory bodies.</p>

	Patient related motivation	LUS may contribute to patient education, management adherence and clinical outcomes.	Qualitative research required to evaluate the impact of LUS on the patient experience.
Resources	Accessing mentorship and time to train	Competing demands on time present a challenge to accessing LUS education and mentorship.	Research that evaluates and demonstrates the efficacy of LUS implementation by physiotherapists is key to rationalisation of training priorities.
	Time: efficient use	LUS regarded as time effective resource	Clinical data exploring impact on work efficiency required.
	Equipment	Some physiotherapists were competing with other MDT members for equipment on critical care units.	Research that evaluates and demonstrates the efficacy of LUS implementation by physiotherapists is key to equipment procurement.