

Association of Chartered Physiotherapists in Respiratory Care position statement: Physiotherapists use of lung ultrasound

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Introduction

This position statement from the Association of Chartered Physiotherapists in Respiratory Care (ACPRC) recognises the evolving use of point of care (PoCUS) lung ultrasound (LUS) by physiotherapists. The number of physiotherapists within the United Kingdom (UK) that are undertaking training and gaining accreditation in this emerging area of practice is increasing. While the benefits and use of PoCUS LUS by our respiratory, emergency department and critical care medical colleagues has been established (Intensive Care Society 2019; Stanton et al. 2020) (including training, accreditation and clinical guidelines), this is not currently the case for physiotherapists. This statement identifies the scope of practice, education, competency and governance requirements for the physiotherapy use of PoCUS LUS.

Scope of practice

At present, the physiotherapy use of PoCUS LUS is predominantly undertaken in the critical care environment, due to the established use of PoCUS by medical colleagues and the subsequent availability of equipment and mentors.

Physiotherapists can effectively use LUS to support their assessment and guide acute respiratory interventions in the critically ill patient. LUS can be used by physiotherapists to diagnose and assess: pneumothorax, consolidation (for example, pneumonia, contusion, lobar collapse), pleural effusion and interstitial syndrome (Leech et al. 2015; Le Neindre et al. 2016; Hayward & Janssen 2018). The use

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of LUS to provide a rapid diagnosis can guide efficient physiotherapy interventions and prevent under or over treatment. In addition to its use as a diagnostic tool, LUS provides an outcome measure to evaluate the effectiveness of physiotherapy treatment/interventions (Le Neindre et al. 2016). However, LUS should be used as part of a multifaceted clinical evaluation and not as the only outcome measure (Le Neindre et al. 2016). In addition to acute respiratory scenarios, physiotherapists could also use PoCUS to evaluate diaphragm function in patients weaning from mechanical ventilation (Hayward & Janssen 2018).

There are a number of emerging clinical scenarios not limited to the critical care environment where physiotherapists can utilise LUS, which include: chronic lung disease, chest wall trauma and assessment of lung compliance during ECMO (Hayward & Janssen 2018; Battle et al. 2019; Ntoumenopoulos et al. 2021). However, physiotherapists should use LUS only within their scope of practice and as such will be unable to comment on other structures and pathologies that may be within the LUS anatomical field, for example, pericardial effusion. To support this, the tissues/organs, differential sonographic diagnoses and clinical decisions which are *outside* of the scope of practice of the physiotherapist using PoCUS LUS can also be defined.

Education and competency

Formal training and evidence of competency is necessary for physiotherapists who wish to practice PoCUS LUS. Prior to embarking on formal training, physiotherapists must identify an accredited supervisor from the appropriate awarding body. Currently accreditation can be gained through the Intensive Care Society, Society of Acute Medicine and Paediatric Intensive Care Society.

The training should be a four phased competency programme (See et al. 2016; Hayward & Kelly 2017) that follows the programme of the appropriate awarding body and consists of: theoretical introductory training and attendance on an approved course, directly supervised scans, unsupervised scans, and a triggered assessment. A logbook recording completion of scans, competency and

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triggered assessments should be maintained throughout the training period. Following completion of a formal education programme (including triggered assessment), physiotherapists should submit their required documentation to the relevant awarding body for accreditation.

Barriers to physiotherapy use of LUS in clinical practice include a lack of team support and resource availability (Intensive Care Society 2019). Therefore, physiotherapists should gain the support of their line manager and the multidisciplinary team within their clinical area in advance of any training.

Governance

As of 2nd December 2020, diagnostic LUS falls directly under the Chartered Society of Physiotherapy's 4 pillars of practice via the *therapeutic and diagnostic technologies* pillar (CSP 2020). Until formal accreditation is gained by the relevant awarding body, any scans undertaken should not be stored in the clinical record and not used for clinical decision-making until they have been reviewed by a suitably trained clinician. Once accredited, physiotherapists should undertake LUS only within their scope of practice and comply with all local governance procedures for storing scans, documentation and quality assurance processes such as audit. It is the individual physiotherapist's responsibility to maintain knowledge competence in LUS through undertaking regular ultrasound examinations and relevant continual professional development (Intensive Care Society 2019). Those with sufficient experience in LUS are encouraged to apply to become a mentor to support the training of other physiotherapists.

PoCUS LUS is an expanding imaging modality within physiotherapy, however its adoption into clinical practice needs to be framed by robust governance, education and competency within a clearly defined scope of practice. A framework to support the use of ultrasound imaging by physiotherapists in the UK has been developed and is due to be published by the Chartered Society of Physiotherapy. This framework will define and align the inter-related elements of scope of practice, education and competency and governance. This ACPRC position statement reflects the current evidence and guidance related to PoCUS LUS. As such, the ACPRC recommend that if physiotherapists wish to use PoCUS LUS, they gain accredited training in LUS, use LUS within their scope of practice and in an environment that provides supervision and mentorship and comply with all local governance procedures.

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