Hussein D Kanji MD et al. (2014). Journal of Critical Care. *Journal of Critical Care*, *29*(5), 700–705. doi:10.1016/j.jcrc.2014.04.008

Based on "The User's Guides To The Medical Literature: A Manual for Evidence-Based Clinical Practice", second edition.

ARE THE RESULTS VALID?

At the beginning, did intervention and control groups start with the same prognosis?	
Was randomization process adequate?	This was a non-randomized study using a historical cohort.
Was randomization concealed?	No
Were patients in the study groups similar with respect to known prognostic factors?	The standard treatment group (historical control) had a slightly higher MAP (67 mmHg vs 62 mmHg, p=0.003). This could favor a slightly decreased mortality in the control group and a slightly higher mortality in the experimental group. For all other factors and markers of severity of illness, the groups were well matched (no clinically or statistically significant differences)
In the middle, was prognostic balance maintained as the study progressed?	
To what extent was the study blinded (patients, care givers, data collectors, outcome assessors, investigators and statisticians)?	The intensivists performing the limited echocardiography (LE) were not the treating physicians. All the treating physicians, and assumedly statisticians and outcome assessors were not blinded to the treatment allocation given the before-after design of the study.
If study was not sufficiently blinded, were the groups balanced regarding co-interventions and frequency of follow up?	Follow up and data collection was 100% in both groups.
Were outcomes assessed appropriately? What methods were used to enhance the quality of g multiple observations, training of assessors)?	Primary outcome was 28-day mortality. Secondary outcomes were fluid administration during the first 4 days and measurement of organ dysfunction as calculated as days alive and free of renal replacement therapy or mechanical ventilation. Both the primary and secondary outcomes are quite objective and would be easily obtained through review of patient records.
At the end, were the groups prognostically balanced at the study's completion?	
Was follow-up complete?	Yes

Were patients analyzed in the groups to which they were randomized (intention to treat principle)?	Yes
Was the trial stopped early?	No
WHAT ARE THE RESULTS?	
How large and how precise was the intervention effect?	Mortality @28 days: • LE group = 66% • Historical control = 56% • ARR = 10%, NNT = 10 • HR = 0.64 (0.41-0.98) (when controlled for MAP differences and APACHE II differences) Days alive and free of RRT • LE group = 28 • Historical Control = 25 • p=0.04 Days alive and free of MV • LE group = 20 • Historical Control = 18 • p=0.565 Incidence of AKI (any) • LE group = 68% • Historical Control = 95% • p=0.001
HOW CAN I APPLY THE RESULTS?	
Was the study PICO question similar to my PICO question?	There was no true PICO question generated from the journal club. This patient population and intervention doesn't exactly match up with the ED population since all of these patients had received their initial resuscitation prior in the ED and had arrived in the ICU prior to their enrollment in the study.
Were all-important outcomes considered? If composite endpoint, how it relate to the important-outcomes considered?	The most important outcome of mortality was considered unlike many studies within this literature. The secondary outcomes were also of consequence.

Is the intervention feasible?	The intervention is feasible. The limited echocardiography study that was performed by the intensivists could also be performed by an appropriately trained Emergency Medicine physician. It would be interesting to see this study repeated in the ED population after the patient had received an initial 2 L bolus and prior to disposition to the ICU.
Are the likely intervention benefits worth the potential harm and costs?	The are no harms to the performance of a limited echocardiogram. A potential harm would be withholding fluids from a patient in need of them. Based on this study, given proper training in the performance of the diagnostic test, it does not appear that that should be a concern.