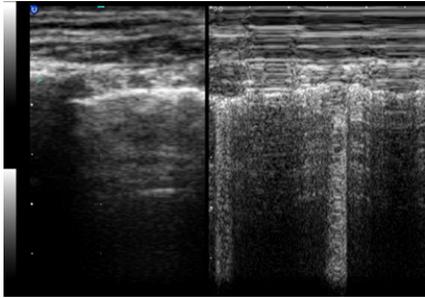


Supplemental Information

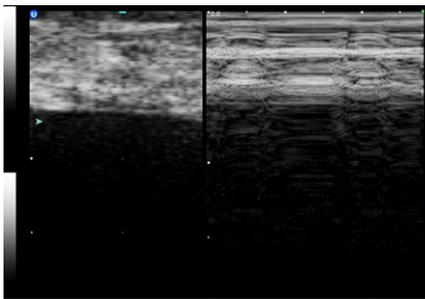
SUPPLEMENTAL TABLE 2 POCUS Terminology

Ultrasound Terminology	Description	Clinical Significance in PHM Applications
B-mode	Ultrasound image created by a series of dots and different shades of gray.	The primary ultrasound imaging modality
M-mode	The transducer records motion changes along one path of the B-mode image and displays the result in a graphical format on an x-y plot. The y-axis represents the distance from the transducer, the x-axis represents time. ⁸	Evaluating for lung sliding at the pleural line: 1. Seashore sign: sliding (normal lung) 2. Stratosphere sign: no sliding (pneumothorax)
A-lines	Horizontal lines parallel to the pleural line that are a product of the reverberation of the ultrasound beam between the pleura and the transducer. A-lines are generated by the presence of air. ¹	Normal lung parenchyma Pneumothorax
B-lines	Well-defined, “laser-like” vertical lines that arise from the pleural line and reach the edges of the screen without fading. Intense reverberation artifact created by partial filling of the alveoli with fluid. It is normal to see occasional B-lines (or <3 per intercostal space). ⁹	Interstitial syndromes Pneumonia Bronchiolitis
Lung sliding	With respiration, there should be a to-and-fro synchronized movement between the visceral and parietal pleura.	Pneumothorax (no sliding), normal lung (sliding)
Lung point	The point where the visceral lung pleura (lung) begins to separate from the parietal pleural (chest wall). This is seen as a region of lung sliding encountering a region of an absence of lung sliding.	Pneumothorax
Lung “hepatization”	Appears solid in echotexture and similar to liver in appearance.	Consolidations or pneumonias
Mirror-image artifact	The diaphragm acts as a reflector; in normal lung, there is an apparent mirror image of the liver above the diaphragm.	Pleural effusions (absence of mirror-image artifact)
Spine sign	In normal lung, the presence of air prevents visualization of the spine deep to the lung. When there is an effusion, the spine can be visualized as extending cephalad to the diaphragm.	Pleural effusions
Collapsibility index	The respiratory variation of the IVC. Generally a collapsibility index of >0.5 correlates with dehydration. The collapsibility index is derived from visualizing the IVC in the long axis in M-mode and measuring the differences in diameter between expiration and inspiration.	Hydration status Shock
Gestalt method	Similar to the collapsibility index but only involves a visual estimation of the IVC respiratory variation. M-mode is not used, and no measurements are performed.	Hydration status Shock
IVC to aorta ratio	Ratio of the IVC to aorta; this was derived to correct for a child’s BMI.	Hydration status Shock
TRD	The rectum is identified in the suprapubic sonographic window posterior to the bladder. It appears as a hyperechoic arc. The diameter can be measured; >3.8 cm is associated with constipation. ¹⁰	Constipation
Cobblestoning	Pathognomonic sonographic finding for cellulitis, soft tissue appears as globules with surrounding intracellular edema.	Soft tissue
Ultrasound assistance	Using ultrasound to identify structures before performing a procedure. Ultrasound is not used during the actual procedure.	LP
Ultrasound guidance	Using ultrasound in real time while simultaneously performing a procedure.	Vascular access (peripheral)

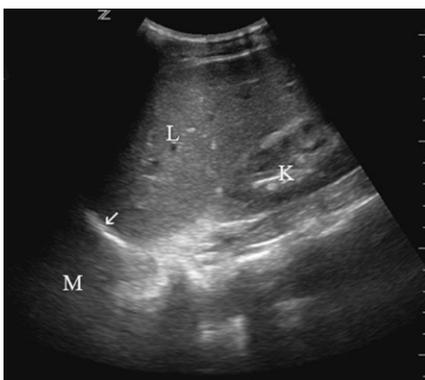
B-mode, brightness mode.



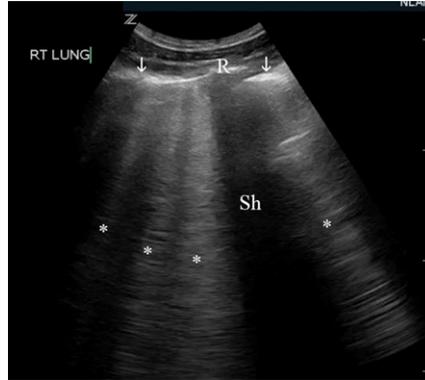
SUPPLEMENTAL FIGURE 6 Seashore sign seen in normal lung. The sliding of the pleural line creates a “sandy” appearance on M-mode.



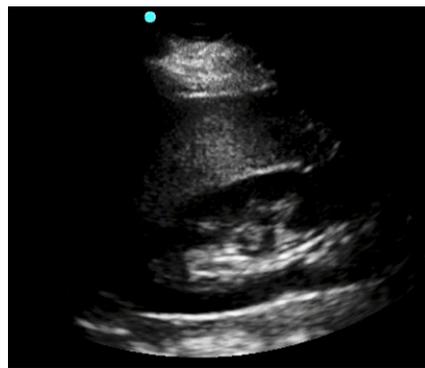
SUPPLEMENTAL FIGURE 7 Stratosphere sign. In contrast, in the absence of lung sliding, as seen in the case of a pneumothorax, there is a pattern of straight lines, referred to as the stratosphere sign.



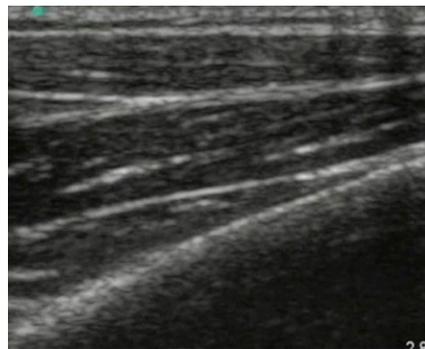
SUPPLEMENTAL FIGURE 8 Normal. To evaluate for the presence of a pleural effusion, scanning is performed in dependent regions. In a normal patient, there is a mirror-image artifact (M) above the diaphragm (arrow). Other structures include the liver (L) and kidney (K).



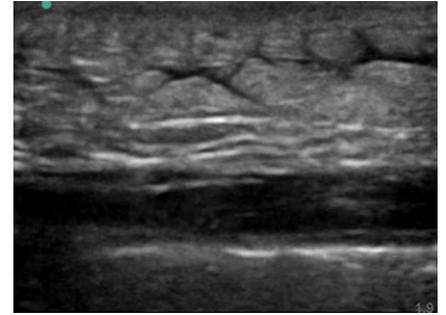
SUPPLEMENTAL FIGURE 9 Bronchiolitis. Image of right lung. Sonographic findings include subpleural consolidations, diffuse B-lines (*), and pleural line (arrow) abnormalities. For orientation, other structures visualized are the rib (R) with posterior shadowing (Sh). Image courtesy of Sharon Yellin, MD.



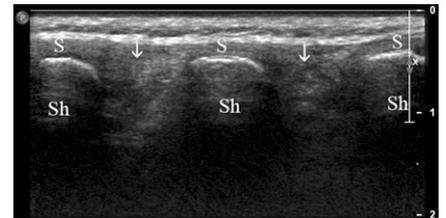
SUPPLEMENTAL FIGURE 10 Normal renal ultrasound. Pictured is a normal kidney, with normal echotexture and a central hyperechoic hilum.



SUPPLEMENTAL FIGURE 11 Soft tissue ultrasound, normal skin.



SUPPLEMENTAL FIGURE 12 Soft tissue ultrasound, “cobblestoning.” Cobblestoning is visualized in cases of cellulitis and represents edema.



SUPPLEMENTAL FIGURE 13 LP. POCUS may be used to identify interspinous spaces (arrows) before performing an LP. For orientation, the spinous processes (S) can be visualized with posterior shadowing (Sh).