

BACKGROUND



Lung ultrasound (LUS) is gaining popularity amongst respiratory physiotherapists as a clinical examination adjunct to aid pulmonary pathology diagnosis and inform physiotherapeutic treatment options. As LUS is not routinely used by respiratory physiotherapists, the level of training and timeframe to gain competency is unclear.



PURPOSE



Within the United Kingdom (UK), there are no formal training courses in LUS aimed at physiotherapists. The Intensive Care Society (ICS) offer the Core Ultrasound Intensive Care (CUSIC) competency based training pathway (lung, vascular and abdomen). This service evaluation evaluates the training of six physiotherapists in LUS by using a modified CUSIC training pathway which omits the vascular and abdominal components.



METHODS



Six physiotherapists ("trainees") embarked on the modified CUSIC accreditation. To complete the training we enlisted the help of a CUSIC registered mentor. The CUSIC four-phase pathway involved, Phase 1: theoretical training and introductory practice. Phase 2: directly supervised scans. Phase 3: independent practice and completion of a scan report log book with mentor feedback. Phase 4: directly supervised scan viva. The first 100 scan reports were analysed for common feedback. Trainees were also involved in a one to one peer discussion about the training programme. This took the format of an unstructured interview with open questions about their experiences. Common topics were collated and described.



RESULTS



At nine months four trainees had submitted reports for review and three had successfully completed their competency. Feedback from the 100 scan reports included advice on: Effective scan depth, lung sliding, "A-line" and "B-line" identification, avoiding rib shadows and anatomical landmarks to ascertain scanning location.



According to the feedback forms all trainees were correctly and consistently identifying artefacts/pathologies after approximately 10 scans. Feedback from peer discussion highlighted barriers to use such as; trainees with managerial responsibilities, lack of access to machines and roles that required movement between clinical settings. Further feedback included indications to scan such as; ambiguous portable chest radiograph, acute respiratory deterioration, failing to achieve respiratory milestones or tracking response to treatment with serial scanning. Feedback from the mentor was most effective when given in 1:1 sessions. They were also advised to submit no more than 5 scan reports at once to ensure timely feedback.

CONCLUSIONS

Ultrasound naïve physiotherapists can gain competency in LUS having once undergone a structured training under the guidance of a mentor. Three trainees completed the triggered assessment and passed within a timeframe of 4 to 9 months. Submitted scan reports were consistently identifying pathologies and artefacts correctly after ten scans. It is the author's intention that this service evaluation will aid other physiotherapists in gaining competency in LUS by highlighting some of the obstacles and feedback encountered during training. It is recommended that sufficient time is allocated for the training and a suitable mentor is recruited prior to embarking on the competency stage of the training.

IMPLICATIONS

Respiratory physiotherapists are able to become independent and competent in LUS to identify common pathologies to aid their respiratory assessments and treatments within nine months.

Keywords: 1. Lung Ultrasound 2. Physiotherapy 3. Training programme

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