

Evidence-based critical ultrasound: a mission possible

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Since the term “evidence-based medicine” (EBM) was coined in 1991 by Professor Gordon Guyatt from McMaster University [1], several developments occurred that involved various aspects of the field including its definition [2]. EBM can be defined as the integration of the best available evidence, together with patients’ expectations/preferences/values, with the health provider’s expertise (3Es). A simplified concept for EBM is shown in Fig. 1. The real impact of EBM is not in acquiring the state of art information technology to obtain the evidence, but rather in utilizing it appropriately. In the current era, clinicians should be valued based on how they think and not on what they know. The information mastery era is concerned with information management and not with information acquisition that allows one to control the information (not the reverse). EBM is a paradigm shift from advocacy to inquiry, from opinion to evidence, from disease-oriented outcome to patient-oriented outcome and from too many or too little information to information mastery.

The WINFOCUS organization is committed to utilizing EBM in all its practice and recommendations. Therefore, it established a committee for EBM within the organization to help to achieve this goal. Also, it was decided from the first issue of this new journal (*Critical Ultrasound Journal*) to have a devoted EBM section, which I am honored to chair with Dr. Larry Melniker. In each issue of this journal,

the reader may find in the “EBM section” two to three articles from the following possible five types:

1. *Submitted original manuscript article*, which consists of various submissions from different authors, which qualifies certain EBM criteria, with particular encouragement to systemic reviews and meta-analysis articles.
2. *Core knowledge article* that deals with essential concepts of EBM and clinical research, e.g., study designs, odds ratio, reproducibility, inter and intra-observer variability, diagnostic accuracy, guideline development process, grading of recommendations, etc.
3. *Publication review article* that scans and summarizes research evidence and provides the bottom line in small synopsis. In addition to publications in critical care, emergency medicine, radiology and other journals, special focus will be given to secondary research sources, e.g., cochrane reviews, ACP journal, etc. A publication review articles can have a summary of two to four other articles.
4. *Critical Appraisal article* in which one major article recently published in the field is subjected to a thorough CAT with its four components, RVRA (Relevance, Validity, Result’s clinical significance and Applicability). The result’s clinical significance in MP (Magnitude and Percision) while Applicability in the IPP (Intervention, Population and Preferences) of the patient.
5. *Clinical Practice Guidelines GPG/Recommendations* that shed light on one of the internationally recognized (e.g., SCCM) guidelines/recommendations and on how to assess and implement these CPG/recommendations after possible local adaptation. Evidence profiling by GRADE system is also a potential scope [3].

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Fig. 1 Simplifying EBM concepts

1 Major Aim

Best patient's Care

2 Major Principles

Evidences are:

Not Equal (Hierarchy of Evidence)

Not Enough (3 E)

3 Components

3 E

Evidence – Expertise – Expectations

4 Pillars for Critical appraisal

RVRA

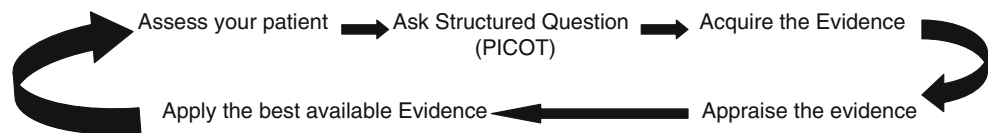
Relevance – Validity – Result's Clinical significance – Applicability

Results Clinical significance in **MP** (Magnitude & Percision)

Applicability in **IPP** (Intervention – Population – Preferences)

5 Steps

5 As



We hope that this section of CUJ will help in evidence-based practice, whether this practice is establishing diagnosis, choosing intervention, assessing harm, making a clinical decision or estimating cost-effectiveness. We also hope that it will produce evidence-based clinical practice guidelines and recommendations in the field of critical ultrasonography. Despite that many people felt that the mission was impossible when the concept of critical ultrasound was initially introduced, it is now a reality. I am fully confident that with your contribution, the mission of the section of “Evidence-Based Critical Ultrasound” in this journal will be a *mission possible*.

References

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3. <http://www.gradeworkinggroup.org>. Accessed 30 July 2009