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Abstract:

PURPOSE: Although routine chest radiographs (CXR) to verify correct central venous catheter (CVC) position and exclude pneumothorax is commonly performed, emerging evidence suggests that this practice can be replaced by point of care ultrasound (POCUS). POCUS is advantageous over CXR because it avoids radiation while verifying correct placement and lack of pneumothorax without delay. We hypothesize that a knowledge translation gap exists in this area. We aim to describe the current clinical practice regarding POCUS alone for CVC position confirmation and pneumothorax exclusion as compared to chest radiography.

METHODS: We used a modified Dillman technique to conduct a brief web-based survey to Critical Care Medicine and Emergency Medicine physicians (targeted group of early adopters) evaluating the current practice related to CVC position confirmation and PTX exclusion via CXR or POCUS.

RESULTS: Of 200 post-training clinicians contacted, 136 (68%) responded to the survey. For routine CVC confirmation and PTX evaluation, 50.7% of Critical Care Medicine physicians and 65.4% of Emergency Medicine physicians reported using CXR alone while 49.3% and 33.1%

respectively reported using CXR and ultrasound together. Though 84.6% of clinicians use ultrasound for CVC insertion “most of the time” or “always”, none use ultrasound alone for CVC position confirmation, and only 1% has used ultrasound alone for PTX exclusion.

CONCLUSIONS: Though data support its utility and advantages for POCUS as a sole modality for CVC position confirmation and PTX evaluation, POCUS is rarely used for this indication. We identified several perceived barriers towards widespread utilization suggesting areas for dissemination and implementation strategy development that will benefit patient care practices.

Reference:

Ablordeppey, E.A., Drewry, A.M., Theodoro, D.L., Tian, L., Fuller, B.M. and Griffey, R.T. (2018) Current Practices in Central Venous Catheter Position Confirmation by Point of Care Ultrasound: A Survey of Early Adopters. Shock. July 25th. .

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