

POCUS as an adjunct to clinical examination and management in resource-limited emergency and critical care setting

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Point-of-care Ultrasonography (POCUS) has emerged as a crucial tool in emergency and critical care situations. Its value stems from its capacity to deliver quick diagnostic data at the point of care, assisting in prompt decision-making and enhancing patient outcomes in clinical practice. But there are also difficulties with using POCUS in these circumstances. (1) Different advantages of POCUS exist in settings with limited resources, such as emergency and critical care departments. POCUS enables quick interventions by allowing for the rapid viewing of anatomical structures and the detection of urgent circumstances like pneumo-thorax, pericardial effusion, or abdominal bleeding. It can lessen the need for expensive imaging techniques like CT scans or X-rays, which might be scarce or unavailable in places with few resources. POCUS can help with real-time guidance for procedures like thoracentesis, para-centesis, or central line insertion, lowering complications and increasing success rates. POCUS can help with the quick evaluation and triage of patients, allowing for the efficient use of scarce resources. POCUS has improved patient safety by lowering the chance of complications from invasive procedures. During procedures, real-time visualization helps prevent inadvertent injuries or punctures. POCUS enables ongoing monitoring of patients at the bedside. It provides important data for continuous patient treatment by evaluating fluid responsiveness, heart function, and lung conditions. Healthcare professionals now have more training and skill development opportunities thanks to the inclusion of POCUS in emergency and critical care residency programs. (2)

Some of the challenges in low-resource environments include issues with constrained healthcare budgets, the initial cost of obtaining ultrasound equipment, and subsequent maintenance is a barrier. Maintaining quality control, standardization, and ongoing training for POCUS can be difficult.

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Variability in image acquisition, interpretation, and reporting may result from a lack of established techniques, guidelines, and quality assurance mechanisms. Over-reliance on POCUS results without taking the clinical context into account is a concern, leading to potential errors in diagnosis or treatment decisions. (2,3)

The aforesaid problems might be solved by the development of regional POCUS expertise by investing in POCUS training programs. Workshops, mentoring initiatives, and advanced training may be used for this. Exploring collaborations with institutions or authorities to build maintenance and repair processes and gain funding for ultrasound equipment like probes. Creating regional POCUS usage standards and guidelines can help maintain uniformity and quality. Impact analyses, quality improvement projects, and appropriate documentation must all be carried out. Research that demonstrates POCUS's effectiveness and affordability in low-resource situations can support the case for its inclusion in healthcare systems.

In Ethiopia, POCUS education is an integral part of the 3-year Emergency medicine and critical care residency program. It has huge help in timely diagnosis, management, and safe procedural guidance of emergency conditions, especially for patients with trauma, respiratory distress, shock, DVT, and others for monitoring purposes. Different workshops are done on different aspects of POCUs for residents and consultants. International certifications, collaboration with organizations, and experience sharing are going on slowly in an uncoordinated manner by interested EMCC physicians. In the future, more work is needed on POCUS standardization, accreditation, fellowships, collaborations, and research.

Conflict of Interest

The author declares there is no conflict of interest.

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