ATS Highlights 2024: Critical Care Assembly Early Career Professionals



Nick Bosch, MD, MSc

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Tell us about yourself.

I am an intensivist and health services researcher focused on improving the delivery of care and outcomes for patients with critical illness. In addition to my research, I serve as Co-Director of the Epidemiology, Clinical, Services, and Outcomes (ECHO) Research Group, and Associate Director of the Center for Implementation and Improvement Sciences (CIIS) at Boston University Chobanian & Avedisian School of Medicine. Outside of work, I enjoy hiking in national parks with my wife and spending time with my two corgis.

Is your research clinical, basic science, or translational? Clinical

Tell us about your research.

I leverage practice variation in large clinical datasets and econometrics-based methods to improve the use of standard care treatments for patients with critical illness. My current projects focus on improving the effectiveness of routine blood transfusion and the effectiveness of escalating vasoactive therapies for patients with septic shock.

Where do you see yourself in 5 years?

Hopefully leading an independent CC Learning Health System research program at BU!

How has the Critical Care Assembly contributed to your career?

Participation in CC networking events and mentoring programs have provided me with unique insights from mentors outside my institution and helped to identify future collaborations.

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Effectiveness of Fludrocortisone Plus Hydrocortisone Versus Hydrocortisone Alone in Septic Shock: A Systematic Review and Network Meta-Analysis of Randomized Controlled Trials AJRCCM. 2024 Jan 25. doi: 10.1164/rccm.202310-1785OC. PMID: 38271488

Rationale: The effectiveness of adding fludrocortisone to hydrocortisone in septic shock remains uncertain. In this study, we assessed the comparative effectiveness of fludrocortisone plus hydrocortisone to hydrocortisone alone in adults with septic shock.

Methods: Systematic review and Bayesian network meta-analysis of peer-reviewed randomized trials. The primary outcome was all-cause mortality at last follow-up.
Results: Out of 7,553 references, we included 17 trials (7,688 patients). All-cause mortality at last follow-up was lowest with fludrocortisone plus hydrocortisone (RR: 0.85, 95% Crl: 0.72-0.99, 98.3% probability of superiority, moderate-certainty evidence), followed by hydrocortisone alone (RR: 0.97, 95% Crl: 0.87-1.07, 73.1% probability of superiority, low-certainty evidence). Fludrocortisone plus hydrocortisone plus hydrocortisone alone (RR: 0.88, 95% Crl: 0.74-1.03, 94.2% probability of superiority, moderate-certainty evidence).
Conclusions: In adult septic shock patients, fludrocortisone plus hydrocortisone

was associated with lower risk of all-cause mortality at last follow-up than hydrocortisone alone.



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