

Abstract

Nurse-Performed Point-of-Care Ultrasound in Critical Care: Implications for Clinical Decision-Making and Advanced Nursing Practice

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Introduction. Point-of-care ultrasound (POCUS) is increasingly used in intensive care units (ICUs) as a bedside imaging tool supporting rapid clinical assessment. The extension of ultrasound competencies to nurses reflects the development of advanced roles in critical care. However, the contribution of nurse-performed POCUS to patient assessment and care management remains insufficiently synthesized.

Methods. A systematic literature review was conducted following PRISMA 2020 recommendations. PubMed, MEDLINE, Scopus, CINAHL, and Web of Science were searched without time restrictions. Studies involving adult ICU patients in which nurses used POCUS for bedside assessment or procedural guidance were included. Methodological quality was evaluated using Joanna Briggs Institute checklists and the Mixed Methods Appraisal Tool.

Results. Eleven studies published between 2018 and 2025 were included. Evidence suggests that nurse-performed POCUS can support bedside clinical reasoning and may lead to management changes. Benefits were mainly reported for ultrasound-guided vascular access and focused bedside assessment. Diagnostic reliability appeared acceptable when supported by structured training.

Discussion. Nurse-performed POCUS may represent a useful adjunct to nursing assessment in intensive care, potentially improving bedside evaluation and supporting advanced nursing practice. Further research is needed to clarify its impact on patient outcomes.

Keywords: Clinical Decision Support, Cardiovascular Prevention, Nursing Competencies

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