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Online Multidisciplinary Review of Point of Care Ultrasound Images During the COVID-19 Pandemic

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Point-of-care-ultrasound (POCUS) is a valuable diagnostic tool in intensive care. Evaluation of POCUS images acquired in our intensive care unit (ICU) prior to the COVID-19 pandemic had typically been performed solely at the point of care. Where further evaluation was required, cross-sectional thoracic imaging or departmental echocardiography would be requested. Clinicians also had access to ICU ultrasound machines for review of images, or to repeat studies for clarification of findings. However, the nature of the pandemic limited access to ICU to minimise contact with COVID-19.

Objectives: We aimed to develop an online solution for review of POCUS images by the multidisciplinary team (MDT).

Methods: Microsoft Teams was utilised to create a dedicated channel for the MDT to review POCUS images. Images were exported from ultrasound machines used inside our ICU to portable USB drives in standard formats (DICOM or WMV). The portable USB drives were decontaminated prior to transfer outside of the ICU. Anonymised images were uploaded with relevant clinical details to the Teams platform for MDT review.

Results: The online platform provided rapid access to images for review by the MDT. POCUS images from ICU patients with and without COVID-19 were reviewed. MDT review frequently led to a change in patient management. Significant examples included identification of a missed inferior vena cava thrombus leading to initiation of anticoagulation therapy, and rapid expert input for a case of cardiac tamponade.

Conclusion: The use of an online platform allowed our intensive care unit to establish a reliable method for images acquired from point-of-care-ultrasound to be remotely reviewed by an expert multidisciplinary team, consequently improving patient care.