Journal report – únor 2025

OBSAH

HOSPITAL CARE

– clinical trials & RCT & multicenter study

1: Newton AS, Thull-Freedman J, Xie J, Lightbody T, Woods J, Stang A, Winston K, Larson J, Wright B, Stubbs M, Morrissette M, Freedman SB; Pediatric Emergency Research Canada (PERC). **Outcomes Following a Mental Health Care Intervention for Children in the Emergency Department: A Nonrandomized Clinical Trial.** JAMA Netw Open. 2025 Feb 3;8(2):e2461972. doi: 10.1001/jamanetworkopen.2024.61972. PMID: 40009377; PMCID: PMC11866027.

2: Kim HS, Schauer JM, Kan AK, Alinger JB, Strickland KJ, Garreau A, McCarthy DM, Taylor ZB, Fishman IL, Muschong KM, Roth HR. **Emergency Department Vestibular Rehabilitation Therapy for Dizziness and Vertigo: A Nonrandomized Clinical Trial.** JAMA Netw Open. 2025 Feb 3;8(2):e2459567. doi: 10.1001/jamanetworkopen.2024.59567. PMID: 39951266; PMCID: PMC11829232.

3: Tupetz A, Frazier M, O'Regan A, Knisely M, TumSuden O, Walker E, Sununu C, Glass O, Miller-Maxwell A, Staton CA, Eucker SA. **Participant experiences receiving acupuncture for acute musculoskeletal pain in an emergency department: A qualitative evaluation.** PLoS One. 2025 Feb 12;20(2):e0318345. doi: 10.1371/journal.pone.0318345. PMID: 39937807; PMCID: PMC11819596.

4: Kalmovich B, Rahamim-Cohen D, Yehoshua I, Kivity S, Orvieto N, Shapiro Ben David S. **Implementation of a rapid host-protein diagnostic test for distinguishing bacterial and viral infections in adults presenting to urgent care centers: a pragmatic cohort study.** BMC Med. 2025 Feb 4;23(1):63. doi: 10.1186/s12916-025-03903-8. PMID: 39901146; PMCID: PMC11792296.

5: Hautz WE, Marcin T, Hautz SC, Schauber SK, Krummrey G, Müller M, Sauter TC, Lambrigger C, Schwappach D, Nendaz M, Lindner G, Bosbach S, Griesshammer I, Schönberg P, Plüss E, Romann V, Ravioli S, Werthmüller N, Kölbener F, Exadaktylos AK, Singh H, Zwaan L. **Diagnoses supported by a computerized diagnostic decision support system versus conventional diagnoses in emergency patients (DDX-BRO): a multicentre, multiple-period, double-blind, cluster-randomised, crossover superiority trial.** Lancet Digit Health. 2025 Feb;7(2):e136-e144. doi: 10.1016/S2589-7500(24)00250-4. PMID: 39890244.

6: Grudzen CR, Siman N, Cuthel AM, Adeyemi O, Yamarik RL, Goldfeld KS; PRIM-ER Investigators; Abella BS, Bellolio F, Bourenane S, Brody AA, Cameron-Comasco L, Chodosh J,

Journal report – únor 2025

Cooper JJ, Deutsch AL, Elie MC, Elsayem A, Fernandez R, Fleischer-Black J, Gang M, Genes N, Goett R, Heaton H, Hill J, Horwitz L, Isaacs E, Jubanyik K, Lamba S, Lawrence K, Lin M, Loprinzi-Brauer C, Madsen T, Miller J, Modrek A, Otero R, Ouchi K, Richardson C, Richardson LD, Ryan M, Schoenfeld E, Shaw M, Shreves A, Southerland LT, Tan A, Uspal J, Venkat A, Walker L, Wittman I, Zimny E. **Palliative Care Initiated in the Emergency Department: A Cluster Randomized Clinical Trial.** JAMA. 2025 Feb 18;333(7):599-608. doi: 10.1001/jama.2024.23696. PMID: 39813042; PMCID: PMC11836764.

7: Kurt A, Dinç F, Güneş Şan E. **Video and booklet discharge instructions for mothers for childhood fever in pediatric emergency department: A randomized controlled trial.** Int Emerg Nurs. 2025 Feb;78:101546. doi: 10.1016/j.ienj.2024.101546. Epub 2024 Dec 4. PMID: 39637747.

8: Verma A, Jaiswal S, Mahawar A, Lal M, Gupta S, Mittal N. **Comparing first pass success of Channeled versus Non-channeled KingVision video laryngoscopes in patients presenting to the emergency department - A randomized control study.** Am J Emerg Med. 2025 Feb;88:79-83. doi: 10.1016/j.ajem.2024.11.034. Epub 2024 Nov 23. PMID: 39608311.

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15: Baumberger J, Dinges S, Lupi E, Wolters T, Stüssi-Helbling M, Cippà PE, Bellasi A, Huber LC, Arrigo M. **Prevalence and characteristics of upfront diuretic resistance in acute heart failure: The P-Value-AHF study.** ESC Heart Fail. 2025 Feb;12(1):688-694. doi: 10.1002/ehf2.15069. Epub 2024 Sep 6. PMID: 39239801; PMCID: PMC11769653.

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PREHOSPITAL CARE

– systematic review & meta-analysis

1: Tong Q, Zhou M, Liu X, Long J, Li L, Pan X, Gao H, Hu R. **Mobile applications enhance out-of-hospital cardiac arrest outcomes: a systematic review and meta-analysis.** BMC Health Serv Res. 2025 Feb 15;25(1):256. doi: 10.1186/s12913-025-12416-2. PMID: 39955524; PMCID: PMC11830178.

2: Khanizade A, Moslehi S, Dowlati M, Moradimajd P, Moradian MJ. **Preparedness dimensions and components of emergency medical services in chemical hazards: a systematic review.** BMC Emerg Med. 2025 Feb 14;25(1):24. doi: 10.1186/s12873-025-01180-5. PMID: 39948462; PMCID: PMC11827237.

3: Saldanha IJ, Zhang A, Everly GS Jr, Roemer EC, Hsu EB, Han G, Sharma R, Asenso E Jr, Bidmead D, Bass EB, Jenkins JL. **Interventions Targeting Resistance and Resilience Among Emergency Medical Service Clinicians: A Systematic Review.** Prehosp Emerg Care. 2025 Feb 21:1-9. doi: 10.1080/10903127.2025.2465712. Epub ahead of print. PMID: 39937104.

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5: Leech C, Nutbeam T, Chu J, Knight M, Hinshaw K, Appleyard TL, Cowan S, Couper K, Yeung J. **Maternal and neonatal outcomes following resuscitative hysterotomy for out of hospital cardiac arrest: A systematic review.** Resuscitation. 2025 Feb;207:110479. doi: 10.1016/j.resuscitation.2024.110479. Epub 2024 Dec 29. PMID: 39736393.

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Journal report – únor 2025

HOSPITAL CARE

– clinical trials & RCT & multicenter study –

1. JAMA Netw Open. 2025 Feb 3;8(2):e2461972. doi: 10.1001/jamanetworkopen.2024.61972.

Outcomes Following a Mental Health Care Intervention for Children in the Emergency Department: A Nonrandomized Clinical Trial.

Newton AS(1), Thull-Freedman J(2), Xie J(3), Lightbody T(4), Woods J(5), Stang A(2), Winston K(3), Larson J(6), Wright B(1), Stubbs M(7), Morrissette M(8), Freedman SB(2)(9); Pediatric Emergency Research Canada (PERC). Collaborators: Ali S, Alquarashi W, Burstein B, Crawford T, Eaton A, Freire G, Fric M, Poonai N, Wright B, Zemek R.

IMPORTANCE: The emergency department (ED) is an important safety net for children experiencing mental and behavioral health crises and can serve as a navigational hub for families seeking support for these concerns.OBJECTIVES: To evaluate the outcomes of a novel mental health care bundle on child well-being, satisfaction with care, and health system metrics.

DESIGN, SETTING, AND PARTICIPANTS: Nonrandomized trial of 2 pediatric EDs in Alberta, Canada. Children younger than 18 years with mental and behavioral health presentations were enrolled before implementation (preimplementation: January 2020 to January 2021), at implementation onset (run-in: February 2021 to June 2021), and during bundle delivery (implementation: July 2021 to June 2022).

INTERVENTION: The bundle involved risk stratification, standardized mental health assessments, and provision of an urgent follow-up appointment after the visit, if required.

MAIN OUTCOMES AND MEASURES: The primary outcome, child well-being 30 days after the ED visit, was assessed using the Stirling Children's Wellbeing Scale (children aged <14 years) or Warwick-Edinburgh Mental Wellbeing Scale (children aged 14-17 years). Change in well-being between the preimplementation and implementation periods was examined using interrupted time-series analysis and multivariable modeling. Changes in health system metrics (hospitalization, ED length of stay [LOS], and revisits) and care satisfaction were also examined.

RESULTS: A total of 1412 patients (median [IQR] age, 13 [11-15] years), with 715 enrolled preimplementation (390 [54.5%] female; 55 [7.7%] First Nations, Inuit, or Métis; 46 [6.4%] South, Southcentral, or Southeast Asian; and 501 [70.1%] White) and 697 enrolled at implementation (357 [51.2%] female; 51 [7.3%] First Nations, Inuit, or Métis; 39 [5.6%] South, Southcentral, or Southeast Asian; and 511 [73.3%] White) were included in the analysis. There

were no differences between study periods in well-being. Reduced well-being z scores were associated with mood disorder diagnosis (standardized mean difference, -0.14; 95% CI, -0.26 to -0.02) and nonbinary gender identity (standardized mean difference, -0.41; 95% CI, -0.62 to -0.19). The implementation period involved fewer hospitalizations (difference in hospitalizations, -6.9; 95% CI, -10.4 to -3.4) and longer ED LOS (1.1 hours; 95% CI, 0.7 to 1.4 hours). There were no differences between study periods in ED revisits or care satisfaction.

CONCLUSIONS AND RELEVANCE: In this study, the delivery of a care bundle was not associated with higher child well-being 30 days after an ED visit. Hospitalizations did decrease during bundle delivery, but ED LOS did not. These health system findings may have been affected by broader changes in patient volumes and flow processes that occurred during the COVID-19 pandemic, which took place as the study was conducted.TRIAL REGISTRATION: ClinicalTrials.gov Identifier: NCT04292379.

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PMCID: PMC11866027
PMID: 40009377 [Indexed for MEDLINE]

2. JAMA Netw Open. 2025 Feb 3;8(2):e2459567. doi: 10.1001/jamanetworkopen.2024.59567.

Emergency Department Vestibular Rehabilitation Therapy for Dizziness and Vertigo: A Nonrandomized Clinical Trial.

Kim HS(1)(2), Schauer JM(3), Kan AK(3), Alinger JB(1), Strickland KJ(4), Garreau A(4), McCarthy DM(1), Taylor ZB(1), Fishman IL(1), Muschong KM(1), Roth HR(5).

IMPORTANCE: Dizziness symptoms account for nearly 2 million annual emergency department (ED) visits and present a diagnostic challenge for clinicians. Most dizziness research has focused on improving guideline-concordant care among clinicians, with little focus on developing patient-centered interventions to improve dizziness-related disability.

OBJECTIVE: To examine the feasibility of ED vestibular rehabilitation therapy (ED-VeRT) using a protocolized diagnostic classification algorithm and collection of longitudinal patient-reported outcomes.

DESIGN, SETTING, AND PARTICIPANTS: A pilot nonrandomized clinical trial of ED-VeRT vs usual care for patients presenting to the ED with dizziness at a single urban US ED was conducted from November 16, 2021, to February 6, 2023, with collection of 3-month outcomes through May 1, 2023. Patients were allocated to ED-VeRT or usual care at the discretion of the treating physician.

INTERVENTIONS: Use of ED-VeRT was delivered by an ED physical therapist via a protocolized diagnostic classification and treatment algorithm based on a diagnosis of benign paroxysmal positional vertigo, triggered undifferentiated dizziness, spontaneous undifferentiated dizziness, or unilateral peripheral hypofunction.

MAIN OUTCOMES AND MEASURES: Feasibility outcomes included participant screening, enrollment, and retention rates to inform the design of a future randomized clinical trial; retention was defined as completing any of 4 follow-up surveys over 3 months. The primary efficacy outcome was change in the Dizziness Handicap Inventory score; the secondary efficacy outcome was change in the Vestibular Activities Avoidance Inventory-9 score.

RESULTS: Of 366 patients screened, 125 participants were enrolled (median age, 52 [IQR, 40-66] years, 73 [58%] female, 61 [49%] White), and 105 retained (84.0%) in longitudinal data collection. Sixty-three participants (50.4%) received ED vestibular therapy and were assigned to primary diagnostic classifications of benign paroxysmal positional vertigo (23 [37.1%]), triggered undifferentiated dizziness (14 [22.6%]), spontaneous undifferentiated dizziness (14 [22.6%]), or unilateral peripheral hypofunction (9 [14.5%]). Despite having higher Dizziness Handicap Inventory and Vestibular Activities Avoidance Inventory scores at baseline, ED-VeRT participants reported lower dizziness handicap (difference: -1.68; 95% CI, -11.30 to 7.90) and vestibular activities avoidance (difference: -2.27; 95% CI, -8.40 to 3.86) at 3 months, although these differences were not statistically significant.

CONCLUSIONS AND RELEVANCE: In this nonrandomized clinical trial, ED vestibular therapy was feasibly delivered to patients presenting to the ED with undifferentiated dizziness symptoms. For participants receiving vestibular therapy the findings for dizziness-related disability over 3 months were not statistically significant, pointing to the need for a fully powered randomized clinical trial.

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PMCID: PMC11829232

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3. PLoS One. 2025 Feb 12;20(2):e0318345. doi: 10.1371/journal.pone.0318345. eCollection 2025.

Participant experiences receiving acupuncture for acute musculoskeletal pain in an emergency department: A qualitative evaluation.

Tupetz A(1)(2), Frazier M(1), O'Regan A(3), Knisely M(4), TumSuden O(1), Walker E(1), Sununu C(1), Glass O(5), Miller-Maxwell A(6), Staton CA(1)(2), Eucker SA(1).

OBJECTIVE: Acupuncture is an evidence-based pain treatment in clinic settings, but its optimal delivery has not been established in emergency departments (EDs). As part of an adaptive pragmatic randomized controlled trial of ED acupuncture for acute musculoskeletal pain (NCT04290741), we embedded a qualitative evaluation of acupuncture treatment acceptability and suggestions for improvement from study participants receiving acupuncture in the ED.

METHODS: Semi-structured interviews conducted remotely evaluated factors impacting patients' perspectives, willingness to participate in, and experiences with ED acupuncture. The codebook was iteratively developed, and recruitment and analysis continued until information saturation was reached.

RESULTS: Twenty-eight participants receiving ED acupuncture between February 2020-March 2021 were interviewed, with median age 44 years, 46.4% female, and 61% having never previously received acupuncture. Overall, ED patients with acute musculoskeletal pain expressed interest in acupuncture and reported an overall positive experience. Most reported acupuncture met their expectations for pain improvement, and many reported additional improvements in stress, anxiety, and sleep quality. Participants with a positive experience were more likely to recommend acupuncture to others. Key positive aspects included open communication with compassionate and knowledgeable acupuncturists. Participants found the ED setting acceptable and convenient for receiving acupuncture. Furthermore, participants provided actionable feedback like addressing fear of needles to improve the ED acupuncture experience.

CONCLUSIONS: In conclusion, ED patients with acute musculoskeletal pain were interested in and had positive experiences with acupuncture treatment for pain and found the ED setting acceptable and convenient. Participant feedback can be used to improve acupuncture treatment in the ED.

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PMCID: PMC11819596

Journal report – únor 2025

4. BMC Med. 2025 Feb 4;23(1):63. doi: 10.1186/s12916-025-03903-8.

Implementation of a rapid host-protein diagnostic test for distinguishing bacterial and viral infections in adults presenting to urgent care centers: a pragmatic cohort study.

Kalmovich B(1), Rahamim-Cohen D(1)(2), Yehoshua I(1)(2), Kivity S(1), Orvieto N(1)(2), Shapiro Ben David S(3)(4).

BACKGROUND: Urgent care centers (UCCs) are a growing segment of healthcare with high rates of inappropriate antibiotic use. MeMed BV® (MMBV) is a blood test that differentiates bacterial from viral infections. Between April 2022 and March 2023, we introduced MMBV into routine care at ten UCCs. The primary objective was to assess MMBV's impact on antibiotic use; the secondary objective was to assess whether MMBV aided in patient management.

METHODS: A pragmatic prospective cohort study. Physicians who ordered MMBV reported electronically (in real-time) whether they intended to prescribe antibiotics before ordering the test and upon UCC discharge whether MMBV aided in patient management. Hospitalizations were recorded for 7 days post-UCC discharge.

RESULTS: During implementation, 3920 MMBV tests were ordered for adults (age ≥ 18) by 144 physicians. The study cohort had 59% female patients and the median age was 42 years (IQR 31-58). For the primary objective, 3262 cases were included. MMBV indicated 629/3262 (19.3%) cases of potentially unwarranted antibiotics, of which physicians avoided prescriptions in 397/629 (63.1%). MMBV indicated 405/3262 (12.4%) cases of potentially missed bacterial infections. Physicians prescribed antibiotics to 283/405 (69.9%). MMBV adherence was associated with fewer hospitalizations (7.8% vs. 30.3%, $p < 0.001$). For the secondary objective, 2901 cases were included. Physicians reported MMBV aided patient management in 2494/2901 (86.0%) cases and contributed to avoiding emergency department referrals in 595/2901 (20.5%).

CONCLUSIONS: Implementing MMBV aided urgent care center physicians in their clinical decision-making and may have contributed to appropriate antibiotic use, better resource utilization, and patient management.

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PMCID: PMC11792296

PMID: 39901146 [Indexed for MEDLINE]

5. Lancet Digit Health. 2025 Feb;7(2):e136-e144. doi: 10.1016/S2589-7500(24)00250-4.

Diagnoses supported by a computerised diagnostic decision support system versus conventional diagnoses in emergency patients (DDX-BRO): a multicentre, multiple-period, double-blind, cluster-randomised, crossover superiority trial.

Hautz WE(1), Marcin T(2), Hautz SC(2), Schauber SK(3), Krummrey G(4), Müller M(2), Sauter TC(2), Lambrigger C(2), Schwappach D(5), Nendaz M(6), Lindner G(7), Bosbach S(8), Griesshammer I(9), Schönberg P(8), Plüss E(9), Romann V(8), Ravioli S(10), Werthmüller N(2), Kölbener F(2), Exadaktylos AK(2), Singh H(11), Zwaan L(12).

BACKGROUND: Diagnostic error is a frequent and clinically relevant health-care problem. Whether computerised diagnostic decision support systems (CDDSSs) improve diagnoses is controversial, and prospective randomised trials investigating their effectiveness in routine clinical practice are scarce. We hypothesised that diagnoses made with a CDDSS in the emergency department setting would be superior to unsupported diagnoses.

METHODS: This multicentre, multiple-period, double-blind, cluster-randomised, crossover superiority trial was done in four emergency departments in Switzerland. Eligible patients were adults (aged ≥18 years) presenting with abdominal pain, fever of unknown origin, syncope, or non-specific symptoms. Emergency departments were randomly assigned (1:1) to one of two predefined sequences of six alternating periods of intervention or control. Patients presenting during an intervention period were diagnosed with the aid of a CDDSS, whereas patients presenting during a control period were diagnosed without a CDDSS (usual care). Patients and personnel assessing outcomes were masked to group allocation; treating physicians were not. The primary binary outcome (false or true) was a composite score indicating a risk of reduced diagnostic quality, which was deemed to be present if any of the following occurred within 14 days: unscheduled medical care, a change in diagnosis, an unexpected intensive care unit admission within 24 h if initially admitted to hospital, or death. We assessed superiority of supported versus unsupported diagnoses in all consenting patients using a generalised linear mixed effects model. All participants who received any study treatment (including control) and completed the study were included in the safety analysis. This trial is registered with ClinicalTrials.gov (NCT05346523) and is closed to accrual.

FINDINGS: Between June 9, 2022, and June 23, 2023, 15 845 patients were screened and 1204 (591 [49·1%] female and 613 [50·9%] male) were included in the primary efficacy analysis. The median age of participants was 53 years (IQR 34-69). Diagnostic quality risk was observed in 100 (18%) of 559 patients with CDDSS-supported diagnoses and 119 (18%) of 645 with

unsupported diagnoses (adjusted odds ratio 0·96 [95% CI 0·71-1·3]). 94 (7·8%) patients suffered a serious adverse event, none related to the study.

INTERPRETATION: Use of a CDDSS did not reduce the occurrence of diagnostic quality risk compared with the usual diagnostic process in adults presenting to emergency departments. Future research should aim to identify specific contexts in which CDDSSs are effective and how existing CDDSSs can be adapted to improve patient outcomes.

DOI: 10.1016/S2589-7500(24)00250-4

PMID: 39890244 [Indexed for MEDLINE]

6. JAMA. 2025 Feb 18;333(7):599-608. doi: 10.1001/jama.2024.23696.

Palliative Care Initiated in the Emergency Department: A Cluster Randomized Clinical Trial.

Grudzen CR(1), Siman N(2), Cuthel AM(2), Adeyemi O(2), Yamarik RL(3), Goldfeld KS(4); PRIM-ER Investigators; Abella BS(5), Bellolio F(6), Bourenane S(7), Brody AA(8), Cameron-Comasco L(9), Chodosh J(10), Cooper JJ(5), Deutsch AL(11)(12), Elie MC(13)(14), Elsayem A(7), Fernandez R(15), Fleischer-Black J(16), Gang M(17), Genes N(18), Goett R(17), Heaton H(6), Hill J(19), Horwitz L(20)(4), Isaacs E(21), Jubanyik K(22), Lamba S(17), Lawrence K(4), Lin M(23), Loprinzi-Brauer C(6), Madsen T(24), Miller J(25), Modrek A(18), Otero R(26), Ouchi K(27), Richardson C(23), Richardson LD(23), Ryan M(15), Schoenfeld E(11)(12), Shaw M(15), Shreves A(28), Southerland LT(29), Tan A(30), Uspal J(5), Venkat A(31), Walker L(6), Wittman I(18), Zimny E(25).

IMPORTANCE: The emergency department (ED) offers an opportunity to initiate palliative care for older adults with serious, life-limiting illness.

OBJECTIVE: To assess the effect of a multicomponent intervention to initiate palliative care in the ED on hospital admission, subsequent health care use, and survival in older adults with serious, life-limiting illness.

DESIGN, SETTING, AND PARTICIPANTS: Cluster randomized, stepped-wedge, clinical trial including patients aged 66 years or older who visited 1 of 29 EDs across the US between May 1, 2018, and December 31, 2022, had 12 months of prior Medicare enrollment, and a Gagne comorbidity score greater than 6, representing a risk of short-term mortality greater than 30%. Nursing home patients were excluded.

INTERVENTION: A multicomponent intervention (the Primary Palliative Care for Emergency Medicine intervention) included (1) evidence-based multidisciplinary education; (2)

simulation-based workshops on serious illness communication; (3) clinical decision support; and (4) audit and feedback for ED clinical staff.

MAIN OUTCOME AND MEASURES: The primary outcome was hospital admission. The secondary outcomes included subsequent health care use and survival at 6 months.

RESULTS: There were 98 922 initial ED visits during the study period (median age, 77 years [IQR, 71-84 years]; 50% were female; 13% were Black and 78% were White; and the median Gagne comorbidity score was 8 [IQR, 7-10]). The rate of hospital admission was 64.4% during the preintervention period vs 61.3% during the postintervention period (absolute difference, -3.1% [95% CI, -3.7% to -2.5%]; adjusted odds ratio [OR], 1.03 [95% CI, 0.93 to 1.14]). There was no difference in the secondary outcomes before vs after the intervention. The rate of admission to an intensive care unit was 7.8% during the preintervention period vs 6.7% during the postintervention period (adjusted OR, 0.98 [95% CI, 0.83 to 1.15]). The rate of at least 1 revisit to the ED was 34.2% during the preintervention period vs 32.2% during the postintervention period (adjusted OR, 1.00 [95% CI, 0.91 to 1.09]). The rate of hospice use was 17.7% during the preintervention period vs 17.2% during the postintervention period (adjusted OR, 1.04 [95% CI, 0.93 to 1.16]). The rate of home health use was 42.0% during the preintervention period vs 38.1% during the postintervention period (adjusted OR, 1.01 [95% CI, 0.92 to 1.10]). The rate of at least 1 hospital readmission was 41.0% during the preintervention period vs 36.6% during the postintervention period (adjusted OR, 1.01 [95% CI, 0.92 to 1.10]). The rate of death was 28.1% during the preintervention period vs 28.7% during the postintervention period (adjusted OR, 1.07 [95% CI, 0.98 to 1.18]).

CONCLUSIONS AND RELEVANCE: This multicomponent intervention to initiate palliative care in the ED did not have an effect on hospital admission, subsequent health care use, or short-term mortality in older adults with serious, life-limiting illness.

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PMCID: PMC11836764

PMID: 39813042 [Indexed for MEDLINE]

7. Int Emerg Nurs. 2025 Feb;78:101546. doi: 10.1016/j.ienj.2024.101546. Epub 2024 Dec 4.

Video and booklet discharge instructions for mothers for childhood fever in pediatric emergency department: A randomized controlled trial.

Kurt A(1), Dinç F(2), Güneş Şan E(3).

BACKGROUND: Due to lack of knowledge and misunderstanding, parents may mismanage a fever and seek unnecessary medical attention.

AIM: The study aimed to determine the effectiveness of video and booklet discharge instructions for childhood fever in the pediatric emergency department.

METHODS: This randomized controlled trial (NCT05929131) consisted of three groups: video (n = 48), booklet (n = 48), and verbal (n = 48) discharge instructions. Data were collected using the Introductory Information Form, Parent's Childhood Fever Management, Post-Discharge Coping Difficulties Scale for Parents, and Post-Discharge Information Form.

RESULTS: Within the first 3 days after receiving discharge instructions, parents in the video group had lower scores on the Parents' Fever Management Scale (video: 20.29 ± 1.99, booklet: 20.65 ± 2.07, verbal: 28.41 ± 1.51; $p < 0.05$) and the Post-Discharge Coping Difficulties Scale for Parents (video: 39.44 ± 3.91, verbal: 54.03 ± 9.12; $p = 0.019$) compared to the verbal group. After discharge, the number of hospital readmissions was lower in the video group of parents compared to the verbal group (video: 1.12 ± 0.44, verbal: 1.54 ± 0.96, $p = 0.015$).

CONCLUSION: Visual discharge instructions, such as booklets and videos to support discharge instructions, have been shown to be effective in improving mothers' fever management skills and reducing their return to the emergency department.

DOI: 10.1016/j.ienj.2024.101546

PMID: 39637747 [Indexed for MEDLINE]

8. Am J Emerg Med. 2025 Feb;88:79-83. doi: 10.1016/j.ajem.2024.11.034. Epub 2024 Nov 23.

Comparing first pass success of Channeled versus Non-channeled KingVision video laryngoscopes in patients presenting to the emergency department - A randomized control study.

Verma A(1), Jaiswal S(2), Mahawar A(2), Lal M(2), Gupta S(2), Mittal N(2).

INTRODUCTION: In modern times, the emergency physician (EP) has access to a host of video laryngoscopes (VL). There are different makes, models, angulations in the blades provided by

different VLs. The blades may be channeled or non-channeled. In busy emergency departments (ED), ease and speed of intubations in managing the emergent airways may impact the outcome for the patient.

OBJECTIVE: The primary objective of our study was to compare the rates of first pass success using the channeled versus the non-channeled blades of the KingVision VL (KVVL).

METHODS: This was a randomized controlled single blinded study. All patients requiring emergent definitive airway management were included in the study. They were randomized into 2 groups - channeled and non-channeled KVVL. Intubations were carried out accordingly. First pass success, time taken to intubate and crossover between the blades were recorded.

RESULTS: A total of 130 patients were enrolled in the study. First pass success for the channeled and non-channeled KVVL was 55.4 % and 81.6 % (p = 0.005) respectively. The mean time to intubate using the channeled and non-channeled KVVL were 24.69 s [95 % CI 20.25-29.13] and 28.95 s [95 % CI 23.64-34.26] (p = 0.207) respectively. A total of 33.07 % patients had crossovers between the blades.

CONCLUSION: We found the non-channeled blades to have a significantly higher percentage of first pass success. Performance with respect to time to intubate was similar between the two. We recommend using the non-channeled KVVL for intubations in the EDs.

DOI: 10.1016/j.ajem.2024.11.034

PMID: 39608311 [Indexed for MEDLINE]

9. Eur J Hosp Pharm. 2025 Feb 21;32(2):126-131. doi: 10.1136/ejhpharm-2024-004218.

Impact of pharmaceutical care on hospital readmissions for heart failure: a randomised trial.

Montero-Llorente B(1), Pérez Menéndez-Conde C(2), González Ferrer E(3), López Castellanos GT(4), Bedoya Del Olmo LM(5), Bermejo Vicedo T(2).

OBJECTIVES: To evaluate the impact of pharmaceutical care on the number of readmissions and visits to the emergency department due to heart failure 30 days after hospital discharge, based on a programme of continuous pharmaceutical care throughout the care process, and to assess the differences between the control and intervention groups at 90 days after discharge (number of readmissions and visits to the emergency department, time from discharge to new readmission or visit to the emergency department).

METHODS: A single-centre experimental longitudinal prospective open and parallel-group study with balanced randomisation (1:1) was carried out in a tertiary hospital in Spain. Patients

with a diagnosis of primary or decompensated heart failure admitted to the Cardiology Service or the Heart Failure and Vascular Risk Unit were recruited between March 2019 and November 2021 and randomly assigned, using a randomised block model, to the control (standard care) or intervention (continuing care model) groups. Epidemiological, clinical and pharmacology data were recorded. As a measure of association, we used the mean difference and the Student's t-test. A p value of <0.05 was considered significant.

RESULTS: 296 patients were included (150 randomised to the control group, 146 to the intervention group). The results showed no significant differences between the control and intervention groups in the number of readmissions and visits to the emergency department during the 30 days after discharge (p=0.092), but a statistically significant difference was seen at 90 days (p=0.043). The number of days until the first visit to the emergency department or readmission was higher in the intervention group (p=0.021).

CONCLUSIONS: Continuous care and follow-up by the pharmacist 30 days after discharge has a neutral impact on hospital readmissions and visits to the emergency department of patients with heart failure, but it is positive in the 90 days following discharge.

DOI: 10.1136/ejhpharm-2024-004218

PMID: 39603805 [Indexed for MEDLINE]

10. Am J Emerg Med. 2025 Feb;88:29-33. doi: 10.1016/j.ajem.2024.11.026. Epub 2024 Nov 18.

Comparison of supination/flexion maneuver to hyperpronation maneuver in the reduction of radial head subluxations: A randomized clinical trial.

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OBJECTIVE: This randomized controlled trial aimed to compare the effectiveness of supination/flexion (SF) and hyperpronation (HP) maneuvers in the management of radial head subluxation (RHS) in children ≤6 years old presenting to the emergency department.

METHODS: Patients were randomly allocated to one of two treatment arms. Following the application of the respective reduction maneuver, maneuver success was assessed after 10 min. If unsuccessful, the maneuver was repeated up to three times. Patients failing to achieve reduction after three attempts were classified as experiencing ultimate failure. Treatment failure rates were compared between groups for each reduction attempt. Additionally, procedural pain, side effects, and recurrence within 72 h were compared between treatment groups.

RESULTS: In this study involving 119 patients, first attempt failure rates were 9.8 % in the HP group and 24.2 % in the SF group, indicating a statistically significant advantage for HP (Risk ratio 0.41 (95 % confidence interval 0.19 to 0.98)). No statistically significant differences were observed between groups regarding second-attempt success, ultimate failure, procedural pain, side effects, or recurrence rates within 72 h.

CONCLUSION: Among children ≤6 years old presenting with RHS, the HP maneuver demonstrated significantly superior first-attempt success rates compared to SF. Therefore, we recommend the HP maneuver as the preferred initial treatment option for managing these patients.

DOI: 10.1016/j.ajem.2024.11.026

PMID: 39579408 [Indexed for MEDLINE]

11. Eur Geriatr Med. 2025 Feb;16(1):205-217. doi: 10.1007/s41999-024-01091-x. Epub 2024 Nov 16.

On-site physiotherapy in older emergency department patients following a fall: a randomized controlled trial.

Benhamou J(1), Espejo T(1), Riedel HB(1), Dreher-Hummel T(1), García-Martínez A(2), Gubler-Gut B(3), Kirchberger J(3), Overberg JA(3), Perrot G(3), Bingisser R(1), Nickel CH(4).

PURPOSE: Greater fear of falling (FOF) is associated with an increased risk of falling in patients aged 65 and older. This study aims to assess the impact of physiotherapy on FOF in older patients and investigates the feasibility of such an intervention in the emergency department (ED) setting.

METHODS: All patients aged 65 or older, who presented to the ED of the University Hospital Basel after a fall between January 2022 and June 2023 were screened for inclusion. Participants were assigned to an intervention or control group depending on the randomized presence or absence of a physiotherapist at inclusion. Both groups received the same fall prevention booklet. Physiotherapists instructed and performed exercises with patients in the intervention group. The primary outcome was the difference in FOF between groups 7 days post inclusion, assessed by short Falls Efficacy Scale International (sFES-I). Secondary outcomes included feasibility, overall reduction of FOF, patient satisfaction, the occurrence of falls post inclusion and the use of medical resources.

RESULTS: Of the 1204 patients screened for inclusion, 104 older adults with a recent fall were enrolled (intervention: n = 44, control: n = 60); median age was 81 years and 59.1% were

female. There was no between-group difference in FOF as measured by sFES-I within a week of inclusion (p = 0.663, effect size = 0.012 [95% confidence interval (CI) - 0.377 to 0.593]). Despite the intervention being deemed feasible from the physiotherapist's perspective, the study encountered challenges, such as low recruitment (with the planned sample size not being reached) and a notable dropout rate before the first follow-up.

CONCLUSION: A physiotherapy intervention in the ED showed no improvement in FOF when compared to a control group.

DOI: 10.1007/s41999-024-01091-x

PMCID: PMC11850422

PMID: 39548032 [Indexed for MEDLINE]

12. Eur J Heart Fail. 2025 Feb;27(2):377-387. doi: 10.1002/ejhf.3499. Epub 2024 Nov 5.

Long-term clinical outcomes and healthcare resource utilization in male and female patients following hospitalization for heart failure.

Averbuch T(1), Lee SF(2), Zagorski B(3), Pandey A(4), Petrie MC(5), Biering-Sorensen T(6)(7)(8)(9), Xie F(10), Van Spall HGC(2)(11)(12)(13).

AIMS: Heart failure (HF) is a leading cause of hospitalization, and sex differences in care have been described. We assessed sex-specific clinical outcomes and healthcare resource utilization following hospitalization for HF.

METHODS AND RESULTS: This was an exploratory analysis of patients hospitalized for HF across 10 Canadian hospitals in the Patient-Centered Care Transitions in HF (PACT-HF) cluster-randomized trial. The primary outcome was all-cause mortality. Secondary outcomes included all-cause readmissions, HF readmissions, emergency department (ED) visits, and healthcare resource utilization. Outcomes were obtained via linkages with administrative datasets. Among 4441 patients discharged alive, 50.7% were female. By 5 years, 63.6% and 65.5% of male and female patients, respectively, had died (p = 0.19); 85.4% and 84.4%, respectively, were readmitted (p = 0.35); and 72.2% and 70.9%, respectively, received ED care without hospitalization (p = 0.34). There were no sex differences in mean [SD] number of all-cause readmissions (males, 2.8 [7.8] and females, 3.0 [8.4], p = 0.54), HF readmissions (males, 0.9 [3.6] and females, 0.9 [4.5], p = 0.80), or ED visits (males, 1.8 [11.3] and females, 1.5 [6.0], p = 0.24) per person. There were no sex differences in mean [SD] annual direct healthcare cost per patient (males, $80 334 [116 762] versus females, $81 010 [112 625], p = 0.90), but males received more specialist, multidisciplinary HF clinic, haemodialysis, and day surgical care, and

females received more home visits, continuing/convalescent care, and long-term care. Annualized clinical events were highest in first year following index discharge in both males and females.

CONCLUSIONS: Among people discharged alive after hospitalization for HF, there were no sex differences in total and annual deaths, readmissions, and ED visits, or in total direct healthcare costs. Despite similar risk profiles, males received relatively more specialist care and day surgical procedures, and females received more supportive care.

DOI: 10.1002/ejhf.3499

PMCID: PMC11860730

PMID: 39498574 [Indexed for MEDLINE]

13. Addiction. 2025 Feb;120(2):368-379. doi: 10.1111/add.16698. Epub 2024 Oct 31.

Cost-utility analysis of provision of e-cigarette starter kits for smoking cessation in emergency departments: An economic evaluation of a randomized controlled trial.

Li J(1), Wu Q(1), Parrott S(1), Pope I(2), Clark LV(3), Clark A(3), Ward E(4), Belderson P(4), Stirling S(3), Coats TJ(5), Bauld L(6), Holland R(7), Gentry S(4), Agrawal S(8), Bloom BM(9), Boyle A(10), Gray A(11), Morris MG(12), Livingstone-Banks J(13), Notley C(4).

AIMS: To assess the cost-effectiveness of the Cessation of Smoking Trial in Emergency Department (COSTED) intervention compared with signposting to local stop smoking service (SSS) from the National Health Service (NHS) and personal social services (PSS) perspective.

DESIGN, SETTING AND PARTICIPANTS: This was a two-group, multi-centre, pragmatic, individually randomized controlled trial set in six Emergency Departments (EDs) in urban and rural areas in the United Kingdom. Adult (≥ 18 years) daily smokers (at least one cigarette or equivalent per day) but not daily e-cigarette users, with carbon monoxide reading ≥ 8 parts per million, attending the ED (n = 972) were included. The intervention consisted of provision of an e-cigarette starter kit plus brief smoking cessation advice and referral to a local SSS. Control was an information card on how to access local SSS.

MEASUREMENTS: Intervention costs included costs of training and delivery. Control costs included costs of printing information cards. Costs of smoking cessation and health-care services were estimated based on quantities reported by participants and unit costs extracted from secondary sources. The effects were measured by quality-adjusted life years (QALYs) derived from EQ-5D-5L. Other outcomes were smoking cessation measures. The primary

outcome was incremental cost-effectiveness ratio (ICER), which was calculated by dividing the difference in costs by the difference in QALYs between groups.FINDINGS: The mean intervention costs were £48 [standard error (SE) = £0] per participant and the mean control costs were £0.2 (SE = £0) per participant. Using regression estimates, total costs were £31 [95% confidence interval (CI) = -£341 to £283] higher and 6-month QALYs were 0.004 (95% CI = -0.004 to 0.014) higher in the intervention group than in the control group. The ICER was calculated at £7750 (probability of cost-effective at range £20 000-30 000: 72.2-76.5%).

CONCLUSIONS: The UK Cessation of Smoking Trial in Emergency Department (COSTED) intervention (provision of an e-cigarette starter kit plus brief smoking cessation advice) was cost-effective compared with signposting to local stop smoking services under the current recommendations of the maximum acceptable thresholds.

DOI: 10.1111/add.16698

PMCID: PMC11707313

PMID: 39482840 [Indexed for MEDLINE]

14. Diagnosis (Berl). 2024 Oct 16;12(1):61-67. doi: 10.1515/dx-2024-0121. eCollection 2025 Feb 1.

Impact of disclosing a working diagnosis during simulated patient handoff presentation in the emergency department: correctness matters.

Amano M(1)(2), Harada Y(2), Shimizu T(2).

OBJECTIVES: Diagnostic errors in emergency departments (ED) are a significant concern and exacerbated by cognitive biases during patient handoffs. The timing and accuracy of disclosing working diagnoses during these handoffs potentially influence diagnostic decisions, yet empirical evidence remains limited.

MATERIALS AND METHODS: This parallel, quasi-experimental study involved 40 interns from Japanese teaching hospitals, randomly assigned to control or intervention groups. Each group reviewed eight audio-recorded patient handoff scenarios where working diagnoses were disclosed at the start (control) or end (intervention). Four cases presented correct diagnoses, while four featured incorrect ones. The main measure was diagnostic error rate, calculated as the proportion of incorrect post-handoff responses to total questions asked.

RESULTS: No significant difference in diagnostic error rates emerged between the control (39.4 %, 63/160) and intervention (38.8 %, 62/160) groups (point estimate -0.6 %; 95 % CI: -

11.3-10.1 %, p=0.91). However, a substantial difference was evident between diagnostic errors after correct (20.6 %, 33/160) and incorrect (57.5 %, 92/160) working diagnoses presented (point estimate: 36.9 %; 95 % CI: 27.0-46.8 %, p<0.001). Diagnostic momentum accounted for 52 % (48/92) of errors under incorrect diagnoses.

CONCLUSIONS: While the timing of working diagnosis disclosure did not significantly alter diagnostic accuracy during ED handoffs, exposure to incorrect diagnoses markedly increased error rates. These findings underscore the imperative to refine diagnostic skills and reconsider ED handoff protocols to mitigate cognitive biases and optimize patient care outcomes.

DOI: 10.1515/dx-2024-0121

PMID: 39404256 [Indexed for MEDLINE]

15. ESC Heart Fail. 2025 Feb;12(1):688-694. doi: 10.1002/ehf2.15069. Epub 2024 Sep 6.

Prevalence and characteristics of upfront diuretic resistance in acute heart failure: The P-Value-AHF study.

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AIMS: Diuretic resistance (i.e., insufficient diuretic and natriuretic response to an appropriate dose of intravenously administered loop diuretic) is a major cause of insufficient decongestion in acute heart failure (AHF). Early assessment of diuretic and natriuretic response already after the first administration of loop diuretic is currently recommended, but few data exist on the prevalence and characteristics of upfront diuretic resistance in AHF. The aim of this sub-study of the P-Value-AHF randomized clinical trial was to investigate the prevalence and characteristics of upfront diuretic resistance in patients presenting with AHF in the emergency department (ED).

METHODS: Consecutive patients presenting with a clinical diagnosis of AHF, ≥1 sign of congestion, and NT-proBNP >1000 ng/L between February and June 2024 were prospectively screened. Loop diuretics were administered per protocol: 40 mg furosemide i.v. in diuretic-naïve patients and those on oral torasemide <40 mg, 80 mg furosemide i.v. in patients on oral torasemide ≥40 mg daily. Urine output was measured over the following 2 h and in patients with urine volume <300 mL, urine sodium concentration was additionally measured in a spot sample. Upfront diuretic resistance was defined as urine volume <300 mL in 2 h and urine sodium concentration <70 mmol/L.

RESULTS: From a total of 127 screened AHF patients presenting to the ED, 17 subjects were excluded after denial of informed consent and 17 could not be treated according to the protocol due to one or more exclusion criteria. Of the remaining 93 per-protocol-treated patients, 91 showed an adequate diuretic response either in terms of urine volume or urine sodium concentration. Only two of 93 patients (2.2%) met the criteria of upfront diuretic resistance. In a post-hoc analysis, patients with diuretic resistance had higher prevalence of chronic kidney or liver diseases, markedly lower blood pressure and heart rate, markedly higher serum creatinine and potassium levels, and lower serum sodium. Notably, clinical signs of congestion, circulating NT-proBNP, and left-ventricular ejection fraction were similar in both groups.

CONCLUSIONS: Upfront diuretic resistance in an unselected population of AHF patients presenting to the ED affects only a minority of patients. These data highlight the importance of a standardized, protocolized approach to decongestive treatment in AHF, which includes the rapid administration of loop diuretics in an adequate dose. Pre-existing chronic kidney disease and high creatinine levels were more prevalent in patients with diuretic resistance.

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PMCID: PMC11769653

PMID: 39239801 [Indexed for MEDLINE]

16. Acad Emerg Med. 2025 Feb;32(2):158-164. doi: 10.1111/acem.14996. Epub 2024 Aug 19.

Piroxicam and paracetamol in the prevention of early recurrent pain and emergency department readmission after renal colic: Randomized placebo-controlled trial.

Jaballah R(1)(2), Toumia M(1)(3), Youssef R(2), Ali KBH(1)(3), Bakir A(2), Sassi S(1)(3), Yaakoubi H(2), Kouraichi C(1)(3), Dhaoui R(1)(3), Sekma A(1)(3), Zorgati A(2), Beltaief K(1)(3), Mezgar Z(4), Khrouf M(4), Bouida W(1)(3), Grissa MH(1)(3), Saad J(5), Boubaker H(1)(3), Boukef R(1)(2), Msolli MA(1)(3), Nouira S(1)(3).

OBJECTIVE: Renal colic (RC) is a common urologic emergency often leading to significant pain and recurrent hospital visits. This study aimed to compare the efficacy and safety of piroxicam versus paracetamol in preventing pain recurrence and hospital readmission in patients treated for RC and discharged from the emergency department (ED).

METHODS: A prospective, randomized, single-blind trial was conducted in four EDs. Eligible adults with RC were randomized to receive oral piroxicam, paracetamol, or placebo for 5 days

post-ED discharge. Primary outcomes included pain recurrence and ED readmission within 7 days. Secondary outcomes included time to recurrence and treatment-related side effects.

RESULTS: Of 1383 enrolled patients, no significant differences were observed among the groups regarding baseline characteristics. Pain recurrence rates within 7 days were 29% (95% confidence interval [CI] 24.9%-33.2%) for piroxicam, 30.3% (95% CI 26.1%-34.5%) for paracetamol, and 30.8% (95% CI 26.6%-35.0%) for placebo, with no significant between-group differences (p = 0.84). Among patients experiencing recurrence, the majority encounter it within the initial 2 days following their discharge (86% in the piroxicam group, 84.1% in the paracetamol group, and 86% in the placebo group, respectively). ED readmission rates were similar across groups: 20.8% (95% CI 17.1%-24.5%) in the piroxicam group, 23.8% (95% CI 19.9%-27.7%) in the paracetamol group, and 22.9% (95% CI 19.1%-26.8%) in the placebo group (p = 0.52). The piroxicam group reported significantly higher adverse effects compared to others.

CONCLUSIONS: Piroxicam and paracetamol did not demonstrate efficacy in preventing pain recurrence or ED readmission within the first week following RC treatment.

DOI: 10.1111/acem.14996

PMCID: PMC11815999

PMID: 39161087 [Indexed for MEDLINE]

17. Eur J Emerg Med. 2025 Feb 1;32(1):46-51. doi: 10.1097/MEJ.0000000000001165. Epub 2024 Jul 31.

Association of early doses of diuretics and nitrates in acute heart failure with 30 days outcomes: ancillary analysis of ELISABETH study.

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AIMS: The optimal dose of diuretics and nitrates for acute heart failure treatment remains uncertain. This study aimed to assess the association between intravenous nitrates and loop diuretics doses within the initial 4 h of emergency department presentation and the number of days alive and out of hospital (NDAOH) through 30 days.

METHODS: This was an ancillary study of the ELISABETH stepped-wedge cluster randomized trial that included 502 acute heart failure patients 75 years or older in 15 French emergency departments. The primary endpoint was the NDAOH at 30 days. The total dose of intravenous

nitrates and loop diuretics administered in the initial 4 h were each categorized into three classes: 'no nitrate', '> 0-16', and '> 16 mg' for nitrates and '< 60', '60', and '> 60 mg' for diuretics. Secondary endpoints included 30-day mortality, 30-day hospital readmission, and hospital length of stay in patients alive at 30 days. Generalized linear mixed models were used to examine associations with the endpoints.

RESULTS: Of 502 patients, the median age was 87 years, with 59% women. The median administered dose within the initial 4 h was 16 mg (5.0; 40.0) for nitrates and 40 mg (40.0; 80.0) for diuretics. The median NDAOH at 30 days was 19 (0.0-24.0). The adjusted ratios of the NDAOH were 0.88 [95% confidence interval (CI): 0.63-1.23] and 0.76 (95% CI: 0.58-1.00) for patients that received 60 and > 60 mg, respectively, compared with patients that received 40 mg or less of diuretics. Compared with patients who did not receive nitrates, the adjusted ratios of the NDAOH were 1.17 (95% CI: 0.82-1.67) and 1.45 (95% CI: 0.90-2.33) for patients who received 1-16 and > 16 mg, respectively. There was no significant association with any of the secondary endpoints.

CONCLUSION: In this ancillary analysis, there was no significant association between different doses of diuretics and nitrates with the NDAOH at 30 days. Point estimates and CIs may suggest that the optimal doses are less than 60 mg of diuretics, and more than 16 mg of nitrates in the first 4 h.

DOI: 10.1097/MEJ.0000000000001165

PMID: 39082268 [Indexed for MEDLINE]

Journal report – únor 2025

PREHOSPITAL CARE

– systematic review & meta-analysis –

1. BMC Health Serv Res. 2025 Feb 15;25(1):256. doi: 10.1186/s12913-025-12416-2.

Mobile applications enhance out-of-hospital cardiac arrest outcomes: a systematic review and meta-analysis.

Tong Q(#)(1)(2), Zhou M(#)(3), Liu X(2), Long J(2), Li L(2), Pan X(2), Gao H(4), Hu R(5)(6)(7).

INTRODUCTION: Mobile applications, as innovative tools for promoting bystander cardiopulmonary resuscitation (CPR), have demonstrated potential to improve outcomes for patients experiencing out-of-hospital cardiac arrest (OHCA). This meta-analysis sought to systematically review the technical features of existing mobile applications and evaluate their impact on OHCA patient outcomes under various emergency response strategies. The findings aimed to guide the development and optimization of prehospital public emergency response systems.

METHODS: A systematic search was conducted in databases including China National Knowledge Infrastructure (CNKI), Wanfang Database, Chinese Scientific Journals Database (VIP), SinoMed, PubMed, Embase, Web of Science, and the Cochrane Library, from inception to August 2023. The included studies involved notifying citizens via text messages or smartphone applications to act as first responders or volunteers in OHCA cases. Using a random effects model and subgroup analysis, we synthesized the results to identify sources of heterogeneity and assess outcomes.

RESULTS: Thirteen mobile applications were included, with an average activation rate of 35.3% among patients and a volunteer arrival rate of 53.3%. Compared to traditional emergency medical services, mobile applications significantly improved survival to discharge or 30-day survival rates (RR = 1.34, 95% CI: 1.24-1.44; $P < 0.05$), return of spontaneous circulation (ROSC) rates upon hospital admission (RR = 1.23, 95% CI: 1.09-1.40; $P < 0.05$), bystander CPR rates (RR = 1.25, 95% CI: 1.13-1.37; $P < 0.05$), and bystander defibrillation rates (RR = 1.23, 95% CI: 1.00-1.51; $P = 0.05$). Subgroup analyses revealed consistent results for bystander CPR rates and survival outcomes, while variations in defibrillation rates and ROSC at admission were observed, indicating potential influences of application design and operational parameters.

CONCLUSIONS: This study highlighted the significant potential of mobile applications in enhancing bystander interventions and improving patient outcomes. Addressing challenges such as improving access to automated external defibrillators and raising public awareness

remained essential to maximizing their overall effectiveness. PROSPERO REGISTRATION NUMBER: CRD42023477676.

DOI: 10.1186/s12913-025-12416-2

PMCID: PMC11830178

PMID: 39955524 [Indexed for MEDLINE]

2. BMC Emerg Med. 2025 Feb 14;25(1):24. doi: 10.1186/s12873-025-01180-5.

Preparedness dimensions and components of emergency medical services in chemical hazards: a systematic review.

Khanizade A(1), Moslehi S(2)(3), Dowlati M(1)(4), Moradimajd P(5), Moradian MJ(6).

BACKGROUND: EMS providers are often the only emergency workers with medical knowledge at the scene of chemical hazards and are exposed to severe risks. They should always be prepared to face chemical hazards to be able to provide an effective response to them. Therefore, this study identified the dimensions and components of emergency medical services system preparedness in chemical hazards.

METHODS: We searched the relevant electronic databases, including ProQuest, Embase, PubMed, Web of Science, and Scopus. The search included articles in English published up to November 2, 2023. In addition, organizational websites, including WHO, CDC, OSHA, NIOSH, FEMA, IFRC, NFPA, OECD, and OPCW, were searched to find gray literature. Studies were selected using the PRISMA checklist, and thematic analysis was used to analyze the findings.

RESULTS: Finally, of 8193 selected records, 16 papers were included in the final analysis. Using thematic analysis, two main themes, 15 categories, and 57 subcategories were revealed. The categories for management measures included Plans and guidelines, Communication and coordination, Risk management, Management of physical spaces and Sources of funding, and for technical measures were recognition of chemical release, incident scene management, personal protection, casualty management, ambulance equipment and drugs, decontamination, psychological support, supporting units, Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) ambulances, and training.

CONCLUSIONS: Due to the importance and extent of the effects of chemical hazards, EMS systems need to develop their preparedness using more specific approaches to provide medical services in chemical hazards. EMS systems should provide medical equipment and antidotes, chemical ambulances, chemical protective equipment, and necessary physical

spaces with appropriate financing. Also, preparedness and response plans should be prepared and practiced regularly based on previous lessons learned and with the cooperation and participation of other organizations involved in chemical disasters.

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PMCID: PMC11827237

PMID: 39948462 [Indexed for MEDLINE]

3. Prehosp Emerg Care. 2025 Feb 21:1-9. doi: 10.1080/10903127.2025.2465712.

Interventions Targeting Resistance and Resilience Among Emergency Medical Service Clinicians: A Systematic Review.

Saldanha IJ(1), Zhang A(2), Everly GS Jr(3), Roemer EC(4), Hsu EB(5), Han G(2), Sharma R(2), Asenso E Jr(6), Bidmead D(7), Bass EB(7), Jenkins JL(5).

OBJECTIVES: To systematically review the effectiveness and harms of interventions to promote resistance and resilience regarding mental health and occupational stress issues among emergency medical service (EMS) clinicians.

METHODS: We registered the systematic review prospectively on PROSPERO (CRD42023465325). We searched Medline, Embase, CENTRAL, CINAHL, ClinicalTrials.gov, journals, and websites for studies published from January 1, 2001, through June 30, 2024. We conducted duplicate screening of titles and abstracts followed by full texts of potentially relevant abstracts. We included studies of EMS clinicians in high-income countries that evaluated interventions targeting resistance or resilience regarding mental health or occupational stress issues. We assessed the risk of bias and evaluated strength of evidence (SoE) using standard methods.

RESULTS: We included seven studies (one randomized controlled trial, one controlled trial with a waitlist control, four pre-post studies, and one prospective cohort [single group] study) that evaluated a total of 425 EMS clinicians. We deemed five of the seven studies to have high risk of bias, one moderate risk, and one low risk. No meta-analysis was feasible because of heterogeneity in the interventions evaluated across studies. Mindfulness-building interventions targeting resistance and resilience among EMS clinicians were associated with reduced burnout at up to 6 months of follow-up (low SoE). The evidence was insufficient regarding the impacts of interventions targeting both resistance and resilience on anxiety and depression. No conclusions are possible for resistance-only or resilience-only interventions. No studies reported on the effectiveness of any interventions in reducing hospitalizations,

post-traumatic stress disorder, substance use, suicidality, or withdrawals from the workforce. No studies reported on unintended harms of interventions.

CONCLUSIONS: Given the sparse evidence identified in this systematic review, evidence-based options to improve mental health outcomes for EMS clinicians are very limited. Future research is urgently needed to inform strategies to address the many mental health and occupational stress issues that face the EMS clinician workforce.

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PMID: 39937104

4. Cureus. 2025 Feb 3;17(2):e78420. doi: 10.7759/cureus.78420. eCollection 2025 Feb.

Global Awareness and Response to Early Symptoms of Acute Stroke: A Systematic Literature Review.

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Stroke is a condition that leaves persistent disability and causes high mortality worldwide. Knowledge of recognizing early symptoms along with awareness of immediate response to acute stroke among the general population has proven insufficient. Pre-attendance delays adversely affect the time window from symptoms onset to needle time, therefore the effect of recanalization treatments. Although 35% of patients are potentially eligible for these treatments such as intravenous thrombolysis only about about 8-10% of them manage to receive. The study aimed to investigate the association between knowledge of early symptoms in the general population and proper response to acute stroke through prompt activation of emergency medical services (EMS) independently of sociodemographic factors. A systematic review was conducted to identify relevant studies that assessed the general population's knowledge of early symptom recognition and awareness of immediate response to acute stroke. Two investigators reviewed articles published in the PubMed database, from December 1, 2023, to February 29, 2024. The search yielded a total of 340 articles. After the 340 articles were screened, 293 reports were excluded due to title and abstract, irrelevant studies, or when the full text was not available. Finally, a total of 10 articles were included in this systematic review. Out of ten studies included in this review, seven studies were conducted in Asia, in one study the origin continent is Oceania, while the remaining two studies come from America. All studies were designed and conducted as cross-sectional studies. The most commonly recognizable early symptoms of a stroke were found to be difficulty in speaking or understanding speech, weakness on one side of the body including the face, plus sudden

dizziness. Regarding responding to early stroke symptoms, the EMS call option gathered the most preferences of the respondents by 80%. Enlightenment campaigns are needed to highlight acute stroke symptoms unknown to the general public such as facial asymmetry.

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5. Resuscitation. 2025 Feb;207:110479. doi: 10.1016/j.resuscitation.2024.110479. Epub 2024 Dec 29.

Maternal and neonatal outcomes following resuscitative hysterotomy for out of hospital cardiac arrest: A systematic review.

Leech C(1), Nutbeam T(2), Chu J(3), Knight M(4), Hinshaw K(5), Appleyard TL(6), Cowan S(7), Couper K(8), Yeung J(8).

OBJECTIVE: To examine maternal and neonatal outcomes following Resuscitative Hysterotomy for out of hospital cardiac arrest (OHCA) and to compare with timing from cardiac arrest to delivery.

METHODS: The review was registered with PROSPERO (CRD42023445064). Studies included pregnant women with out of hospital cardiac arrest and resuscitative hysterotomy performed (in any setting) during cardiac arrest. We searched MEDLINE, EMBASE, and Cochrane Central Register of Controlled Trials (CENTRAL), from inception to 25th May 2024, restricted to humans. We included randomised controlled trials, observational studies, cases series or case reports. Two reviewers independently assessed study eligibility, extracted study data, and assessed risk of bias using validated tools. Data are summarised in a narrative synthesis.

RESULTS: We included 42 publications (one cohort study, three case series and 38 case reports) including a total of 66 women and 68 neonates. Maternal and newborn survival to hospital discharge was 4.5% and 45.0% respectively. The longest duration from collapse to resuscitative hysterotomy for maternal survival with normal neurological function was 29 min and for neonates was 47 min. There were reported neonatal survivors born at 26 weeks gestation with good outcomes. The certainty of evidence was very low due to risk of bias.

CONCLUSION: There are low rates of maternal survival following resuscitative hysterotomy for OHCA. There are documented neonatal survivors after extended periods of maternal

resuscitation, and at extremely preterm gestations (<28 weeks). Further prospective research should assess both maternal and neonatal outcomes to better inform future clinical practice.

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6. Am J Emerg Med. 2025 Feb;88:12-22. doi: 10.1016/j.ajem.2024.11.031. Epub 2024 Nov 17.

Initiation of buprenorphine in the emergency department or emergency out-of-hospital setting: A mixed-methods systematic review.

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INTRODUCTION: People who use substances increasingly access healthcare primarily through emergency medical services (EMS) and emergency departments (EDs). To meet the needs of these patients, EMS and EDs have become access points for medications for opioid use disorder (OUD), specifically buprenorphine. This systematic review aimed to quantify the efficacy of these programs, examining retention in treatment for OUD, rates of re-presentation to ED or EMS, and rates of precipitated withdrawal, as well as summarise clinician and patient perspectives on buprenorphine initiation in these settings.

METHODS: This review considered studies including patients with OUD receiving, and providers initiating, buprenorphine in an ED or EMS setting. A convergent, segregated approach to mixed-methods review was used as recommended by the Joanna Briggs Institute. A search was conducted of MEDLINE, CINAHL, EMBASE, and the Cochrane Library. Where relevant, meta-analyses of odds ratios and proportions were conducted.

FINDINGS: In both randomised (OR 5.97, 95 %CI 2.52-14.14, 227 participants, I2 16.93 %) and observational (OR 4.28, 95 %CI 2.45-7.48, 779 participants, I2 66.97 %) research, buprenorphine in the ED or EMS setting was associated with increased odds of treatment engagement at 30 days. Rates of retention in treatment varied across measured time points, from 77 % (95 %CI 74-80 %, 763 participants, I2 0.01 %) within 24 h, to 35 % (95 %CI 29-40 %) at 12 months. A low rate of precipitated withdrawal was reported (0.00 %, 95 %CI 0.00-1.00 %, 851 participants, I2 0.00 %). Clinicians and patients were generally supportive of ED-initiated buprenorphine, while identifying the initiation buprenorphine as one component of a longitudinal care path for people with OUD. Patients valued clinicians engaging in shared decision-making, while clinicians identified the environment of the ED often made this challenging.

CONCLUSION: The initiation of buprenorphine in the ED setting is associated with higher odds of short and medium-term treatment engagement. Further research is required into EMS-initiated buprenorphine, as well as patient perspectives of ED- and EMS-initiated buprenorphine.

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