Journal report – listopad 2025

OBSAH

PREHOSPITAL CARE

– clinical trials & RCT & multicenter study

1: Price J, Lachowycz K, Major R, McLachlan S, Keeliher C, Finbow B, Moncur L, Sagi L, Targett M, Steel A, Sherren PB, Barnard EBG. **Prehospital Postintubation Hypotension and Survival in Severe Traumatic Brain Injury.** JAMA Netw Open. 2025 Nov 3;8(11):e2544057. doi: 10.1001/jamanetworkopen.2025.44057. PMID: 41264271; PMCID: PMC12635874.

2: Alwidyan MT, Al-Nusour EA, Alrawashdeh A, Zabin BS, Bani Omar SM, Alsatari ES. **Readiness for self-directed learning among paramedic students in Jordan: A multi-institutional study.** BMC Med Educ. 2025 Nov 11;25(1):1575. doi: 10.1186/s12909-025-07717-3. PMID: 41219937; PMCID: PMC12607052.

3: Bäckström D, Fagerlund MJ, Larsson S, Alshamari A, Henningsson R, Holst K, Harstad AM, Lubenow N, Folatre JS, Carlbom PR, Wikman A. **How do I implement a whole blood program with low blood wastage?** Transfusion. 2025 Nov;65(11):2014-2020. doi: 10.1111/trf.18402. Epub 2025 Sep 5. PMID: 40910764; PMCID: PMC12618899.

4: Zaboli A, Brigo F, Unterholzer F, Berenzi P, Turcato G. **Discrepancies Between Emergency Transport Modality and Emergency Department Outcomes: An Epidemiological Analysis.** J Public Health Manag Pract. 2025 Nov-Dec 01;31(6):E338-E346. doi: 10.1097/PHH.0000000000002196. Epub 2025 Oct 21. PMID: 40736159.

5: Astasio-Picado Á, Martín-Conty JL, Polonio-López B, Rivera-Picón C, Ballesteros AL, Granados AJA, Buitrago DV, Buitrago PÁ, Diaz-Gonzalez S, Dueñas-Ruiz J, Martín-Rodríguez F, Sanz-García A. **Association between initial patient acuity and the predictive performance of the MREMS: A nationwide retrospective cohort study.** Am J Emerg Med. 2025 Nov;97:84-90. doi: 10.1016/j.ajem.2025.07.022. Epub 2025 Jul 12. PMID: 40694914.

6: Messinger MC, Ashburn NP, Chait JS, Snavely AC, Hapig-Ward S, Stopyra JP, Mahler SA. **Risk of delayed percutaneous coronary intervention for STEMI in the Southeast United States.** Am Heart J. 2025 Nov;289:67-77. doi: 10.1016/j.ahj.2025.05.002. Epub 2025 May 13. PMID: 40373988.

PREHOSPITAL CARE

– systematic review & meta-analysis & scoping review

1: Huang G, Hung WK, Ngolombe R, Maona C, Chiona BC, Banda KJ. **Overview of the prevalence of job satisfaction and turnover intention among emergency medical services**

personnel: a meta-analysis. J Glob Health. 2025 Nov 28;15:04320. doi: 10.7189/jogh.15.04320. PMID: 41313176; PMCID: PMC12662026.

2: Valente M, Del Prete C, Facci G, Musso F, Cenati S, Calligaro S, Ragazzoni L, Barone-Adesi F. **The impacts of extreme weather events on health services and systems: A systematic review of reviews.** Public Health. 2025 Nov 21;250:106049. doi: 10.1016/j.puhe.2025.106049. Epub ahead of print. PMID: 41274098.

3: Bordonaro S, Negro C, Neubecker K, Nemec EC 2nd, Rose SJ. **Efficacy of publicly accessible tourniquets: a systematic review of layperson performance utilizing simulation models.** Adv Simul (Lond). 2025 Nov 18;10(1):57. doi: 10.1186/s41077-025-00390-y. PMID: 41254772; PMCID: PMC12625582.

4: Hansen PM, Nielsen MS, Rehn M, Lassen A, Perner A, Mikkelsen S, Brøchner AC. **Association of ambulance and helicopter response times with patient survival: A systematic literature review and meta-analysis.** PLoS One. 2025 Nov 17;20(11):e0335665. doi: 10.1371/journal.pone.0335665. PMID: 41248153; PMCID: PMC12622838.

5: Fritz CL, Rosen CL, Thomas CE, Kim AJ, Price J, Hibberd O, Galvagno S, Schoenfeld DW, Thomas SH. **Helicopter EMS for scene response to head-injured patients: systematic review & meta-analysis.** BMC Emerg Med. 2025 Nov 14;25(1):233. doi: 10.1186/s12873-025-01392-9. PMID: 41239251; PMCID: PMC12619466.

7: Widiyawati K, Lestari R, Suryanto. **Emergency response in resource-constrained settings: A scoping review of prehospital trauma care in LMICs.** Am J Emerg Med. 2025 Nov;97:220-226. doi: 10.1016/j.ajem.2025.08.005. Epub 2025 Aug 5. PMID: 40782509.

8: Keeves J, Gadowski A, McKimmie A, Bagg MK, Antonic-Baker A, Hicks AJ, Clarke N, Brown A, McNamara R, Reeder S, Roman C, Jeffcote T, Romero L, Hill R, Ponsford JL, Lannin NA, O'Brien TJ, Cameron PA, Rushworth N, Fitzgerald M, Gabbe BJ, Cooper DJ. **The Australian Traumatic Brain Injury Initiative: Systematic Review of the Effect of Acute Interventions on Outcome for People With Moderate- Severe Traumatic Brain Injury.** J Neurotrauma. 2025 Nov;42(21-22):2062-2077. doi: 10.1089/neu.2023.0465. Epub 2024 Apr 8. PMID: 38279797.

Journal report – listopad 2025

PREHOSPITAL CARE

– clinical trials & RCT & multicenter study –

1. JAMA Netw Open. 2025 Nov 3;8(11):e2544057. doi: 10.1001/jamanetworkopen.2025.44057.

Prehospital Postintubation Hypotension and Survival in Severe Traumatic Brain Injury.

Price J(1)(2), Lachowycz K(1), Major R(1), McLachlan S(3), Keeliher C(4), Finbow B(4), Moncur L(5), Sagi L(1), Targett M(6), Steel A(7), Sherren PB(4)(8), Barnard EBG(1)(2)(9).

IMPORTANCE: Preventing systemic disturbances, such as hypotension and hypoxia, is key to reducing the impact of secondary neuronal injury after traumatic brain injury (TBI). Postintubation hypotension is prevalent and may be associated with worse outcomes in patients with trauma undergoing emergency anesthesia.

OBJECTIVE: To investigate the association between postintubation hypotension and 30-day mortality in patients with severe TBI undergoing prehospital rapid sequence induction.

DESIGN, SETTING, AND PARTICIPANTS: This multicenter, retrospective, observational cohort study was performed between January 1, 2015, and December 31, 2022, in the East of England Trauma Network, including 3 helicopter emergency medical services (East Anglian Air Ambulance, Essex & Herts Air Ambulance, and Magpas Air Ambulance). A consecutive sample of patients (aged ≥16 years) with trauma and severe TBI who received prehospital rapid sequence induction by helicopter emergency medical services and were transported to a hospital within the East of England Trauma Network were eligible for inclusion. Severe TBI was defined as a Head Abbreviated Injury Scale score of 3 or higher. Data analysis was performed from March to May 2025.

EXPOSURE: Postintubation hypotension defined as a new systolic blood pressure less than 90 mmHg and induction of anesthesia at 10 minutes or less.

MAIN OUTCOMES AND MEASURES: The primary outcome was 30-day mortality.

RESULTS: A total of 555 patients (median [IQR] age, 48 [29-66] years; 408 [73.5%] male) were included in the final analysis; 548 (98.7%) had a blunt mechanism of injury. Within the first 10 minutes of anesthesia, 106 patients (19.1%) had postintubation hypotension, and 169 (30.5%) died within 30 days of injury (46 of 106 [43.4%] in the hypotension group and 123 of 449 [27.4%] in the nonhypotension group). After adjustment for confounders (eg, age and Glasgow Coma Scale score), postintubation hypotension was associated with increased 30-day mortality for patients with polytrauma and severe TBI (adjusted odds ratio [AOR], 1.70; 95% CI, 1.01-2.86; P = .04). For patients with isolated severe TBI who had postintubation

hypotension, the odds of death adjusted for confounders (eg, age, Glasgow Coma Scale score, and Injury Severity Score) were significantly higher than for patients without (AOR, 13.55; 95% CI, 3.65-61.66; P < .001).

CONCLUSIONS AND RELEVANCE: In this cohort study of patients with severe TBI who received prehospital rapid sequence induction, postintubation hypotension was associated with increased 30-day mortality. This association was strongest for patients with isolated TBI. These findings suggest the need for randomized prehospital interventional studies to reduce the incidence of postintubation hypotension in traumatic brain injury.

DOI: 10.1001/jamanetworkopen.2025.44057

PMCID: PMC12635874

PMID: 41264271 [Indexed for MEDLINE]

2. BMC Med Educ. 2025 Nov 11;25(1):1575. doi: 10.1186/s12909-025-07717-3.

Readiness for self-directed learning among paramedic students in Jordan: A multi-institutional study.

Alwidyan MT(1), Al-Nusour EA(2), Alrawashdeh A(3), Zabin BS(2), Bani Omar SM(4), Alsatari ES(5).

BACKGROUND: Self-directed learning has been considered as an effective training method for students and professionals in the healthcare setting. This study aims to assess the level of self-directed learning readiness among paramedic students in Jordan and identify any associated factors.

METHODS: This cross-sectional descriptive study utilized an online self-administered questionnaire. The study was conducted across three academic institutions in Jordan offering paramedic programs. A sample of paramedic students was assessed using the Self-Directed Learning Readiness Scale. All enrolled paramedic students at the three institutions were included as potential participants. Differences between group means were analyzed using a Student's t-test and one-way analysis of variance, as appropriate.

RESULTS: A total of 529 participants completed the questionnaire. The majority of participants were male (56.1%) with a mean age of 21.2 (SD ± 2.96). The overall mean score of the scale was 141.9 (SD ± 35.5) and a total of 302 (57.1%) participants had a high level of self-directed learning readiness (score > 150). Students with a high level of self-directed learning readiness

were more likely to be male (p = 0.039) and have high academic performance levels (p = 0.006).

CONCLUSIONS: This study found that, although most participants achieved a high level of self-directed learning readiness, the overall mean score was among the lowest in the reported literature. Therefore, it is essential to develop improvement plans to encourage and enhance self-directed learning skills for both students and faculty members.

DOI: 10.1186/s12909-025-07717-3

PMCID: PMC12607052

PMID: 41219937 [Indexed for MEDLINE]

3. Transfusion. 2025 Nov;65(11):2014-2020. doi: 10.1111/trf.18402. Epub 2025 Sep 5.

How do I implement a whole blood program with low blood wastage?

Bäckström D(1)(2), Fagerlund MJ(3)(4), Larsson S(5), Alshamari A(6), Henningsson R(7), Holst K(8), Harstad AM(7), Lubenow N(9)(10), Folatre JS(11)(12), Carlbom PR(13), Wikman A(5)(14).

BACKGROUND: The use of low-titer O whole blood (LTOWB) is requested in the treatment of major bleeding, initially used in military medicine but now increasingly utilized in civilian prehospital care. The advantage is the administration of a balanced transfusion, red blood cells, coagulation factors, and platelets, in one bag. The challenges are the availability of LTOWB and difficulties in predicting the need in major bleeding, leading to the risk of wastage.

METHODS: This study describes different logistical strategies when implementing whole blood in the Swedish civilian healthcare. The five transfusion centers producing whole blood in Sweden participated, providing experience of the production line, usage, and wastage.

RESULTS: In Sweden, LTOWB is used prehospital in helicopter emergency medical service (HEMS), in one physician-manned rapid response vehicle, and inhospital in three University Hospitals. The logistical strategies to reduce wastage vary but involve the rotation of LTOWB not used prehospital to inhospital use in two centers and the preparation of red blood cell (RBC) units from 1 to 2 weeks old LTOWB in three centers. The number of transfused LTOWB units varies between the centers, and wastage was 0%-13% in 4/5 centers and higher in one center, 34%.

CONCLUSION: It is difficult to predict the need of LTOWB, requested in prehospital emergencies. Aiming for low wastage requires different logistical chains, depending on the

local prerequisites. In Sweden, LTOWB is either rotated for use in major bleeding in hospital or prepared to RBC units after 1 week prehospital.

DOI: 10.1111/trf.18402

PMCID: PMC12618899

PMID: 40910764 [Indexed for MEDLINE]

4. J Public Health Manag Pract. 2025 Nov-Dec 01;31(6):E338-E346. doi: 10.1097/PHH.0000000000002196. Epub 2025 Oct 21.

Discrepancies Between Emergency Transport Modality and Emergency Department Outcomes: An Epidemiological Analysis.

Zaboli A(1), Brigo F, Unterholzer F, Berenzi P, Turcato G.

BACKGROUND: Prehospital emergency services have evolved significantly, with increased specialization and deployment of advanced transport systems. However, concerns have been raised regarding the potential overutilization of these resources by patients who may not present with clinically urgent conditions. This study aims to investigate the relationship between the mode of arrival to the Emergency Department (ED) and the clinical severity upon evaluation, emphasizing the appropriateness of advanced emergency transport use.

METHODS: We conducted a multicenter retrospective observational study analyzing all ED visits (n = 1 282 976) from January 1, 2019, to December 31, 2023, across seven hospitals in the Province of Bolzano, Italy. Data were extracted from electronic health records. Variables included patient demographics, mode of arrival, triage priority and hospital admission. Logistic regression models adjusted for hospital-level clustering were used to assess associations between transport modality and outcomes.

RESULTS: Most patients (77.4%) arrived by self-transport, while 0.8% arrived by helicopter. Although advanced transport was associated with higher odds of urgent triage and hospital admission, a substantial proportion of patients transported by helicopter (approximately 50%) or physician-staffed ambulance (approximately 30%) were discharged or assigned non-urgent triage codes. Logistic regression confirmed that advanced transport significantly decreased the odds of receiving a non-urgent code and increased the likelihood of admission; however, notable overtriage persisted.

CONCLUSIONS: The findings highlight a mismatch between transport modality and clinical urgency in a significant number of cases. Enhancing emergency dispatch protocols and refining

prehospital triage systems are critical to ensuring resource sustainability and optimizing care delivery within public healthcare systems.

DOI: 10.1097/PHH.0000000000002196

PMID: 40736159 [Indexed for MEDLINE]

5. Am J Emerg Med. 2025 Nov;97:84-90. doi: 10.1016/j.ajem.2025.07.022. Epub 2025 Jul 12.

Association between initial patient acuity and the predictive performance of the MREMS: A nationwide retrospective cohort study.

Astasio-Picado Á(1), Martín-Conty JL(2), Polonio-López B(2), Rivera-Picón C(3), Ballesteros AL(4), Granados AJA(4), Buitrago DV(4), Buitrago PÁ(5), Diaz-Gonzalez S(6), Dueñas-Ruiz J(7), Martín-Rodríguez F(8), Sanz-García A(2).

INTRODUCTION: The ability to accurately predict short-term mortality in the prehospital setting is critical for optimizing emergency medical service (EMS) care. This study aimed to evaluate the predictive capability of the modified Rapid Emergency Medical Score (mREMS) across varying initial patient acuity levels and its implications for clinical decision-making.

METHODS: This multicenter observational study analyzed data from the National Emergency Medical Services Information System (NEMSIS) in the United States. All consecutive EMS activations of adult patients (>18 years) classified into three levels of initial patient acuity (Red, Yellow, Green) were included. The collected variables included epidemiological data, vital signs, and outcomes. The primary outcome assessed was short-term mortality.

RESULTS: A total of 2,419,687 EMS activations were analyzed, with 1,590,578 patients (65.7 %) with lower acuity (green), 608,117 (25.2 %) with emergent (yellow), and 220,983 (9.1 %) with critical (red) acuity level. The mortality rate was significantly greater in Red patients (4.17 %) than in Yellow (0.49 %) and Green (0.21 %) patients ($p < 0.001$). The predictive capability for short-term mortality presented an AUC of 0.855 (95 %CI: 0.838-0.872), 0.762 (95 %CI: 0.740-0.784), and 0.720 (95 %CI: 0.700-0.740), for Red, Yellow, and green, respectively.

CONCLUSIONS: This study demonstrated that mREMS is an effective tool for predicting short-term mortality in the prehospital setting, particularly for patients with high initial patient acuity. Its application can facilitate the prioritization of interventions and enhance clinical decision-making, ultimately contributing to improved patient outcomes across all levels of initial patient acuity.

DOI: 10.1016/j.ajem.2025.07.022

6. Am Heart J. 2025 Nov;289:67-77. doi: 10.1016/j.ahj.2025.05.002. Epub 2025 May 13.

Risk of delayed percutaneous coronary intervention for STEMI in the Southeast United States.

Messinger MC(1), Ashburn NP(2), Chait JS(2), Snavely AC(3), Hapig-Ward S(2), Stopyra JP(2), Mahler SA(4).

BACKGROUND: While percutaneous coronary intervention (PCI) reperfusion within 90 minutes of first medical contact (FMC) is indicated for ST-segment elevation myocardial infarction (STEMI), long transport times in rural areas can make this unlikely. We sought to quantify Southeast US residents at risk of treatment delay due to transport.

METHODS: A cross-sectional study of Southeast US residents was conducted using American Community Survey data and geographic information systems (GIS) to estimate emergency medical services (EMS) transport times to primary PCI (PPCI) centers. All PPCI centers in the study area were included, as well as centers in surrounding states. The main outcomes were the number of residents residing more than 30 and 60 minutes from PPCI. These cutoffs are based on national median EMS scene times and door-to-device times and correspond to estimated FMC-to-device times of 90 and 120 minutes, respectively. A secondary outcome was identification of counties with greater than 50% and 90% of their population at risk of treatment delay.

RESULTS: Of 62,880,528 residents in the study area, we identified nearly 11 million at risk of delayed PCI (17.3%, 10,866,710 ± 58,143). Of those, 1,271,522 (± 51,858) live greater than 60 minutes from PPCI. We found that 8.4% (52/616) of counties have more than 50% of their population at risk of treatment delay. 42.3% (22/52) of those have more than 90% of at risk.

CONCLUSIONS: Nearly 11 million people in the Southeast US do not have timely access to PCI. This disparity may contribute to increased morbidity and mortality.

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PMID: 40373988 [Indexed for MEDLINE]

Journal report – listopad 2025

PREHOSPITAL CARE

– systematic review & meta-analysis & scoping review –

1. J Glob Health. 2025 Nov 28;15:04320. doi: 10.7189/jogh.15.04320.

Overview of the prevalence of job satisfaction and turnover intention among emergency medical services personnel: a meta-analysis.

Huang G(1)(2), Hung WK(3), Ngolombe R(4)(5), Maona C(6), Chiona BC(7)(8), Banda KJ(9)(10).

BACKGROUND: Emergency medical services (EMS) personnel, including paramedics, emergency medical technicians (EMTs), and firefighters are subjected to substantial occupational stressors that diminish job satisfaction and increase turnover rate, ultimately affecting efficient delivery of pre-hospital emergency care. Therefore, we performed the first meta-analysis to determine the prevalence of job satisfaction and turnover intention among EMS personnel, including paramedics, emergency medical technicians (EMTs), and firefighters.

METHODS: We comprehensively searched Web of Science, PubMed, Cochrane Library, Embase, and EBSCOhost until March 2025. The pooled prevalence of job satisfaction and turnover intention was analysed using the Freeman-Tukey double-arcsine transformation model in R software. Cochran's Q and statistics assessed heterogeneity and subgroup analysis explored moderator variables.

RESULTS: A total of 25 studies with 59 562 EMS personnel were included. The pooled prevalence of job satisfaction was 63% (95% confidence interval (CI) = 53%, 72%), with estimates of 71% for EMTs, 62% for firefighters, and 54% for paramedics. Job satisfaction was 56% during the COVID-19 pandemic and 65% in the pre-pandemic period. The pooled prevalence of turnover intention was 29% (95% CI = 24%, 36%), with estimates of 28% for paramedics, 22% for EMTs, and 17% for firefighters. Turnover intention was 34% during COVID-19 pandemic and 27% in the pre-pandemic period.

CONCLUSIONS: Approximately, 63% of EMS personnel report job satisfaction, while 29% express intent to leave the profession. Mental health support, workload management, and professional development opportunities should be promoted among EMS personnel to further enhance job satisfaction and mitigate turnover intention.

REGISTRATION: PROSPERO: CRD420251027283.

DOI: 10.7189/jogh.15.04320

PMCID: PMC12662026

PMID: 41313176 [Indexed for MEDLINE]

Journal report – listopad 2025

2. Public Health. 2025 Nov 21;250:106049. doi: 10.1016/j.puhe.2025.106049.

The impacts of extreme weather events on health services and systems: A systematic review of reviews.

Valente M(1), Del Prete C(2), Facci G(3), Musso F(4), Cenati S(5), Calligaro S(6), Ragazzoni L(2), Barone-Adesi F(3).

OBJECTIVES: Beyond health impacts, Extreme Weather Events (EWEs) disrupt health services and systems, an aspect often overlooked in favour of individual health outcomes. This systematic review of reviews aimed to systematically map the diverse impacts of EWEs on health services and systems, offering essential information to enhance disaster preparedness across different healthcare delivery settings.

STUDY DESIGN: A systematic review of reviews was chosen as the best method to achieve the study objective, following PRISMA guidelines for conduct and reporting.

METHODS: PubMed, Scopus, and Web of Science were searched for narrative or systematic reviews, with or without a meta-analysis, published in the past 10 years. We evaluated the impact of floods, storms, heatwaves, cold spells, and wildfires on different components, from pre-hospital care to primary care and pharmacies. Results were thematically analysed to categorise impacts by hazard type, affected component, and impact type.

RESULTS: A total of 114 reviews were included, detailing EWEs' consequences on health services and systems, and showcasing the heterogeneity of impacts across different healthcare delivery settings and hazard types. Floods and storms disrupt hospital and pre-hospital services through infrastructure damage and road closures. Heatwaves increase ambulance dispatches, emergency department visits, hospitalisations, and primary care use, due to heat exposure and chronic disease exacerbation. Increased particulate matter levels during wildfires was also associated with increased healthcare use.

CONCLUSIONS: These findings highlight the significant impact of EWEs on health services and systems, and underscore the need for appropriate adaptation measures. They offer practical evidence to enhance health system preparedness and reduce the impact of EWEs.

DOI: 10.1016/j.puhe.2025.106049

PMID: 41274098

3. Adv Simul (Lond). 2025 Nov 18;10(1):57. doi: 10.1186/s41077-025-00390-y.

Efficacy of publicly accessible tourniquets: a systematic review of layperson performance utilizing simulation models.

Bordonaro S(1), Negro C(1), Neubecker K(2), Nemec EC 2nd(1), Rose SJ(3)(4).

BACKGROUND: A large portion of preventable deaths is a result of uncontrolled bleeding due to a delay in medical intervention. While publicly accessible tourniquets raise the concern of incorrect application by laypeople, tourniquets have proven efficacy and can be effectively applied by bystanders. This systematic review aims to identify if tourniquets applied by laypeople using a basic manikin or tourniquet trainer extremity with little to no training can effectively control bleeding.

METHODS: The authors used EBSCOHost to simultaneously search the following databases: Cumulated Index in Nursing and Allied Health Literature (CINAHL) Ultimate, Academic Search Premier, Cochrane Central Register of Controlled Trials, Cochrane Database of Systematic Reviews, and Medical Literature Analysis and Retrieval System Online (MEDLINE) with Full Text. Boolean search strategy included tourniquet AND (layperson OR laypeople) AND ((bleeding AND control) OR (hemorrhage AND control) OR "stop the bleed") NOT surgery. The search was limited to January 1, 2013, to August 31, 2023. Inclusion criteria were layperson participants in peer-reviewed randomized controlled or clinical trials, available in English, that assessed at least one outcome measure related to the efficacy of tourniquet application in a simulated context. Articles including duplicate data and those regarding tourniquet use/efficacy in settings other than prehospital care or bleeding control were excluded. Two independent reviewers selected studies according to prespecified inclusion and exclusion criteria. Risk of bias was assessed using the Cochrane RoB 2 tool.

RESULTS: The initial search identified 83 studies, with 10 retained for inclusion in this review. Two different windlass rod tourniquets and one ratcheting strap tourniquet performed the best in terms of successful application by laypeople. Completing formal bleeding control training increased the average application success rate compared to no prior training. The Layperson Audiovisual Assist Tourniquet was the only audiovisual point-of-care aid that significantly increased the rate of successful applications. Just-in-Time visual cards also increased success rates significantly, showing comparable benefits to manufacturer instructions.

CONCLUSION: Although some laypeople can successfully place tourniquets without prior training, successful placement rates can be improved with point-of-care aids and formal bleeding control training using a basic manikin or tourniquet trainer extremity.

Journal report – listopad 2025

DOI: 10.1186/s41077-025-00390-y

PMCID: PMC12625582

PMID: 41254772

4. PLoS One. 2025 Nov 17;20(11):e0335665. doi: 10.1371/journal.pone.0335665. eCollection 2025.

Association of ambulance and helicopter response times with patient survival: A systematic literature review and meta-analysis.

Hansen PM(1)(2)(3), Nielsen MS(3)(4), Rehn M(1)(3)(5)(6)(7), Lassen A(8)(9), Perner A(10), Mikkelsen S(1)(11), Brøchner AC(1)(3)(4).

BACKGROUND: Only sparse scientific evidence supports the notion that the shortest possible response time relates to improved patient outcomes in acute conditions, other than out-of-hospital cardiac arrest and trauma. Confounders such as bidirectional causality and confounding by indication may influence patient-centered outcomes, which may prevent actionable conclusions from literature reviews. The purpose of the systematic literature review was to assess current evidence on association, if any, between ambulance and helicopter response times and survival in all patient categories treated by ambulance or helicopter services.

METHODS: The systematic search was conducted in MEDLINE, Cochrane Library, EMBASE, CINAHL, Scopus, and Clinical Trial Registries. All study designs and settings identified as relevant to the topic were eligible. The investigators retrieved data from a predefined template and extracted data from a predefined template. Two reviewers worked independently, and conflicts were resolved by a third reviewer. The researchers used PRISMA guidelines for abstracting data and GRADE methodology for assessing data quality and validity. As per study protocol, the primary study outcome was patient survival, and the main measurement was response time for emergency medical services vehicles.

RESULTS: The investigators included 115 studies that in total included 691,056 patients, comprising patients with out-of-hospital cardiac arrest, trauma, drownings, and including both adults and children in various settings. The overall median survival rate was 11.5% (IQR 5.2; 25.8). Response time varied between 1.10 and 48.62 minutes. The predefined domains and items of interest were accounted for in 46.7% of the included literature. In a meta-analysis of sub-groups, there was a positive correlation in selected populations. Certainty of evidence was very low as per GRADE methodology.

CONCLUSIONS: This systematic review and meta-analysis found lack of evidence to infer an association between the EMS response time and patient survival, with very low certainty of evidence. The investigators found substantive research and knowledge gaps. Therefore, no actionable conclusions can be made from this systematic review.

DOI: 10.1371/journal.pone.0335665

PMCID: PMC12622838

PMID: 41248153 [Indexed for MEDLINE]

5. BMC Emerg Med. 2025 Nov 14;25(1):233. doi: 10.1186/s12873-025-01392-9.

Helicopter EMS for scene response to head-injured patients: systematic review & meta-analysis.

Fritz CL(#)(1), Rosen CL(#)(2), Thomas CE(3), Kim AJ(2), Price J(4)(5), Hibberd O(4), Galvagno S(6), Schoenfeld DW(2), Thomas SH(2)(7).

BACKGROUND: Helicopter EMS (HEMS) is an important component of prehospital trauma scene response care worldwide, including for traumatic brain injury (TBI), a major cause of mortality in injured patients. Our objective was to perform a meta-analysis (MA) of trauma HEMS scene responses to patients with severe head injury to determine whether air medical response is associated with improved survival.

METHODS: A broad and systematic search of the literature was conducted from the years 1970–2024. We included studies with the outcome of mortality in HEMS vs. the control of ground EMS (GEMS) in trauma scene transports (adult or pediatric) with severe TBI as defined by Glasgow Coma Score (GCS) < 9 or Head Abbreviated Injury Score (AISHead) ≥ 3. A random effects restricted maximum likelihood MA was conducted, with post-analysis evaluation for bias.

RESULTS: Of 21 HEMS outcomes studies evaluating TBI, 15 were eligible for MA, and effect estimates were HEMS-favorable in 13 and statistically significant in 9. The null hypothesis of no HEMS association with TBI survival was rejected ($p < .01$) for both the GCS < 9 and the AISHead3+ groups. Heterogeneity measures supported generation of a pooled effect estimate for the GCS < 9 group: HEMS survival OR 1.37 (95% CI 1.23–1.53, I2 0%) but not for the AISHead3+ group (for which HEMS had statistically significant association with improved survival in six of eight studies, but to different degrees with resulting I2 of 93%). There were no signs of small-study (publication) or other substantial bias, with overall evaluation of moderate to low risk of bias.

CONCLUSIONS: The available evidence suggests a survival benefit associated with HEMS scene response for patients with severe head injuries as defined by GCS < 9. For this group, at the median mortality from all studies (24%), HEMS scene response to TBI saves one life for every 19 transports (95% CI for number needed to treat, 15–28).

SUPPLEMENTARY INFORMATION: The online version contains supplementary material available at 10.1186/s12873-025-01392-9.

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PMCID: PMC12619466

PMID: 41239251

6. Am J Emerg Med. 2025 Nov;97:220-226. doi: 10.1016/j.ajem.2025.08.005. Epub 2025 Aug.

Emergency response in resource-constrained settings: A scoping review of prehospital trauma care in LMICs.

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Trauma is a leading cause of mortality in low- and middle-income countries (LMICs), where effective prehospital care can significantly improve survival. However, the development of robust prehospital systems is hindered by systemic barriers, including fragmented services, inadequate resources, and undertrained personnel. This study aimed to systematically map the evidence on these challenges and the solutions being implemented to overcome them. We conducted a scoping review following the PRISMA-ScR guidelines. A scoping search was conducted in PubMed, ScienceDirect, and EBSCO databases was performed to identify primary research studies focused on prehospital trauma care in LMICs. After screening, a total of 23 articles met the inclusion criteria. Data related to barriers and facilitators were extracted, charted, and synthesized using a thematic analysis approach. Four key themes of barriers were consistently identified across the 23 studies: deficits in provider training and continuous education; inadequate infrastructure, physical resources, and communication systems; fragmented governance and a lack of standardized clinical protocols; and significant sociocultural obstacles, including a lack of public awareness and fear of legal repercussions for providing aid. Conversely, effective facilitators centered on context-specific training for both lay and professional responders; community-based initiatives that empower local volunteers as first responders; the application of low-cost, appropriate technology for communication and dispatch; and the establishment of supportive policy and legal frameworks. Strengthening prehospital trauma care in LMICs requires a paradigm shift away from simply attempting to

replicate resource-intensive models from high-income countries. The evidence synthesized in this review strongly suggests that the most effective and sustainable pathway lies in fostering context-specific, community-driven solutions. Investing in lay responder training and low-cost technological innovations, all supported by clear national governance, represents a powerful strategy to reduce the burden of preventable death and disability in these settings.

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The Australian Traumatic Brain Injury Initiative: Systematic Review of the Effect of Acute Interventions on Outcome for People With Moderate-Severe Traumatic Brain Injury.

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The Australian Traumatic Brain Injury Initiative (AUS-TBI) is developing a data resource to enable improved outcome prediction for people with moderate-severe TBI (msTBI) across Australia. Fundamental to this resource is the collaboratively designed data dictionary. This systematic review and consultation aimed to identify acute interventions with potential to modify clinical outcomes for people after msTBI, for inclusion in a data dictionary. Standardized searches were implemented across bibliographic databases from inception through April 2022. English-language reports of randomized controlled trials (RCTs) evaluating any association between any acute intervention and clinical outcome in at least 100 patients with msTBI, were included. A predefined algorithm was used to assign a value to each observed association. Consultation with AUS-TBI clinicians and researchers formed the consensus process for interventions to be included in a single data dictionary. Searches retrieved 14,455 records, of which 124 full-length RCTs were screened, with 35 studies included. These studies evaluated 26 unique acute interventions across 21 unique clinical outcomes. Only 4 interventions were considered to have medium modifying value for any outcome from the review, with an additional 8 interventions agreed upon through the consensus process. The interventions with medium value were tranexamic acid and phenytoin, which had a positive effect on an outcome; and decompressive craniectomy surgery and hypothermia, which negatively

affected outcomes. From the systematic review and consensus process, 12 interventions were identified as potential modifiers to be included in the AUS-TBI national data resource.

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