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Sepsis

Current Awareness Bulletin

January 2026

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  Next sessions: 19th February 2026 @ 3pm & 27th March @ 4pm

Book a session today at https://forms.office.com/e/HyiSXfDaYV (these sessions will be held on a monthly basis)

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1. **Retrospective observational cohort study of patients diagnosed with sepsis: is this really sepsis?.**

Authors: Barker, Harry and Goodacre, Steve

Publication Date: Jan 21 ,2026

Journal: Emergency Medicine Journal 43(2), pp. 116–121

Abstract: BACKGROUND: The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3) defines sepsis as a life-threatening organ dysfunction due to a dysregulated host response to infection. Measuring a dysregulated host response is difficult in practice, so patients with organ dysfunction due to other causes, such as an underlying comorbidity or the direct effects of infection, may be diagnosed with sepsis. We aimed to characterise patients diagnosed with sepsis and meeting the Sepsis-3 criteria according to whether organ dysfunction was potentially due to a dysregulated immune response or an alternative cause. METHODS: We undertook a single-centre, retrospective, observational study of patients admitted to hospital with sepsis between 1 January 2022 and 31 December 2022. We reviewed clinical, laboratory and imaging records to determine whether cases met Sepsis-3 criteria and whether organ dysfunction was more likely to be due to a dysregulated immune response or an identifiable alternative explanation. RESULTS: We analysed 373 cases, of whom 303 (81.2%) fulfilled the Sepsis-3 criteria. Of these, 78 (25.7%, 95% CI 21.4% to 30.0%) had an alternative explanation for their organ dysfunction, with 28 (9.2%) due to exacerbation of a comorbidity, 42 (13.9%) direct effects of infection and 8 (2.6%) involving evidence of respiratory dysfunction based on 'normal' oxygen saturation measurements. Patients with an alternative explanation for their organ dysfunction tended to be less acutely ill (median (IQR) National Early Warning Score 5 (3-8) vs 7 (5-10), p: We analysed 373 cases, of whom 303 (81.2%) fulfilled the Sepsis-3 criteria. Of these, 78 (25.7%, 95% CI 21.4% to 30.0%) had an alternative explanation for their organ dysfunction, with 28 (9.2%) due to exacerbation of a comorbidity, 42 (13.9%) direct effects of infection and 8 (2.6%) involving evidence of respiratory dysfunction based on 'normal' oxygen saturation measurements. Patients with an alternative explanation for their organ dysfunction tended to be less acutely ill (median (IQR) National Early Warning Score 5 (3-8) vs 7 (5-10), pCONCLUSION: Around a quarter of patients

diagnosed with sepsis and meeting the Sepsis-3 criteria were unlikely to have a dysregulated immune response causing their organ dysfunction. Focusing sepsis diagnosis on those most likely to have a dysregulated immune response could identify patients who are most likely to benefit from sepsis treatment and could improve sepsis care.

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2. **Bodily and Cognitive Experience in Patients With Sepsis and Delirium or Subsyndromal Delirium.**

Authors: Espinoza E.A.;CastilloNunez N.;Olivares Araya P.;Barnech R.F.O. and Salfate, V. V.

Publication Date: 2026

Journal: Nursing in Critical Care 31(1) (pagination), pp. Article Number: e70256. Date of Publication: January 2026

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3. **Rising rates of sepsis in England: an ecological study.**

Authors: Allen V.B.;Bechman K.;Russell M.D.;Adas M.A.;Goodman A.L.;McPhail M.J.;Norton S. and Galloway, J. B.

Publication Date: 2025

Journal: Infection 53(6), pp. 2601–2612

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4. **Development of an early sepsis treatment-decision algorithm in children and adolescents with cancer in a middle-income country: Results from a multinational modified Delphi consensus.**

Authors: Aristizabal P.;Fonseca E.V.;Portilla C.;Camacho G.;Aguilar J.;Bolivar S.;McDaniel M.;Jaramillo J.;Wang Y.;Harvey H.;Nguyen M.;Milder E.;Ishimine P.;QuinonesPerez B.;Quijano M.;Ramirez O.;Padua L.T. and Lopez, E.

Publication Date: 2025

Journal: Journal of Clinical Oncology 43(16 Supplement) (pagination), pp. Article Number: 1540. Date of Publication: 2025

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5. **Respiratory sepsis: a 12-year prospective observational study in critically ill patients.**

Authors: Azkarate, Izaskun;Salas, Estibaliz;Cabarcos, Edurne;Ganzarain, Maialen;Quevedo, Inigo;Elosegui, Itxaso and Eguibar, Itziar

Publication Date: 2025

Journal: Respiratory Medicine 249, pp. 108476

Abstract: BACKGROUND: Pneumonia is the leading source of sepsis worldwide and remains associated with high morbidity and mortality. However, prospective long-term studies specifically describing the clinical characteristics, microbiology, and outcomes of patients with respiratory-source sepsis are scarce. METHODS: We conducted a 12-year prospective observational study (January 1, 2012-December 31, 2023) at the Department of Intensive Care Medicine, Donostia University Hospital, the only tertiary care center in Gipuzkoa, Spain. All adult ICU patients with sepsis or septic shock were included; this analysis focused on those with pneumonia as the infection source. Demographic and clinical features, microbiology, management, and prognostic factors for mortality were analyzed. RESULTS: Our sepsis registry included 2116 ICU patients with sepsis or septic shock; pneumonia was identified as the infectious source in 590 cases (27.9 %), of which 434 (73.6 %) were community-

acquired (CAP) and 156 (26.4 %) hospital-acquired (HAP), including 19 ventilator-associated pneumonia (VAP). Compared with CAP, HAP patients had higher APACHE II and SOFA scores, more frequent hemodynamic instability and thrombocytopenia, and greater need for vasoactive support, mechanical ventilation (MV), and renal replacement therapy (RRT). No significant differences were observed in sex, age, or admission levels of procalcitonin and lactate. Streptococcus pneumoniae predominated in CAP, whereas Escherichia coli and Pseudomonas aeruginosa were most common in HAP. ICU mortality was 24.7 % and overall hospital mortality 33.7 %, both higher in HAP. Multivariate analysis identified nosocomial origin as the strongest independent predictor of mortality, along with thrombocytopenia, hypoglycemia, need for MV and RRT, higher APACHE II, and lactate at admission. CONCLUSIONS: Within our prospective sepsis registry, pneumonia was the most frequent infectious source. Nosocomial pneumonia, although less common than CAP, was associated with greater severity and emerged as the main independent predictor of mortality.

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6. **The Role of Pharmacists with Clinical Decision Support Systems in the Drug Related Problems (DRPs) Aspect of Sepsis Patients in the ICU: A Review.**

Authors: Bakhtiar M.I.;Yasin N.M.;Andalusia L.R. and Sari, I. P.

Publication Date: 2025

Journal: Research Journal of Pharmacy and Technology 18(10), pp. 5071–5080

Abstract: Identifying drug-related problems (DRPs) and providing recommendations to clinicians for sepsis patients involves various forms of pharmacist oversight aimed at preventing improper treatment and enhancing patient outcomes. The creation of a pharmacist clinical decision support system (CDSS) to identify DRPs in sepsis patients is expected to enhance the pharmaceutical care services provided by pharmacists, enabling effective and prompt intervention within multidisciplinary teams in hospitals, particularly in intensive care units where patients are critically ill and require fast, precise, and optimal services. Method(s): This study employs a literature review, also known as descriptive analysis, based on existing research data. Result(s): The findings indicate that the use of CDSS by pharmacists, particularly for sepsis patients, has been shown to improve the role of pharmacists and enhance clinical outcomes for patients. Conclusion(s): Based on the results and discussions presented, it can be concluded that CDSS is very effective for identifying drug-related problems (DRPs) more quickly and accurately. However, there remain limitations in previous research regarding the comprehensive development of a medication monitoring system by pharmacists based on Clinical Decision Support Systems (CDSS) for sepsis therapy.

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7. **Sepsis and septic shock case identification from electronic health records: an open-source workflow and comparison of cohorts by criteria.**

Authors: Bauer S.R.;Mourany L.;Gunsalus P.R.;Milinovich A.;KaneGill S.L.;Wang X.;Tarabichi Y.;Vachharajani V. and Dalton, J. E.

Publication Date: 2025

Journal: Critical Care 29(1) (pagination), pp. Article Number: 523. Date of Publication: December 2025

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8. **Prehospital Interventions, Early Detection, and Their Impact on Survival Outcomes in Patients with Sepsis: A Systematic Review.**

Authors: Bukhari E.M.;Jurays N.S.;Alarmati S.T.;Almalki S.N.;Alsobehi N.A.;Turjoman L.;Almutairi A.K.;Alghamdi B.S.;Alsayed N.M.;Alshehri Z.A.;Alzubaidi T.A. and Alsayed, A. I.

Publication Date: 2025

Journal: Prehospital Emergency Care , pp. 1–15

Abstract: OBJECTIVES: Sepsis is a life-threatening condition that results in significant morbidity and mortality, particularly when progressing to septic shock. Early detection and treatment, especially before hospital arrival, are crucial for improving outcomes. This review aimed to identify, assess, and summarize studies on the effectiveness of early detection methods and prehospital interventions in enhancing survival rates for patients with sepsis. METHOD(S): This descriptive systematic review followed the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols guidelines. A comprehensive literature search was conducted across six electronic databases to identify relevant studies published up to November 2024. Studies were screened and independently reviewed by four reviewers, and bias was assessed using the Cochrane Risk of Bias tool for randomized controlled trials (RCTs) and the Methodological Index for Non-Randomized Studies tool for observational studies. RESULT(S): This review included 23 studies comprising 16,246 patients. Most of the studies were retrospective (57%), with RCTs (22%) and prospective observational studies (13%). Prehospital interventions-including antibiotic therapy (ABT), intravenous fluids, and norepinephrine-were associated with improved outcomes. Antibiotic therapy significantly reduced 30-day mortality. Norepinephrine improved survival, and early intravenous fluid administration lowered hospital mortality. The National Early Warning Score was superior to the quick Sequential Organ Failure Score in screening for sepsis (area under the receiver operating characteristic curve, 0.74 vs. 0.68). Emergency medical services (EMS) tools enhanced adherence to the 3-h sepsis bundle (80% vs. 44.2%). CONCLUSION(S): Early antibiotic administration, fluid resuscitation, and hemodynamic stabilization reduce mortality rates and improve clinical outcomes. Validated sepsis screening tools exhibit predictive utility and may support EMS protocols for earlier recognition, though evidence linking their use to improved outcomes remains limited.

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9. **When and for Whom Does Intensive Care Unit Admission Change the Prognosis in Oncology?-A Scoping Review.**

Authors: Codru I.R. and Vecerzan, L.

Publication Date: 2025

Journal: Cancers 17(22) (pagination), pp. Article Number: 3636. Date of Publication: 01 Nov 2025

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10. **Evaluation of Stress-Dose Steroid Weaning Strategies in Patients Following Septic Shock.**

Authors: Denninger J.M.;Toler J.A.;Skovran S. and Westlake, E. M.

Publication Date: 2025

Journal: Annals of Pharmacotherapy (pagination), pp. Date of Publication: 2025

Abstract: Background: The 2016 Surviving Sepsis Campaign (SSC) guidelines recommended tapering corticosteroids once vasopressors were no longer needed, while the 2021 update suggested IV hydrocortisone for patients with ongoing vasopressor needs but offered no guidance on tapering. Evidence on steroid taper duration remains limited. Objective(s): This study evaluates corticosteroid tapering strategies in septic shock patients. Method(s): A retrospective analysis, approved by the UNC Human Research Review Committee, was conducted on adult critically ill patients with septic shock who received vasopressors and hydrocortisone between January 1, 2016, and April 1, 2024. Patients were divided into 2 groups based on the duration of their steroid taper: rapid taper (=72 hours). The primary outcome was vasopressor reinitiation within 72 hours of all vasopressors being stopped. Secondary outcomes included vasopressor reinitiation within 24 hours of all vasopressors being stopped, length of stay (LOS), mortality, and adverse effects. The study was approved by the University of North Carolina Human Research Review Committee. Result(s): A total of 312 patients were analyzed: 222 received a rapid taper and 90 received a prolonged taper. Vasopressor reinitiation within 72 hours occurred in 48% of the rapid taper group and 66% of the prolonged group (P = 0.006). Within 24 hours, reinitiation was 42% in the rapid group versus 56% in the prolonged group (P = 0.039). Mortality was 32% in the rapid group and 41% in the prolonged group (P = 0.185). Mean intensive care

unit (ICU) LOS was 215 hours for the rapid group and 418 for the prolonged group (P Result(s): A total of 312 patients were analyzed: 222 received a rapid taper and 90 received a prolonged taper. Vasopressor reinitiation within 72 hours occurred in 48% of the rapid taper group and 66% of the prolonged group (P = 0.006). Within 24 hours, reinitiation was 42% in the rapid group versus 56% in the prolonged group (P = 0.039). Mortality was 32% in the rapid group and 41% in the prolonged group (P = 0.185). Mean intensive care unit (ICU) LOS was 215 hours for the rapid group and 418 for the prolonged group (P Result(s): A total of 312 patients were analyzed: 222 received a rapid taper and 90 received a prolonged taper. Vasopressor reinitiation within 72 hours occurred in 48% of the rapid taper group and 66% of the prolonged group (P = 0.006). Within 24 hours, reinitiation was 42% in the rapid group versus 56% in the prolonged group (P = 0.039). Mortality was 32% in the rapid group and 41% in the prolonged group (P = 0.185). Mean intensive care unit (ICU) LOS was 215 hours for the rapid group and 418 for the prolonged group (P Result(s): A total of 312 patients were analyzed: 222 received a rapid taper and 90 received a prolonged taper. Vasopressor reinitiation within 72 hours occurred in 48% of the rapid taper group and 66% of the prolonged group (P = 0.006). Within 24 hours, reinitiation was 42% in the rapid group versus 56% in the prolonged group (P = 0.039). Mortality was 32% in the rapid group and 41% in the prolonged group (P = 0.185). Mean intensive care unit (ICU) LOS was 215 hours for the rapid group and 418 for the prolonged group (P

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11. **The Impact of Age on In-Hospital Mortality in Patients with Sepsis: Findings from a Nationwide Study.**

Authors: Gabay, Ohad;Smadar-Shneyour, Ruth;Adi, Shiloh;Boyko, Matthew;Binyamin, Yair;Novack, Victor and Frenkel, Amit

Publication Date: Oct 28 ,2025

Journal: Journal of Clinical Medicine 14(21)

Abstract: Background: Age is a well-established determinant of sepsis outcomes, often integrated into severity scoring systems. However, most studies focus on critically ill patients in intensive care units (ICUs), with limited insight into how age influences mortality in non-ICU settings, particularly across the full adult lifespan. Objective: To investigate the relationship between age and in-hospital mortality in patients with sepsis hospitalized in internal medicine wards, using age-stratified logistic and spline regression models. Methods: We conducted a retrospective, multicenter cohort study involving 4300 adult patients admitted to internal medicine wards at eight academic hospitals affiliated with Clalit Health Services in Israel between December 2001 and October 2020. All patients were diagnosed with sepsis during hospitalization and died during their hospital stay. Patients were stratified into seven age groups (18-34, 35-44, 45-54, 55-64, 65-74, 75-84, >85 years). Logistic regression identified age-specific comorbidities associated with mortality. Adjusted spline regression models were used to estimate mortality probabilities across age ranges. Results: The cohort had a mean age at death of 78.84 years, and 51.7% were female. Mortality probability increased with age but demonstrated non-linear trends. Sharp fluctuations in predicted mortality were observed in middle-aged groups (especially ages 45-54), with peaks not captured in conventional binary or linear models. Hematologic and solid neoplasms were strongly associated with mortality in younger groups, while cardiovascular comorbidities such as heart failure and atrial fibrillation were more prominent in older adults. Conclusions: Age is a major determinant of in-hospital mortality in septic patients on internal medicine wards, but its effect is non-linear and age-specific. Our findings highlight a unique population of patients with severe sepsis not managed in critical care settings and underscore the need for more nuanced, age-stratified risk assessment models outside of the ICU.

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12. **Pretreatment assessment for febrile neutropenia and sepsis risk: Utilizing growth factors to reduce hospital readmissions.**

Authors: Harris E.E.;Wilson M.;Dreyer E.;Howard C.;Pollinger K. and Haines, P.

Publication Date: 2025

Journal: JCO Oncology Practice 21, pp. 455

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13. **Identification and longitudinal assessment of sepsis phenotypes derived from routine clinical data in critically ill patients: a retrospective repeated measures latent profile analysis.**

Authors: Jung C.;Oetzmann N.;Gillmann H.J. and Stueber, T.

Publication Date: 2025

Journal: Infection 53(6), pp. 2633–2644

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14. **Association between sepsis and all-cause and cause-specific premature mortality: a prospective cohort study.**

Authors: Kang W.;Zhong J.;Wang F.;Li W.;Dou Z.;Huang S.;Yin S.;Yuan L. and You, D.

Publication Date: 2025

Journal: Frontiers in Public Health 13, pp. 1666675

Abstract: Objective: This study aimed to examine the association between sepsis, including its subtypes, and all-cause and cause-specific premature mortality. Method(s): This population-based prospective cohort study included 371,558 participants from the UK Biobank recruited between 2006 and 2010. Sepsis was identified from hospital records using ICD-10 codes. Cox proportional-hazards models estimated adjusted hazard ratios (aHRs) and 95% confidence intervals (CIs) for premature mortality. Result(s): Among 371,558 participants, 47,149 (12.7%) were diagnosed with sepsis, including 21,148 with implicit sepsis, 620 with explicit sepsis, and 25,381 with both. Sepsis was associated with a higher risk of all-cause premature mortality (aHR 2.36, 95% CI 2.26-2.46). Cause-specific analyses showed elevated risks for cardiovascular (aHR 2.35, 95% CI 2.18-2.54), respiratory (aHR 7.30, 95% CI 6.23-8.55), cancer-related (aHR 1.76, 95% CI 1.66-1.87), and infection-related premature mortality (aHR 9.75, 95% CI 6.97-13.62). Participants with explicit sepsis alone had elevated risk of all-cause mortality (aHR 1.72, 95% CI 1.21-2.45), which was lower than implicit sepsis alone (aHR 2.05, 95% CI 1.94-2.17) and highest for those with both implicit and explicit sepsis (aHR 2.60, 95% CI 2.48-2.73). Risks were more pronounced in participants with older age, multiple comorbidities, and unhealthy lifestyle (Pinteraction Result(s): Among 371,558 participants, 47,149 (12.7%) were diagnosed with sepsis, including 21,148 with implicit sepsis, 620 with explicit sepsis, and 25,381 with both. Sepsis was associated with a higher risk of all-cause premature mortality (aHR 2.36, 95% CI 2.26-2.46). Cause-specific analyses showed elevated risks for cardiovascular (aHR 2.35, 95% CI 2.18-2.54), respiratory (aHR 7.30, 95% CI 6.23-8.55), cancer-related (aHR 1.76, 95% CI 1.66-1.87), and infection-related premature mortality (aHR 9.75, 95% CI 6.97-13.62). Participants with explicit sepsis alone had elevated risk of all-cause mortality (aHR 1.72, 95% CI 1.21-2.45), which was lower than implicit sepsis alone (aHR 2.05, 95% CI 1.94-2.17) and highest for those with both implicit and explicit sepsis (aHR 2.60, 95% CI 2.48-2.73). Risks were more pronounced in participants with older age, multiple comorbidities, and unhealthy lifestyle (Pinteraction Conclusion(s): Sepsis, especially implicit and combined implicit-explicit sepsis, was associated with increased risks of all-cause and cause-specific premature mortality. These associations were stronger in older participants, those with comorbidities, and unhealthy lifestyles.

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15. **Prognostic value of laboratory markers and clinical scores for mortality in intensive care unit patients with sepsis.**

Authors: Kim S.Y.;Kim D.;Ju H. and Lee, S. I.

Publication Date: 2025

Journal: Plos One 20(12 December) (pagination), pp. Article Number: e0337396. Date of Publication: December 2025

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16. **A systematic review of the cost impact of sepsis care bundles.**

Authors: Ladbrook E.;Bouchoucha S.;McDonall J. and Hutchinson, A. F.

Publication Date: 2025

Journal: Journal of Hospital Infection 166, pp. 170–182

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17. **Update 2025 of the S3 guidelines: "Sepsis-Prevention, diagnosis, treatment and follow-up care": What is new?.**

Authors: Neumann C.;Ebert D.;Bucher M. and Bauer, M.

Publication Date: 2025

Journal: Anaesthesiologie 74(12), pp. 827–838

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18. **Management of Sepsis in Hospitalized Patients**

Authors: Palakshappa, Jessica A. and Taylor, Stephanie P.

Publication Date: Nov ,2025

Journal: Annals of Internal Medicine 178(11), pp. ITC161–ITC176

Abstract: Sepsis is the leading cause of death worldwide. Mortality has improved in the past few decades but remains high, and survivors frequently have long-term complications. Initial diagnostic evaluation focuses on risk stratification and source and pathogen identification. Treatment includes intravenous fluids, vasopressors, steroids if shock is present, antimicrobial therapy targeting the most likely source of infection, and source control. Patients with shock or high-risk organ failure syndromes should be admitted early to an intensive care unit. After initial antimicrobials and resuscitation, care should focus on antimicrobial deescalation, volume management, and high-quality supportive care. Shared decision making about goals of care and transitions is important to support survivors after discharge.

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19. **Diagnostic Utility of Monocyte Distribution Width (MDW) in Early Diagnosis of Sepsis-Beyond SOFA and SIRS.**

Authors: Rekha S.R.;George B.A. and Joseph, E.

Publication Date: 2025

Journal: International Journal of Health Sciences and Research 15(11), pp. 244–254

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20. **Transitional care after hospitalization for sepsis in Germany- results from the population-based AVENIR cohort study.**

Authors: Ruhnke T.;Storch J.;Freytag A.;Rose N.;Kimmig A.;Droge P.;Wedekind L.;Gunster C.;Goldhahn L.;Swart E.;Pletz M.W.;Reinhart K.;Schlattmann P. and FleischmannStruzek, C.

Publication Date: 2025

Journal: Infection 53(6), pp. 2533–2542

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21. **Pancreatic Stone Protein in Co-Evaluation with qSOFA and NEWS2 for Early Sepsis Detection at the Emergency Department.**

Authors: Safarika A.;Damoraki G.;Katsaros K.;Hannane S.;Marki I.;Tanaka H.;Giannikopoulos G. and GiamarellosBourboulis, E. J.

Publication Date: 2025

Journal: Shock (pagination), pp. Date of Publication: 12 Oct 2025

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22. **Think sepsis, write sepsis, code sepsis - patient characteristics associated with sepsis (under-)coding in administrative health data.**

Authors: ThomasRuddel D.;Rose N.;FleischmannStruzek C.;Reinhart K.;Boden B.;Dorow H.;Edel A.;Gonnert F.A.;Gotz J.;Grundling M.;Heim M.;Holbeck K.;Jaschinski U.;Koch C.;Kunzer C.;Le Ngoc K.;Lindau S.;Mehlmann N.B.;Meybohm P.;Neb H., et al

Publication Date: 2025

Journal: Infection (pagination), pp. Date of Publication: 2025

Abstract: Purpose: Sepsis is a leading cause of morbidity and mortality, yet its documentation and coding in administrative health data remain unreliable. Accurate coding is essential for epidemiological surveillance, quality assurance, and reimbursement. This study aims to identify patient characteristics associated with under-diagnosis and under-coding of sepsis in German inpatient administrative health data (IAHD). Method(s): This secondary analysis of the multicenter OPTIMISE study included 10,334 hospital cases from ten German hospitals (2015-2017). Sepsis cases were identified via structured chart review and compared to ICD-coded diagnoses. Logistic regression and classification tree analyses were used to determine predictors of under-diagnosis and under-coding, including ICU admission, organ dysfunction, and infection source. Result(s): Among 1,310 cases fulfilling severe sepsis-1 criteria, only 30.7% were correctly coded. The strongest predictor for coding accuracy was explicit mention of sepsis in the medical chart (OR 19.58). ICU treatment, organ dysfunction severity, and mechanical ventilation were also associated with higher coding rates, while pneumonia as the infection source was linked to a lower probability of sepsis being named and coded. Conclusion(s): Sepsis coding in administrative data is frequently inaccurate. Explicit naming of sepsis and severity markers strongly influence correct coding. As Germany introduces mandatory sepsis quality assurance in 2026, targeted interventions - including enhanced clinician documentation and electronic coding support - are essential to improve coding reliability and patient care.

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23. **Timing of Death in Children Referred for Intensive Care With Sepsis: Comparison of Two Cohorts in the United Kingdom, 2005-2011 vs. 2018-2023.**

Authors: Wedgwood, Maile;Randle, Elise;Honsel, Maik;Ramnarayan, Padmanabhan and Peters, Mark J.

Publication Date: Nov 01 ,2025

Journal: Pediatric Critical Care Medicine 26(11), pp. e1323–e1329

Abstract: OBJECTIVE: To review the timing of death in children with sepsis referred for intensive care, 2018-2023, and compare with our previous 2005-2011 practice. We hypothesized that most deaths occur within 24 hours of referral to the PICU, with many before PICU admission. DESIGN, SETTING, AND PATIENTS: We reviewed referrals to the Children's Acute Transport Service (CATS), North Thames regional pediatric intensive care transport service in the United Kingdom, between January 2018 and March 2023. We included referrals of children (younger than 16 yr) with a working diagnosis of "sepsis," "severe sepsis," "septicemia," or "septic shock." The primary outcome measure was time to death up to a year after referral. MEASUREMENTS AND MAIN RESULTS: Over the 62-month study

period, 11,231 referrals were made to CATS, and 330 (3%) met the study inclusion criteria. Outcome data were available on 272, of whom 29 (11%) died in the first year after referral, which compares favorably with our 2005-2011 cohort from the same service in which the 1-year mortality was 21% (130/627): mean difference 10% (95% CI, 4.8-14.6%), p value equals 0.0003. Eighteen of the 29 deaths occurred in the first 24 hours after referral. Amongst children with comorbidities 12 of 139 (9%) died compared to 6 of 133 (5%) previously healthy children (p = 0.22 Fisher exact test, odds ratio [OR] 2.0 with 95% CI, 0.73-5.5). By 1 year, mortality in children with comorbidities was 19 of 139 (13.9%) vs. mortality in previously healthy children of 10 of 133 (7.5%) (p = 0.12; OR 1.8 [95% CI, 0.82-4.1]). CONCLUSIONS: In 2018-2023, the proportion of referrals for PICU retrieval with a clinical diagnosis of "sepsis" was low at 3%. As with our 2005-2011 cohort, most deaths occurred within 24 hours of first referral. Therefore, early recognition and resuscitation still have the greatest potential for improving sepsis outcomes, which has implications for clinical trials.

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24. **The Effect of Extracorporeal Hemopurification Combined With Conventional Anti-Infection on Clinical Prognosis and Immune Function in Sepsis: A Meta-Analysis.**

Authors: Wu K.;Qin J.;Zheng F. and Lin, J.

Publication Date: 2025

Journal: British Journal of Hospital Medicine (London, England : 2005) 86(11), pp. 1–16

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25. **The significance of joint evaluation of gastrointestinal ultrasound results and renal artery resistance index for assessing intestinal-renal syndrome in sepsis patients: a retrospective study.**

Authors: Zheng, Qingjiang;Kang, De;Chen, Yuanlve;Huang, Bosheng and Lin, Pinglong

Publication Date: Nov 01 ,2025

Journal: Quantitative Imaging in Medicine and Surgery 15(11), pp. 11488–11498

Abstract: Background: Sepsis triggered by intra-abdominal infections (IAI) carries significant morbidity and mortality. The gut and kidneys are critically vulnerable in sepsis, with crosstalk potentially driving "intestinal-renal syndrome"-worsening gut dysfunction leading to acute kidney injury (AKI) and vice versa. Doppler ultrasound offers non-invasive hemodynamic assessment: the superior mesenteric artery resistance index (SMARI) reflects splanchnic perfusion, whereas the renal artery resistance index (RRI) indicates renal vascular resistance. However, the combined role of serial SMARI and RRI measurements in tracking intestinal-renal syndrome progression and predicting outcomes in IAI-induced sepsis remains inadequately explored. This study aimed to visually judge the process of enterorenal syndrome in patients with sepsis caused by abdominal infection, and to provide objective evidence for doctors to make treatment decisions. Methods: This was a retrospective cohort study. A total of 74 patients were included who had been newly admitted into the intensive care unit (ICU) of Zhangzhou Affiliated Hospital of Fujian Medical University. After admission, they were managed with fluid resuscitation in conformity with the early goal-directed therapy (EGDT). Their clinical parameters were collected, including SMARI, RRI, the ultrasonographic transverse area of gastric antrum (CSA, cm2), colonic diameter (Diam, cm), and serum creatinine (SCR, mg/dL). Each patient was measured upon admission into the ICU, and 24 and 72 hours afterwards. The cases were divided into a survival group and a death group according to their status on the 28th day. The above parameters of the two groups were statistically analyzed. Results: (I) The survival group had 51 patients and the death group 23 patients. (II) At 24 hours after hospitalization, the survival group showed significant improvement in RRI (P: (I) The survival group had 51 patients and the death group 23 patients. (II) At 24 hours after hospitalization, the survival group showed significant improvement in RRI (P: (I) The survival group had 51 patients and the death group 23 patients. (II) At 24 hours after hospitalization, the survival group showed significant improvement in RRI (P: (I) The survival group had 51 patients and the death group

23 patients. (II) At 24 hours after hospitalization, the survival group showed significant improvement in RRI (P: (I) The survival group had 51 patients and the death group 23 patients. (II) At 24 hours after hospitalization, the survival group showed significant improvement in RRI (P: (I) The survival group had 51 patients and the death group 23 patients. (II) At 24 hours after hospitalization, the survival group showed significant improvement in RRI (PConclusions: SMARI, Diam, RRI, and SCR can be monitored to reflect the blood perfusion and functional recovery of the gastrointestinal tract and the kidneys, and thus are objective indicators for the progression of the intestinal-renal syndrome.

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26. **Epidemiology and Risk Factors of Sepsis and Sepsis-Induced Myocardial Dysfunction in the Intensive Care Units of Tertiary Hospitals.**

Authors: Zhu G.J.;Huo Y.;Yin Y.C.;Li B. and Hu, Z.

Publication Date: 2025

Journal: Shock (pagination), pp. Date of Publication: 08 Oct 2025

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27. **Early switch from intravenous to oral antibiotic therapy in patients with cancer who have low-risk neutropenic sepsis: the EASI-SWITCH RCT.**

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Abstract: Background: Neutropenic sepsis is a common complication of systemic anticancer treatment. There is variation in practice in timing of switch to oral antibiotics after commencement of empirical intravenous antibiotic therapy. Objectives: To establish the clinical and cost effectiveness of early switch to oral antibiotics in patients with neutropenic sepsis at low risk of infective complications. Design: A randomised, multicentre, open-label, allocation concealed, non-inferiority trial to establish the clinical and cost effectiveness of early oral switch in comparison to standard care. Setting: Nineteen UK oncology centres. Participants: Patients aged 16 years and over receiving systemic anticancer therapy with fever (>= 38degreeC), or symptoms and signs of sepsis, and neutropenia (: Patients aged 16 years and over receiving systemic anticancer therapy with fever (>= 38degreeC), or symptoms and signs of sepsis, and neutropenia (9/l) within 24 hours of randomisation, with a Multinational Association for Supportive Care in Cancer score of >= 21 and receiving intravenous piperacillin/tazobactam or meropenem for /l) within 24 hours of randomisation, with a Multinational Association for Supportive Care in Cancer score of >= 21 and receiving intravenous piperacillin/tazobactam or meropenem for Intervention: Early switch to oral ciprofloxacin (750 mg twice daily) and co-amoxiclav (625 mg three times daily) within 12-24 hours of starting intravenous antibiotics to complete 5 days treatment in total. Control was standard care, that is, continuation of intravenous antibiotics for at least 48 hours with ongoing treatment at physician discretion. Main outcome measures: Treatment failure, a composite measure assessed at day 14 based on the following criteria: fever persistence or recurrence within 72 hours of starting intravenous antibiotics; escalation from protocolised antibiotics; critical care support or death. Results: The study was closed early due to under-recruitment with 129 patients recruited; hence, a definitive conclusion regarding non-inferiority cannot be made. Sixty-five patients were randomised to the early switch arm and 64 to the standard care arm with subsequent intention-to-treat and per-protocol analyses including 125 (intervention n = 61 and control n = 64) and 113 (intervention n = 53 and control n = 60) patients, respectively. In the intention-to-treat population the treatment failure rates were 14.1% in the control group and 24.6% in the intervention group, difference = 10.5% (95% confidence interval 0.11 to 0.22). In the per-protocol population the treatment failure rates were 13.3% and 17.7% in control and intervention groups, respectively; difference = 3.7% (95% confidence interval 0.04 to 0.148). Treatment failure predominantly consisted of persistence or recurrence of fever and/or

physician-directed escalation from protocolised antibiotics with no critical care admissions or deaths. The median length of stay was shorter in the intervention group and adverse events reported were similar in both groups. Patients, particularly those with care-giving responsibilities, expressed a preference for early switch. However, differences in health-related quality of life and health resource use were small and not statistically significant. Conclusions: Non-inferiority for early oral switch could not be proven due to trial under-recruitment. The findings suggest this may be an acceptable treatment strategy for some patients who can adhere to such a treatment regimen and would prefer a potentially reduced duration of hospitalisation while accepting increased risk of treatment failure resulting in re-admission. Further research should explore tools for patient stratification for low-risk de-escalation or ambulatory pathways including use of biomarkers and/or point-of-care rapid microbiological testing as an adjunct to clinical decision-making tools. This could include application to shorter-duration antimicrobial therapy in line with other antimicrobial stewardship studies. Trial registration: This trial is registered as ISRCTN84288963. Funding: This award was funded by the National Institute for Health and Care Research (NIHR) Health Technology Assessment programme (NIHR award ref: 13/140/05) and is published in full in Health Technology Assessment; Vol. 28, No. 14. See the NIHR Funding and Awards website for further award information.; plain-language-summary Neutropenic sepsis, or infection with a low white blood cell count, can occur following cancer treatment. Usually patients receive treatment with intravenous antibiotics (antibiotics delivered into a vein) for two or more days. Patients at low risk of complications from their infection may be able to have a shorter period of intravenous antibiotics benefitting both patients and the NHS. The trial compared whether changing from intravenous to oral antibiotics (antibiotics taken by mouth as tablets or liquid) 12-24 hours after starting antibiotic treatment ('early switch') is as effective as usual care. Patients could take part if they had started intravenous antibiotics for low-risk neutropenic sepsis. Patients were randomly allocated to 'early switch' or to usual care. The main outcome measured was treatment failure. Treatment failure happened if fever persisted or recurred despite antibiotics, if patients needed to change antibiotics, if they needed to be re-admitted to hospital or needed to be admitted to intensive care within 14 days or died. We had originally intended that 628 patients would take part, but after review of the design of the study the number needed to take part was revised to 230. We were not able to complete the trial as planned as unfortunately only 129 patients took part. As the trial was smaller than expected we were not able to draw conclusions as to whether 'early switch' is no less effective than usual care. Our findings suggest that 'early switch' might result in a shorter time in hospital initially; however, treatment failure was more likely to occur, meaning some patients had to return to hospital for further antibiotics. There were no differences in side effects and no serious complications from treatment or treatment failure (such as intensive care admission or death) among the 65 patients in the 'early switch' group. Patients were satisfied with 'early switch'. Early switch may be a treatment option for some patients with low-risk neutropenic sepsis who would prefer a shorter duration of hospital admission but accept a risk of needing hospital re-admission. Language: English

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Sources Used:

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