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Critical Care Reviews Newsletter

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Ellisa Milford, Matthew Semler and Jonathan Casey discuss the RSI trial at CCR Down Under 2025

Hello Matt

Welcome to the 731st Critical Care Reviews Newsletter, bringing you the best critical care research and open access articles from across the medical literature from December 8th to 14th. We had an incredible two days of high quality science at CCR Down Under 2025 in



Melbourne last week (which is why this newsletter is late again). Our thanks to our wonderful partners: *the [Alfred Intensive Care Academic Centre](#), the [Australia & New Zealand Intensive Care Research Centre](#) (ANZIC-RC) and [Monash University](#).*

The highlights of this week's edition are the four randomised controlled trials presented & published at CCR Down Under; systematic reviews and meta analyses on [vasopressors in cardiogenic shock](#) & [vasopressin, steroids, and epinephrine-based regimens in cardiac arrest](#); and observational studies on [blood biomarkers for the prediction of outcome after cardiac arrest](#) and the [effect of noninvasive ventilation on tracheal reintubation among patients with hypoxemic respiratory failure following abdominal surgery](#)

There are also guidelines on [monitoring of invasive assisted mechanical ventilation](#) & [large-volume abdominal and pleural paracentesis with emphasis on coagulopathy management](#); narrative reviews on [current standard of care for septic shock](#) and [acute right ventricular failure in the medical ICU](#); editorials on [frailty in cardiac arrest outcomes](#) & [intensive care to facilitate organ donation](#); and commentaries on [central venous catheter care and central line-associated bloodstream infection risk reduction](#) & [leveraging observational data for causal inference](#).

If you only have time for one narrative review paper this week, try this one on [the role of catecholamines in aneurysmal subarachnoid hemorrhage](#).

The trials for CCR26 will start to be announced very soon! Registration should hopefully open before Christmas too.

CCR Down Under 2025

- [Casey. Ketamine or Etomidate for Tracheal Intubation of Critically Ill Adults. N Engl J Med 2025;epublished December 9th](#)

- [Giamarellos-Bourboulis. Precision Immunotherapy to Improve Sepsis OutcomesThe ImmunoSep Randomized Clinical Trial. JAMA 2025;epublished December 8th](#)
- **Editorial:** [Precision Therapy for SepsisThe End of the Beginning? JAMA 2025;epublished December 8th](#)
- [Reade. Cryopreserved vs Liquid-Stored Platelets for the Treatment of Surgical Bleeding. The CLIP-II Randomized Noninferiority Clinical Trial. JAMA 2025;epublished December 8th](#)
- **Research Summary:** [Cryopreserved vs Liquid-Stored Platelets for the Treatment of Surgical Bleeding. JAMA 2025;epublished December 8th](#)
- **Editorial:** [Neal. An Oasis in the Platelet Desert? JAMA 2025;epublished December 8th](#)
- [Sinnige. Effect of Automated Closed-Loop Ventilation vs Protocolized Conventional Ventilation on Ventilator-Free Days in Critically Ill Adults. A Randomized Clinical Trial. JAMA 2025;epublished December 8th](#)
- **Editorial:** [Sklar. Automated Modes to Improve Mechanical Ventilation Outcomes—The Ghost in the Machine. JAMA 2025;epublished December 8th](#)

Other Research

Randomised Controlled Trials

- [Burstein. Prediction of Bacteremia and Bacterial Meningitis Among Febrile Infants Aged 28 Days or Younger. JAMA 2025;epublished December 8th](#)
- [Searns. Moving the Field Forward to Safely Do Less With Febrile Neonates. JAMA 2025;epublished December 8th](#)
- [Oei. Targeted Oxygen for Initial Resuscitation of Preterm InfantsThe TORPIDO 30/60 Randomized Clinical Trial. JAMA 2025;epublished December 10th](#)
 - o **Research Summary:** [Targeted Oxygen for Initial Resuscitation of Preterm Infants. JAMA 2025;epublished December 10th](#)
- [Jeppsson. Ticagrelor and Aspirin or Aspirin Alone after Coronary Surgery for Acute Coronary Syndrome. N Engl J Med 2025;393:2313-2323](#)
- [Bennett-Guerrero. Anesthesia Type during Cancer Surgery: Results of the GA-CARES Randomized, Multicenter Trial. Anesthesiology 2026;144\(1\):51-62](#)
- [Zhu. Effect of S-Ketamine on Postoperative Delirium in Elderly Patients Undergoing Arthroplasty: A Randomized Controlled Trial. Anesthesiology 2026;144\(1\):63-76](#)

- [Harrois. Awake Prone Positioning in Patients With COVID-19 Respiratory Failure: A Randomized Clinical Trial. JAMA Netw Open 2025;8\(12\):e2548201](#)
- [Zarbock. A preventive care strategy to reduce moderate or severe acute kidney injury after major surgery \(BigpAK-2\): a multinational, randomised clinical trial. Lancet 2025;406\(10521\):2782-2791](#)
- [Sedláčková. Immediate “sipping” vs. delayed oral fluid intake after extubation: A randomized controlled trial. J Crit Care 2026;91:155212](#)
- [Vreman. The impact of a noise reduction bundle on ICU staff: A stepped-wedge cluster randomized clinical trial. Intensive Crit Care Nurs 2026;93:104306](#)
- [Mekontso Dessap. Comparison of Prophylactic and Therapeutic Doses of Anticoagulation for Acute Chest Syndrome in Sickle Cell Disease: The TASC Double-Blind Controlled Randomized Clinical Trial. Am J Respir Crit Care Med 2025;211\(5\):832-841](#)
- [Gaillard. Prophylactic norepinephrine infusion to reduce severe hypotension during induction of anaesthesia in patients undergoing cardiac surgery: a randomised controlled single-centre clinical trial. Br J Anaesth 2025;epublished December 10th](#)
- [de Baat. Effect of Systemic Hydrocortisone in Ventilated Infants Born Preterm: Mortality and 5.5 Year Neurodevelopmental Outcomes of a Randomized Clinical Trial. J Pediatr 2025;epublished December 12th](#)

Systematic Reviews & Meta Analyses

- [Tang. Comparison of Esmolol Versus Landiolol on Mortality in Adult Patients With Sepsis: A Systematic Review and Network Meta-Analysis. Crit Care Med 2025;epublished November 25th](#)
- [Hosoya. Comparative Efficacy of Noradrenaline vs. Other Vasopressors on Outcomes in Patients With Cardiogenic Shock – A Systematic Review and Meta-Analysis. Circ Rep 2025;7\(12\):1154-1161](#)
- [Zeng. Association between hyperoxia and mortality in patients undergoing extracorporeal membrane oxygenation: A systematic review and meta-analysis. J Crit Care 2026;91:155338](#)
- [Alsagban. The effect of dexmedetomidine on clinical and management outcomes in patients with septic shock: A systematic review and meta-analysis of randomized trials. J Crit Care 2026;91:155251](#)

- [Costa. Effectiveness of antibiotic prophylaxis for ventilator-associated pneumonia in acute brain injury: a systematic review and meta-analysis. Infection 2025;published December 11th](#)
- [Saghafi. Comparative effectiveness of vasopressin, steroids, and epinephrine-based regimens in cardiac arrest: A network meta-analysis of clinical trials. Am J Emerg Med 2026;99:155-166](#)
- [Sun. Perioperative tight glucose control regimens for preventing surgical site infections following cardiac surgery: a systematic review and meta-analysis of randomized controlled trials. J Clin Anesth 2026;108:112051](#)
- [Raja. Evaluating sedation strategies in acute respiratory distress syndrome: A meta-analysis of inhaled versus intravenous agents. J Clin Anesth 2026;109:112100](#)
- [Mehta. Complete versus culprit lesion-only revascularisation for acute myocardial infarction \(Complete Revascularisation Trialists' Collaboration\): an individual patient data meta-analysis of randomised trials. Lancet 2025;406\(10521\):2772-2781](#)

Observational Studies

- [Moseby-Knappe. Blood biomarkers for the prediction of outcome after cardiac arrest: an international prospective observational study within the Targeted Hypothermia versus Normothermia after Out-of-Hospital Cardiac Arrest \(TTM2\) trial. Lancet Respir Med 2025;published December 11th](#)
- o *Commentary:* [Lima. Neurofilament light chain in post-cardiac arrest prognostication: from signal to strategy. Lancet Respir Med 2025;published December 11th](#)
- [Srinivasa. The utility of angiopoietin-2 and blood cell-derived biomarker indices in differentiating rapidly improving acute respiratory distress syndrome \(RIARDS\) phenotype from persistent-ARDS: a prospective observational study. Ann Med 2025;57\(1\):2596535](#)
- [Glaros. The Performance of the Surrogate Informed Consent Process for Critical Care Research: A Multi-Modal Study of Investigators, Coordinators, Surrogates, and Patients. Chest 2025;168\(6\):1355-1363](#)
- [Tietbohl. Approaches for Establishing Trust and Alleviating Stress During the Surrogate Informed Consent Process for Critical Care Research. Chest 2025;168\(6\):1364-1373](#)
- [Viglianti. Institutional Variation in Specialty Palliative Care Consultation Among Patients With Persistent Critical Illness: A Cohort Study. Chest 2025;168\(6\):1374-1382](#)

- o *Editorial:* [Andersen. Palliative Care in Persistent Critical Illness: The Importance of Institutional Context. Chest 2025;168\(6\):1282-1283](#)
- [Naudet-Lasserre. Effect of noninvasive ventilation on tracheal reintubation among patients with hypoxemic respiratory failure following abdominal surgery: a Bayesian post-hoc analysis of the NIVAS trial. Crit Care 2025;epublished](#)
- [Zampieri. Impact of different preferred functional outcomes on the results of the pre-hospital antifibrinolytics for traumatic coagulopathy and hemorrhage \(PATCH-trauma\) trial. J Crit Care 2026;91:155255](#)

Guidelines & Position Statements

- [Joshi. 2026 American Society of Anesthesiologists Practice Guideline on Perioperative Pain Management Using Local and Regional Analgesia for Cardiothoracic Surgeries, Mastectomy, and Abdominal Surgeries. Anesthesiology 2026;144\(1\):19-43](#)
- [Bartal. Proposed Clinical Practice Guidance for Large-Volume Abdominal and Pleural Paracentesis with Emphasis on Coagulopathy Management. J Clin Med 2025;14\(23\):8287](#)
- [Colombo. Monitoring of invasive assisted mechanical ventilation: a good clinical practice document by the Italian Society of Anesthesia, Analgesia, Resuscitation, and Intensive Care \(SIAARTI\). J Anesth Analg Crit Care 2025;5:90](#)

Narrative Reviews

Clinical

Neurological

- [Nalliah. The role of catecholamines in aneurysmal subarachnoid hemorrhage: a narrative review. Acute Crit Care 2025;40\(4\):513–520](#)
- [Routkevitch. Spinal cord vascular autoregulation: key concepts and opportunities to improve management. Spinal Cord 2025;epublished December 9th](#)

Circulatory

- [Dodi. Acute Right Ventricular Failure in the Medical ICU. Lung 2025;203\(1\):107](#)
- [Dull. Physiology and molecular mechanisms of the “third fluid space”. J Clin Med 2025;14\(23\):8491](#)

- [Tateishi. Extracorporeal Membrane Oxygenation in Acute Cardiovascular Care. Circ Rep 2025;7\(12\):1162-1170](#)
- [Jendoubi. Management of post-resuscitation vasoplegic shock: targets, strategies and outcomes. Crit Care 2025;epublished December 12th](#)
- [Zonneveld. Current Pharmacological and Non-Pharmacological Decongestion Strategies in Acute Heart Failure – Evidence and Practical Guidance. J Card Fail 2025;epublished December 10th](#)
- [Boella. Ultrasound as the New Stethoscope: A Journey From Just Locating Fluid to Assessing Haemodynamics and Venous Congestion. Br J Hosp Med 2025;epublished December 8th](#)
- [Banfi. Advancements in Pulmonary Embolism Management: Current Approaches and Future Directions. Rev Cardiovasc Med 2025;26\(11\):44614](#)
- [Bertrand. Applied physiology at the bedside: using invasive blood pressure as a true monitoring tool. Ann Intensive Care 2025;15:192](#)
- [Calabrese. Modulation of the Renin–Angiotensin System in Critically Ill Patients: Addressing Seven Key Questions for the Intensivist. Anesthesiology 2026;144\(1\):163-176](#)
- [Zamith. Should I target the blood pressure from the arterial line or the cuff? A practical approach for dealing with widely discordant measurements. J Clin Med 2025;14\(24\):8616](#)

Airway

- [Alatau. Artificial intelligence for predicting difficult airways: a review. J Clin Med 2025;14\(23\):8600](#)

Respiratory

- [Nazarian. Advances in bedside imaging: lung ultrasound. Intensive Care Med Exp 2025;13:126](#)
- [Shi. Invasive ventilator exhaust in critical care: aerosol transmission risks and management strategies – a narrative review. Crit Care 2025;29:521](#)

Gastrointestinal

- [Aboumarie. Cardiovascular effects of intra-abdominal hypertension: current perspectives. Anaesthesiol Intensive Ther 2025;57\(1\):340-355](#)

Liver

- [Fiore. Hypertransaminasemia in non-cirrhotic critically-ill patients. World J Hepatol 2025;17\(11\):109645](#)
- [Ricci. Porphyrrias: Pathophysiology and clinical management recommendations for hepatologists. Hepatol Commun 2025;9\(12\):e0822](#)

Renal

- [Oosterom-Eijmael. Cardiac surgery-associated acute kidney injury. BJA Educ 2025;epublished December 8th](#)

Haematological

- [Ampatzidou. Postoperative Thrombocytopenia in Cardiac Surgery: Patterns, Differential Diagnosis and Management of Heparin-Induced Thrombocytopenia \(HIT\). J Clin Med 2025;14:8765](#)

Sepsis & Infectious Disease

- [Delaney. Current standard of care for septic shock. Intensive Care Med 2025;epublished December 28th](#)
- [Slepčánová. Diagnostic Approaches to Invasive Candidiasis: Challenges and New Perspectives. Mycopathologia 2026;191:4](#)
- [Li. Treatment of Carbapenem-Resistant Gram-Negative Bacterial Infections with Polymyxins: A Review. Infect Drug Resist 2025;18:6313-6322](#)
- [Paraschiv. Current challenges in understanding, diagnosing and managing sepsis-induced cardiac dysfunction. J Crit Care 2026;91:155250](#)

Perioperative

- [Salter. Perioperative Considerations for Patients Undergoing Percutaneous Ablative Therapy for Atrial Fibrillation. Anesthesiology 2026;144\(1\):191-202](#)
- [Kumar. Psychological safety in the operating theatre environment. BJA Educ 2025;epublished November 21st](#)

Paediatrics & Neonatology

- [Osborne. Technical considerations and applications of point-of-care ultrasound in the NICU. Semin Perinatol 2025;epublished December 5th](#)

Obstetrics

- [Murphy. Respiratory disease in pregnancy. BJA Educ 2025;25\(12\):481–492](#)

Miscellaneous

- [Danel. Objective monitoring of acute pain and nociception in anaesthesia and intensive care: evidence and applications. Anaesthesiol Intensive Ther 2025;57\(1\):365–380](#)

Editorials

- [Boulet. Frailty: a prognostic marker or a self-fulfilling prophecy in cardiac arrest outcomes? Intensive Care Med 2025;epublished December 8th](#)
- [Lakbar. Melatonin for ICU delirium: a promising molecule, a broken path. Intensive Care Med 2025;epublished December 8th](#)
- [Legrand. Sepsis phenotypes in sub-Saharan Africa: a step toward fixing the growing scientific fracture with resource-limited settings. Intensive Care Med 2025;epublished December 8th](#)
- [Alismail. Large Language Models as Item Writer: Innovation or Limitation? Are We Ready to Hand Over the Pen? Chest 2025;168\(6\):1286-1287](#)
- [Bidar. The “citrate challenge”: mitigating the risk of citrate accumulation in high-risk patients. Crit Care 2025;29\(1\):524](#)
- [Chavda. Cerebrospinal fluid volume: the overlooked determinant in brain and spinal stroke. Ann Med Surg 2025;87\(12\):7956-7957](#)
- [Le Dorze. Intensive Care to Facilitate Organ Donation: Insights From the French Guidelines. Transpl Int 2025;38:14840](#)

Commentaries

- [Davis. The CLARITY initiative: Clinical Literature Appraisal and Research education in Infectious diseases and microbiology. CMI Commun 2025;epublished November 28th](#)
- [Woodham. To Clip or Not to Clip: The Hairy Question of Central Venous Catheter Care and Central Line-Associated Bloodstream Infection Risk Reduction. Chest 2025;168\(6\):1298-1299](#)
- [Bailly. Leveraging Observational Data for Causal Inference: A Concise Guide to Inverse-Probability-of-Treatment Weighting in Clinical Research. Chest 2025;168\(6\):1300-1303](#)
- [Honoré. Xuebijing as a potential therapeutic option for septic shock: the need for rigorous evaluation of life-threatening adverse effects. Crit Care 2025;29:522](#)

Correspondence

- [Garg. Autonomy versus paternalism: what is the physician's responsibility in a life-threatening situation? Acute Crit Care 2025;40\(4\):635-637](#)

Case Reports

- [Erblich. Prolonged Flow-Controlled Ventilation in a Patient With ARDS and Multiple Trauma: A Case Report. Chest 2025;168\(6\):e167–e170](#)
- [Beltrami. An Unexpected Cause of Asymmetric Left Ventricular Hypertrophy. Chest 2025;168\(6\):e171–e177](#)
- [Wang. A Case of Rapidly Progressive Dyspnea and Diffuse Pulmonary Lesions. Chest 2025;168\(6\):e179–e182](#)
- [de Boer. A 63-Year-Old Man With a “Clicking Sound” in the Chest on Respiration. Chest 2025;168\(6\):e183–e185](#)
- [Le. Rare Case of Progressive Osteolysis and Chylothorax in an Adolescent Male. Chest 2025;168\(6\):e187–e193](#)
- [Cieza Terrones. Extreme Fluid Accumulation Syndrome or Compartmental Balance Disorder? A Sepsis-Associated Acute Kidney Injury Case Report and Literature Review. J Clin Med 2025;14\(23\):8310](#)
- [Rao. A case of suspected 2,4-D ethyl ester poisoning mimicking organophosphate toxicity: a diagnostic and therapeutic challenge. Acute Crit Care 2025;40\(4\):632-634](#)

I hope you find this newsletter useful.

Until the weekend.

Rob

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