



RRTs and Lung Ultrasound – Putting the ‘US’ in POCUS

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December 2, 7:00 PM Eastern

Session Abstract

Point of care ultrasonography (POCUS) has quickly become a vital assessment tool in the management of critically ill patients. Widely reported to demonstrate better diagnostic performance than chest x-ray, ultrasound images have been deemed comparable to CT scan findings. First described by Lichtenstein in 2004, lung ultrasound can be useful in the assessment of parenchymal and pleural pathologies, namely consolidation, interstitial syndromes, pleural effusions and pneumothoraces.

Equipping Respiratory Therapists with the knowledge and skills to perform bedside lung ultrasounds can improve the timeliness and quality of care given to patients in respiratory distress. A recent study was conducted at London Health Sciences Centre, Victoria Hospital to determine if Respiratory Therapists could be trained to competently acquire and interpret lung ultrasound images at the bedside. Ten therapists volunteered to participate in the study. A training program was offered to the therapists, comprised of online learning modules, classroom training, and physician-guided bedside image collection. The therapists were trained to acquire the images using a 4-view protocol:

1. Anterior chest wall (ACW) view
2. Anterior axillary line (AAXL) view
3. Costophrenic angle (COSTO) view
4. Postero-lateral alveolar and/or pleural syndrome (PLAPS) view

Once the training phase was completed, the RRTs were to acquire and report on 10 lung scans and submit their findings anonymously through imaging software. Blinded to the therapist that had conducted the scan, physicians from the Division of Critical Care Ultrasound would provide suggestions for improved image acquisition and feedback on the accuracy of findings.

In terms of image quality, it was found that 96.4% of images were deemed interpretable by advanced ultrasonographers and the therapists could accurately interpret 86.1% of the images acquired. RRTs reported being less confident both when acquiring and interpreting the lower lung views (i.e., costophrenic and PLAPS views). This lack of confidence was reflected in lower accuracy rates when interpreting the pleural views.

In the final phase of the study, knowledge and skill retention is to be assessed following a 3-month wash-out period with the acquisition and interpretation of 3 additional lung scans. In light of the positive preliminary findings, work is underway to expand to the lung POCUS program to all RRTs in the adult critical care program at London Health Sciences Centre.

Session Objectives

1. To discuss the benefits of lung ultrasound
2. To review the findings of a recent study that trained respiratory therapists to conduct bedside lung scan
3. To discuss the barriers to sustaining a lung POCUS program for respiratory therapists

Speaker Biography

A graduate of the Fanshawe College Respiratory Therapy Program, Michelle has worked at London Health Sciences Victoria Hospital since 2004 as both a bedside therapist and clinical educator. Her passion for teaching extends beyond the hospital to Fanshawe College where she has taught in both the classroom and lab settings since 2005. A lifelong learner herself, she completed the Master of Health Studies program through Athabasca University in 2015. Outside of work, Michelle enjoys golfing (most days), travelling and helping her dog to live his best life.