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## Use of the lung ultrasound in emergency

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**Introduction:** Lung Ultrasound (LUS) is a complementary imaging method utilized alongside clinical examination for the etiological identification of acute respiratory failure (ARF). It assists physicians in the differential diagnosis of conditions such as pneumothorax, pneumonia, pulmonary embolism, pulmonary edema, asthma, and Chronic Obstructive Pulmonary Disease (COPD) in patients with dyspnea in emergency departments. The advantage of LUS is that it can be performed bedside without exposing the patient to radiation, and it requires only one trained professional.<sup>(1-4)</sup> **Methods:** This presentation is based on a comprehensive literature review focusing on recent studies and publications related to the application of lung ultrasound in emergency settings. The BLUE protocol is highlighted for its quick and effective application, typically executed within an average of 3 minutes. The protocol boasts a high accuracy rate, with sensitivity ranging from 81% to 97% and specificity between 95% and 100%. The review emphasizes the practical applicability of the BLUE protocol and its effectiveness in diagnosing various pulmonary conditions in emergency scenarios. **Results:** The findings elucidate the significance of the BLUE

protocol within emergency and urgent care settings for the management of patients presenting respiratory failure. The protocol guides specific therapeutic interventions based on the diagnosed condition. For instance, the identification of A' profile with deep venous thrombosis suggests pulmonary embolism, while A' profile without thrombosis indicates COPD or asthma. The absence of lung sliding with the presence of lung point confirms pneumothorax. POCUS enhances and simplifies the accuracy of physical examinations, proving to be an indispensable tool in contemporary medicine for its application in critical care scenarios.

**Conclusions:** The BLUE protocol is essential for timely and accurate diagnosis in emergency care. It provides significant advantages, including rapid execution, high accuracy, and the need for only one trained professional. The implementation of this protocol can significantly enhance clinical decision-making and patient outcomes in emergency settings. Training healthcare professionals, including students, specialists, and non-specialists, in the correct application of the BLUE protocol is crucial. Mastery of probe manipulation and understanding of thoracic anatomical landmarks are essential for effective LUS use.

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