Journal report – prosinec 2023

OBSAH

PREHOSPITAL CARE

– clinical trials & RCT

1: Bouzid W, Tavassoli N, Berbon C, Qassemi S, Vaysset S, Poly M, Bounes V, Shourick J, Nourhashémi F. Exploring Population Characteristics and Recruitment Challenges in Older People Experiencing Falls at Home without Hospitalization or with an Emergency Department Visit: Insights from the RISING-DOM Experience. Clin Interv Aging. 2023 Dec 1;18:1995-2008. doi: 10.2147/CIA.S421053. PMID: 38058551; PMCID: PMC10697010.

2: Albagle A, Kohli MR, Kratchman SI, Lee SM, Karabucak B. Periapical healing following endodontic microsurgery with collagen-based bone-filling material: A randomized controlled clinical trial. Int Endod J. 2023 Dec;56(12):1446-1458. doi: 10.1111/iej.13973. Epub 2023 Sep 11. PMID: 37695450.

PREHOSPITAL CARE

– systematic review & meta-analysis

1: Sarpourian F, Ahmadi Marzaleh M, Fatemi Aghda SA, Zare Z. Application of Telemedicine in the Ambulance for Stroke Patients: A Systematic Review. Prehosp Disaster Med. 2023 Dec;38(6):774-779. doi: 10.1017/S1049023X23006519. Epub 2023 Oct 25. PMID: 37877359.

2: Newport R, Grey C, Dicker B, Ameratunga S, Harwood M. Ethnic differences of the care pathway following an out-of-hospital cardiac event: A systematic review. Resuscitation. 2023 Dec;193:110017. doi: 10.1016/j.resuscitation.2023.110017. Epub 2023 Oct 27. PMID: 37890578.

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6: Shakir M, Altaf A, Irshad HA, Hussain N, Pirzada S, Tariq M, Trillo-Ordonez Y, Enam SA. Factors Delaying the Continuum of Care for the Management of Traumatic Brain Injury in Low- and Middle-Income Countries: A Systematic Review. World Neurosurg. 2023 Dec;180:169-193.e3. doi: 10.1016/j.wneu.2023.09.007. Epub 2023 Sep 7. PMID: 37689356.

7: Dixon M, Appleton JP, Siriwardena AN, Williams J, Bath PM. A systematic review of ambulance service-based randomised controlled trials in stroke. Neurol Sci. 2023 Dec;44(12):4363-4378. doi: 10.1007/s10072-023-06910-w. Epub 2023 Jul 5. PMID: 37405524; PMCID: PMC10641071.

HOSPITAL CARE

– clinical trials & RCT

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9: Bouzid W, Tavassoli N, Berbon C, Qassemi S, Vaysset S, Poly M, Bounes V, Shourick J, Nourhashémi F. Exploring Population Characteristics and Recruitment Challenges in Older People Experiencing Falls at Home without Hospitalization or with an Emergency Department Visit: Insights from the RISING-DOM Experience. Clin Interv Aging. 2023 Dec 1;18:1995-2008. doi: 10.2147/CIA.S421053. PMID: 38058551; PMCID: PMC10697010.

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17: Temte JL, Checovich MM, Barlow S, Shult PA, Reisdorf E, Haupt TE, Hamrick I, Mundt MP. Rapid Detection of Influenza Outbreaks in Long-Term Care Facilities Reduces Emergency Room Visits and Hospitalization: A Randomized Trial. J Am Med Dir Assoc. 2023 Dec;24(12):1904-1909. doi: 10.1016/j.jamda.2023.05.035. Epub 2023 Jul 5. PMID: 37421970.

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HOSPITAL CARE

– systematic review & meta-analysis

1: Piliuk K, Tomforde S. Artificial intelligence in emergency medicine. A systematic literature review. Int J Med Inform. 2023 Dec;180:105274. doi: 10.1016/j.ijmedinf.2023.105274. Epub 2023 Oct 31. PMID: 37944275.

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8: Hayba N, Cheek C, Austin E, Testa L, Richardson L, Safi M, Ransolin N, Carrigan A, Harrison R, Francis-Auton E, Clay-Williams R. Strategies to Improve Care in the Emergency Department for Culturally and Linguistically Diverse Adults: a Systematic Review. J Racial Ethn Health Disparities. 2023 Dec 20. doi: 10.1007/s40615-023-01876-z. Epub ahead of print. PMID: 38117444.

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10: Sarpourian F, Ahmadi Marzaleh M, Fatemi Aghda SA, Zare Z. Application of Telemedicine in the Ambulance for Stroke Patients: A Systematic Review. Prehosp Disaster Med. 2023 Dec;38(6):774-779. doi: 10.1017/S1049023X23006519. Epub 2023 Oct 25. PMID: 37877359.

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25: Hagan SR, Crilly J, Ranse J. Alcohol-Related Presentations to Emergency Departments on Days with Holidays, Social, and Sporting Events: An Integrative Literature Review. Prehosp Disaster Med. 2023 Dec;38(6):764-773. doi: 10.1017/S1049023X23006507. Epub 2023 Oct 25. PMID: 37877224; PMCID: PMC10694469.

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Journal report – prosinec 2023

PREHOSPITAL CARE

– clinical trials & RCT –

1. Clin Interv Aging. 2023 Dec 1;18:1995-2008. doi: 10.2147/CIA.S421053. eCollection 2023.

Exploring Population Characteristics and Recruitment Challenges in Older People Experiencing Falls at Home without Hospitalization or with an Emergency Department Visit: Insights from the RISING-DOM Experience.

Bouzid W(1)(2), Tavassoli N(1), Berbon C(1), Qassemi S(1), Vaysset S(1), Poly M(1), Bounes V(3), Shourick J(4)(5), Nourhashémi F(1)(5).

BACKGROUND: An increasing number of falls among community-living older adults are reported in emergency calls. Data on evidence of appropriate fall prevention interventions are limited and challenges in recruiting this population in randomized trials are acknowledged.

PURPOSE: The main aim of this study was to provide demographic data, circumstance and fall-related outcomes of the population in the RISING-DOM study [Impact d'une évaluation des facteurs de RISque de chute et d'une prise en charge personnalisée, sur la mortalité et l'institutionnalisation, après INtervention du SAMU chez la personne âGée à DOMicile], a multicenter, randomized interventional trial involving community-dwelling older adults who have experienced a fall at home and were not hospitalized. Additionally, the challenges of remote recruitment in this population were discussed.

PATIENTS AND METHODS: Participants were identified through the Occitania Emergency Observatory database. Participant recruitment and data collection were performed through telephone interviews (October 2019-March 2022). Additionally, a sample survey of Emergency Medical Services calls was carried out.

RESULTS: Out of the 1151 individuals screened, a total of 951 participants were included in the trial follow-up, resulting in an acceptance rate of 82.62%. The screening delay was extended due to the COVID-19 pandemic. Recruiting difficulties were mainly related to identifying potential participants, unavailable contact information and unreachability. Participants' mean age was 84.1 years, 65.8% were women, and 44.3% lived alone. Pain was the most frequent outcome (53%). In the previous year, 73.5% of participants reported experiencing a fall, with 66.7% of those falls requiring assistance from Emergency Medical Services (EMS). Nearly, 40% did not take proactive steps to prevent future falls and walking aids (79.8%) were the most common preventive action.

CONCLUSION: Indicators of a high-risk group of falls have been identified underscoring the need for appropriate fall interventions in the target population. Challenges of large sampling for randomized fall prevention trials were provided.

TRIAL REGISTRATION: Clinicaltrials.gov identifier: NCT04132544. Registration date: 18/10/2019. https://www.clinicaltrials.gov/ct2/show/NCT04132544?term=rising-dom&draw=2&rank=1.

DOI: 10.2147/CIA.S421053

PMCID: PMC10697010

PMID: 38058551 [Indexed for MEDLINE]

2. Am J Emerg Med. 2023 Dec;74:9-13. doi: 10.1016/j.ajem.2023.08.039. Epub 2023 Aug 28.

Comparison of chest compression quality between the overlapping hands and interlocking hands techniques: A randomised cross-over trial.

Marquis A(1), Douillet D(2), Morin F(3), Chauvat D(4), Sechet A(4), Lacour H(4),

Poiroux L(5), Savary D(6).

BACKGROUND: Performing quality chest compressions is fundamental to the management of cardiopulmonary arrest. The aim of this study was to compare the efficacy of two hand positions: overlapping versus interlocking for performing chest compressions during cardiopulmonary arrest.

METHODS: The HP2C (for Hands Position and Chest Compression) was a prospective, randomised, open-label, cross-over, single-centre study. Participants were recruited from the Emergency Medical Service (EMS) teams and the prehospital firefighter teams. They were randomised to start chest compressions either with overlapping or interlocking hands and then performed the other technique after a washout period. The judgement criteria were the overall chest compressions success score generated by software in accordance with ILCOR recommendations, the quality of compression, release, rate and subjective intensity measured with the Borg scale.

RESULTS: A total of 100 participants were included in the study. The mean age of the caregivers was 38 ± 9.3 years. The median CPR score was 79.5% IQR [48.5-94.0] in the overlapping hands group and 71% IQR [38.0-92.8] in the interlocking hands group (p-value = 0.37). There was no significant difference for the other criteria, especially no difference in term of intensity of effort. However, there was a trend towards better results with overlapping hands.

CONCLUSIONS: This study failed to demonstrate a difference in effectiveness between overlapping and interlocking hand chest compressions during cardiopulmonary resuscitation.

DOI: 10.1016/j.ajem.2023.08.039

PMID: 37729735 [Indexed for MEDLINE]

PREHOSPITAL CARE

– systematic review & meta-analysis –

1. Prehosp Disaster Med. 2023 Dec;38(6):774-779. doi: 10.1017/S1049023X23006519. Epub 2023 Oct 25.

Application of Telemedicine in the Ambulance for Stroke Patients: A Systematic Review.

Sarpourian F(1), Ahmadi Marzaleh M(2), Fatemi Aghda SA(3), Zare Z(4).

INTRODUCTION: The use of telemedicine for the prehospital management of emergency conditions, especially stroke, is increasing day by day. Few studies have investigated the applications of telemedicine in Emergency Medical Services (EMS). A comprehensive study of the applications of this technology in stroke patients in ambulances can help to build a better understanding. Therefore, this systematic review was conducted to investigate the use of telemedicine in ambulances for stroke patients in 2023.

METHODS: A systematic search was conducted in PubMed, Cochrane, Scopus, ProQuest, Science Direct, and Web of Science from 2013 through March 1, 2023. The authors selected the articles based on keywords and criteria and reviewed them in terms of title, abstract, and full text. Finally, the articles that were related to the study aim were evaluated.

RESULTS: The initial search resulted in the extraction of 2,795 articles. After review of the articles, and applying the inclusion and exclusion criteria, seven articles were selected for the final analysis. Three (42.85%) studies were on the feasibility and intervention types. Also, randomized trials, feasibility, feasibility and prospective-observational, and feasibility and retrospective-interventional studies were each one (14.28%). Six (85.71%) of the studies were conducted in the United States. The National Institutes of Health Stroke Scale (NIHSS) and RP-Xpress were the most commonly used tools for neurological evaluations and teleconsultations.

CONCLUSION: Remote prehospital consultations, triage, and sending patient data before they go to the emergency department can be provided through telemedicine in ambulances. Neurological evaluations via telemedicine are reliable and accurate, and they are almost equal to in-person evaluations by a neurologist.

DOI: 10.1017/S1049023X23006519

PMID: 37877359 [Indexed for MEDLINE]

2. Resuscitation. 2023 Dec;193:110017. doi: 10.1016/j.resuscitation.2023.110017. Epub 2023 Oct 27.

Ethnic differences of the care pathway following an out-of-hospital cardiac event: A systematic review.

Newport R(1), Grey C(2), Dicker B(3), Ameratunga S(4), Harwood M(5).

AIM: This systematic review aimed to determine to what extent and why the care pathways for acute cardiac events in the community might differ for minoritised ethnic populations compared to non-minoritised populations. It also sought to identify the barriers and enablers that could influence variations in access to care for minoritised populations.

METHODS: A multi-database search was conducted for articles published between 1 January 2000 and 1 January 2023. A combination of MeSH terms and keywords was used. Inclusion criteria for papers were published in English, adult population, the primary health condition was an acute cardiac event, and the primary outcomes were disaggregated by ethnicity or

race. A narrative review of extracted data was performed, and findings were reported according to the PRISMA 2020 guidelines.

RESULTS: Of the 3552 articles identified using the search strategy, 40 were deemed eligible for the review. Studies identified a range of variables in the care pathway that differed by ethnicity or race. These could be grouped as time to care, transportation, event related-variables, EMS interactions and symptoms. A meta-analysis was not performed due to heterogeneity across the studies.

CONCLUSION: The extent and reasons for differences in cardiac care pathways are considerable. There are several remediable barriers and enablers that require attention to achieve equitable access to care for minoritised populations.

DOI: 10.1016/j.resuscitation.2023.110017

PMID: 37890578 [Indexed for MEDLINE]

3. Prehosp Disaster Med. 2023 Dec 4:1-7. doi: 10.1017/S1049023X23006623.

The Effectiveness of Prehospital Subcutaneous Continuous Lactate Monitoring in Adult Trauma: A Systematic Review.

Scriven JW(1)(2), Battaloglu E(2)(3).

INTRODUCTION: Existing diagnostics for polytrauma patients continue to rely on non-invasive monitoring techniques with limited sensitivity and specificity for critically unwell patients. Lactate is a known diagnostic and prognostic marker used in infection and trauma and has been associated with mortality, need for surgery, and organ dysfunction. Point-of-care (POC) testing allows for the periodic assessment of lactate levels; however, there is an associated expense and equipment burden associated with repeated sampling, with limited feasibility in prehospital care. Subcutaneous lactate monitoring has the potential to provide a dynamic assessment of physiological lactate levels and utilize these trends to guide management and response to given treatments.

STUDY OBJECTIVE: The aim of this study was to appraise the current literature on dynamic subcutaneous continuous lactate monitoring (SCLM) in adult trauma patients and its use in lactate-guided therapy in the prehospital environment.

METHODS: The systematic review was conducted in accordance with the PRISMA guidelines and registered with PROSPERO. Searched databases included PubMed, EMBASE via Ovid SP, Cochrane Library, and Web of Science. Databases were searched from inception to March 29, 2022. Relevant manuscripts were further scrutinized for reference citations to interrogate the fullness of the adjacent literature.

RESULTS: Searches returned 600 studies, including 551 unique manuscripts. Following title and abstract screening, 14 manuscripts met the threshold for full-text sourcing. Subsequent to the scrutiny of all 14 manuscripts, none fully met the specified eligibility criteria. Following careful

examination, no article was found to cover the exact area of scientific inquiry due to disparity in technological or environmental characteristics.

CONCLUSION: Little is known about the utility of dynamic subcutaneous lactate monitoring, and this review highlights a clear gap in current literature. Novel subcutaneous lactate monitors are in development, and the literature describing the prototype experimentation has been summarized. These studies demonstrate device accuracy, which shows a close correlation with venous lactate while providing dynamic readings without significant lag times. Their availability and cost remain barriers to implementation at present. This represents a clear target for future feasibility studies to be conducted into the clinical use of dynamic subcutaneous lactate monitoring in trauma and resuscitation.

DOI: 10.1017/S1049023X23006623

PMID: 38047359

4. Resusc Plus. 2023 Oct 7;16:100482. doi: 10.1016/j.resplu.2023.100482. eCollection 2023 Dec.

Expedited transport versus continued on-scene resuscitation for refractory out-of-hospital cardiac arrest: A systematic review and meta-analysis.

Burns B(1)(2), Hsu HR(1)(3), Keech A(1)(4), Huang Y(3), Tian DH(5)(6)(7), Coggins A(1)(3), Dennis M(1)(4).

BACKGROUND: The benefit of rapid transport from the scene to definitive in-hospital care versus extended on-scene resuscitation in out-of-Hospital Cardiac Arrest (OHCA) is uncertain.

AIM: To assess the use of expedited transport from the scene of OHCA compared with more extended on-scene resuscitation of out-of-hospital cardiac arrest in adults.

METHODS: A systematic search of the literature was conducted using MEDLINE, Embase, and SCOPUS. Randomised control trials (RCTs) and observational studies were included. Studies reporting transport timing for OHCA patients with outcome data on survival were identified and reviewed. Two investigators assessed studies identified by screening for relevance and assessed bias using the ROBINS-I tool. Studies with non-dichotomous timing data or an absence of comparator group(s) were excluded. Outcomes of interest included survival and favourable neurological outcome. Survival to discharge and favourable neurological outcome were meta-analysed using a random-effects model.

RESULTS: Nine studies (eight cohort studies, one RCT) met eligibility criteria and were considered suitable for meta-analysis. On pooled analysis, expedited (or earlier) transfer was not predictive of survival to discharge (odds ratio [OR] 1.16, 95% confidence interval [CI] 0.53 to 2.53, I2 = 99%, p = 0. 65) or favorable neurological outcome (OR 1.06, 95% CI 0.48 to 2.37, I2 = 99%, p = 0.85). The certainty of evidence across studies was assessed as very low with a moderate risk of bias. Region of publication was noted to be a major contributor to the significant heterogeneity observed amongst included studies.

CONCLUSIONS: There is inconclusive evidence to support or refute the use of expedited transport of refractory OHCA.

DOI: 10.1016/j.resplu.2023.100482

PMCID: PMC10563056

PMID: 37822456

5. Resuscitation. 2023 Dec;193:109974. doi: 10.1016/j.resuscitation.2023.109974. Epub 2023 Oct 16.

Resuscitation of out-of-hospital cardiac arrest in China: A systematic review and Utstein-style data analysis based on the Chain of Survival.

Hou L(1), Wang Y(2), Chen B(3), Ji Y(3), Wang B(3).

AIM: Out-of-hospital cardiac arrest (OHCA) contributes to substantial mortality, but its resuscitation status in China is unknown. We aimed to describe and analyze out-of-hospital cardiac arrest in terms of Chain of Survival.

METHODS: We systematically collected Utstein-style publications. Scenarios were prespecified, including either emergency medical service (EMS) assessing and attending cardiac arrest, resuscitation attempted by a bystander, resuscitation attempted by EMS, or in-hospital treatment. Random-effect models were used in a meta-analysis to pool rate ratios (RRs) with 95% confidence intervals (CIs) from multiple cohorts.

RESULTS: We analyzed 59 Chains involving 233,376 Chinese patients. The median rate of survival to discharge (interquartile range) was 0.35 % (0.06 %-0.61 %), 3.66 % (3.06 %-3.85 %), 1.23 % (0.57%-1.36%), and 2.73% (2.04%-3.42%) for four scenarios. The rate was significantly higher for bystander resuscitation than for EMS (P = 0.025) or in-hospital treatment (P = 0.301). However, only 4.8 % (1.6 %-8.2 %) of patients received bystander resuscitation, with no bystander defibrillation and a median response time of 9-15 minutes for EMS. Compared with controls without witnesses, arrest being witnessed and with bystander resuscitation increased rates of survival to discharge by 1.97 (I2 = 0, P for I2 = 0.583; pooled RR 2.97; 95% CI 1.47-6.02) and 6.79 (I2 = 0, P for I2 = 0.593; pooled RR 7.79; 95 % CI 3.40-17.84) times, following a markedly increasing trend.

CONCLUSIONS: A low probability of first aid at multiple points is linked to poor survival following OHCA. It is essential to strengthen front links in the Chain of Survival in China, including among witnesses, bystanders, and emergency response.

DOI: 10.1016/j.resuscitation.2023.109974

PMID: 37852596 [Indexed for MEDLINE]

6. World Neurosurg. 2023 Dec;180:169-193.e3. doi: 10.1016/j.wneu.2023.09.007. Epub 2023 Sep 7.

Factors Delaying the Continuum of Care for the Management of Traumatic Brain Injury in Low- and Middle-Income Countries: A Systematic Review.

Shakir M(1), Altaf A(2), Irshad HA(3), Hussain N(4), Pirzada S(3), Tariq M(5), Trillo-Ordonez Y(6), Enam SA(2).

BACKGROUND: Considering the disproportionate burden of delayed traumatic brain injury (TBI) management in low- and middle-income countries (LMICs), there is pressing demand for investigations. Therefore, our study aims to evaluate factors delaying the continuum of care for the management of TBIs in LMICs.

METHODS: A systematic review was conducted with PubMed, Scopus, Google Scholar and Cumulative Index to Nursing and Allied Health Literature (CINAHL). Observational studies with TBI patients in LMIC were included. The factors affecting management of TBI were extracted and analyzed descriptively.

RESULTS: A total of 55 articles were included consisting of 60,603 TBI cases from 18 LMICs. Road traffic accidents (58.7%) were the most common cause of injury. Among included studies, factors contributing to prehospital delays included a poor referral system and lack of an organized system of referral (14%), long travel distances (11%), inadequacy of emergency medical services (16.6%), and self-treatment practices (2.38%). For in-hospital delays, factors such as lack of trained physicians (10%), improper triage systems (20%), and absence of imaging protocols (10%), lack of in-house computed tomography scanners (35%), malfunctioning computed tomography scanners (10%), and a lack of invasive monitoring of intracranial pressure (5%), limited theater space (28%), lack of in-house neurosurgical facilities (28%), absence of in-house neurosurgeons (28%), and financial constraints (14%) were identified.

CONCLUSIONS: Several factors, both before and during hospitalization contribute to delays in the management of TBIs in LMICs. Strategically addressing these factors can help overcome delays and improve TBI management in LMICs.

DOI: 10.1016/j.wneu.2023.09.007

PMID: 37689356 [Indexed for MEDLINE]

7. Neurol Sci. 2023 Dec;44(12):4363-4378. doi: 10.1007/s10072-023-06910-w. Epub 2023 Jul 5.

A systematic review of ambulance service-based randomised controlled trials in stroke.

Dixon M(1)(2), Appleton JP(1)(3), Siriwardena AN(4), Williams J(5), Bath PM(6)(7).

BACKGROUND: Treatment for stroke is time-dependent, and ambulance services play a vital role in the early recognition, assessment and transportation of stroke patients. Innovations which begin in ambulance services to expedite delivery of treatments for stroke are developing. However, research delivery in ambulance services is novel, developing and not fully understood.

AIMS: To synthesise literature encompassing ambulance service-based randomised controlled interventions for acute stroke with consideration to the characteristics of the type of intervention, consent modality, time intervals and issues unique to research delivery in ambulance services. Online searches of

MEDLINE, EMBASE, Web of Science, CENTRAL and WHO IRCTP databases and hand searches identified 15 eligible studies from 538. Articles were heterogeneous in nature and meta-analysis was partially available as 13 studies reported key time intervals, but terminology varied. Randomised interventions were evident across all points of contact with ambulance services: identification of stroke during the call for help, higher dispatch priority assigned to stroke, on-scene assessment and clinical interventions, direct referral to comprehensive stroke centres and definitive care delivery at scene. Consent methods ranged between informed patient, waiver and proxy modalities with country-specific variation. Challenges unique to the prehospital setting comprise the geographical distribution of ambulance resources, low recruitment rates, prolonged recruitment phases, management of investigational medicinal product and incomplete datasets.

CONCLUSION: Research opportunities exist across all points of contact between stroke patients and ambulance services, but randomisation and consent remain novel. Early collaboration and engagement between trialists and ambulance services will alleviate some of the complexities reported.

REGISTRATION NUMBER: PROSPERO 2018CRD42018075803.

DOI: 10.1007/s10072-023-06910-w

PMCID: PMC10641071

PMID: 37405524 [Indexed for MEDLINE]

Journal report – prosinec 2023

HOSPITAL CARE

– clinical trials & RCT

1. Am J Manag Care. 2023 Dec;29(12):715-719. doi: 10.37765/ajmc.2023.89473.

Pharmacists and transitions of care from emergency department to home.

Dunn TE, Desai KJ, Krajewski MP, Jacobs DM, Lu CH(1), Paul S, Paladino JA.

OBJECTIVES: To determine the impact of a pharmacist-led telephone outreach program among patients discharged from the emergency department (ED) to home.STUDY DESIGN: We conducted a randomized controlled study from February to November 2019 at a tertiary care academic medical center.

METHODS: At ED discharge, participants were randomly assigned to usual care (controls) or usual care plus the pharmacist's review (intervention group). Eligible individuals included those being discharged from the ED to home with 8 or more medications. A pharmacist telephoned patients in the intervention group within 48 to 96 hours after ED discharge. The medications in the patient's record from the ED were compared with what the patient was taking at home. Discrepancies were communicated to the primary provider via fax or telephone. The primary outcome was overall health care utilization including unplanned hospital readmissions or ED visits within 30 days of discharge. The effect of the intervention on the number of acute events was analyzed using a Poisson regression model adjusting for relevant baseline characteristics.

RESULTS: Of 90 eligible participants, 45 patients each were in the intervention and control groups. A total of 26 patients (58%) in the intervention group were reached, and 56 interventions were provided by the pharmacists. There was no significant difference between groups for overall health care utilization (adjusted risk ratio [aRR], 1.01; 95% CI, 0.50-2.06; P = .96), hospitalizations (aRR, 0.20; 95% CI, 0.02-2.18; P = .19), and ED visits (aRR, 1.24; 95% CI, 0.56-2.79; P = .59).

CONCLUSIONS: A pharmacist-led telephone outreach program conducted after ED discharge was not associated with a change in health care utilization.

DOI: 10.37765/ajmc.2023.89473

PMID: 38170487 [Indexed for MEDLINE]

2. Am J Emerg Med. 2023 Dec;74:27-31. doi: 10.1016/j.ajem.2023.09.017. Epub 2023 Sep 20.

Association of substance use with outcomes in mildly ill COVID-19 outpatients.

Pobee R(1), Cable T(2), Chan D(3), Herrick J(4), Durkalski-Mauldin V(5), Korley F(6), Callaway C(7), Del Rios M(8).

BACKGROUND: Smoking, alcohol use, and non-prescription drug use are associated with worsened COVID-19 outcomes in hospitalized patients. Whether there is an association

between substance use and outcomes in patients with COVID-19 who visited the Emergency Department (ED) but did not require hospitalization has not been well established. We investigated whether smoking, alcohol, and non-prescription drug use were associated with worsened COVID-19 outcomes among such patients presenting to the ED.

METHODS: We conducted a secondary analysis of a clinical trial which sought to determine the effect of early convalescent plasma administration in patients presenting to the ED within 7 days of onset of mild COVID-19 symptoms. The study recruited 511 participants who were aged 50 years or older or had one or more risk factors for severe COVID-19. The primary outcome was disease progression within 15 days after randomization, which was defined as a composite of hospital admission for any reason, seeking emergency or urgent care, or death without hospitalization. Secondary outcomes included: no hospitalization within 30 days post-randomization, symptom worsening on the 5-category COVID-19 outpatient ordinal scale within 15 days post-randomization, and all-cause mortality. Substance use was categorized into either use or never use based on participant self-report. Logistic regression models were used to determine the association between substance use and outcomes.

RESULTS: The mean age of the 511 patients enrolled was 52 years and the majority were females (274, 54%). Approximately 213 (42%) were non-Hispanic Whites, 156 (30%) Hispanics, 100 (20%) non-Hispanic Blacks, 18 (4%) non-Hispanic Asian, 8 (1%) American Indian Alaskan, and 16 (3%) unknown race. Tobacco 152 (30%) was the most common substance use reported. Alcohol use 36 (7%) and non-prescription drug use 33 (6%) were less common. Tobacco use and non-prescription drug use were associated with an increased risk for meeting the primary outcome ((tobacco: adjusted odds ratio [aOR] =2.08; 95% confidence interval [CI]: 1.37-3.15) and (drug: aOR =2.41; 95%CI: 1.17-5.00)) and increased risk for symptom worsening on the 5-category COVID-19 outpatient scale ((tobacco: aOR = 1.62; 95%CI: 1.09-2.42) and (drug: aOR = 2.32 95% CI: 1.10-4.87)) compared to non-use after adjusting for age, sex, plasma administration, and comorbidity.

CONCLUSION: Tobacco and non-prescription drug use but not alcohol use were associated with worsened COVID-19 outcomes in patients who did not require hospitalization on their initial presentation. Future studies should determine the quantity, duration, and type of drug/tobacco use that may worsen COVID-19.

DOI: 10.1016/j.ajem.2023.09.017

PMID: 37748266 [Indexed for MEDLINE]

3. Am J Emerg Med. 2023 Dec;74:49-56. doi: 10.1016/j.ajem.2023.09.018. Epub 2023 Sep 23.

Mono- and bi-plane sonographic approach for difficult accesses in the emergency department - A randomized trial.

Baion DE(1), La Ferrara A(1), Maserin D(1), Caprioli S(1), Albano R(2), Malara F(1), Locascio F(1), Galluzzo E(1), Luison D(1), Lombardo M(1), Navarra R(1), Calzolari G(3), Tizzani M(3), Prisciandaro I(1), Morello F(4), Tuttolomondo P(5), Goffi A(6), Lupia E(4), Pivetta E(7).

BACKGROUND: The insertion of peripheral intravenous (PIV) catheters is one of the most performed invasive procedures in acute healthcare settings. However, peripheral difficult vascular access (PDVA) is not uncommon and can lead to delays in administering essential medications. Ultrasound (US) has emerged as a valuable tool for facilitating PIV cannulation. Advancements in technology have introduced a technique known as bi-plane imaging, allowing the simultaneous display of both longitudinal and transverse views of vessels. We aimed to investigate whether the utilization of bi-plane imaging, as opposed to the single-plane approach, would yield superior results for PDVA in the emergency department (ED).

METHODS: This study was a single-center randomized controlled trial. We included adult patients admitted to the ED who required PIV cannulation. Patients were randomly assigned to undergo cannulation using either the mono-plane or bi-plane approach, both performed by skilled providers. The primary outcome of the study was to compare the first attempt success rates between the two techniques.

RESULTS: A total of 442 patients were enrolled, with 221 undergoing cannulation attempts using the mono-plane approach. Successful placement of a functioning PIV catheter was achieved in a single attempt for 313 out of 442 patients (70.8%). There was no significant difference in the success rates between the two study groups: 68.3% in the mono-plane group and 73.3% in the bi-plane group (p = 0.395). The median time required for a successful attempt differed between the groups, with 45 s (range 18-600) in the mono-plane group and 35 s (range 20-600) in the bi-plane group (p = 0.03).

CONCLUSIONS: Our study confirms that US is a highly effective tool for facilitating PIV cannulation in patients with PDVA presenting to the ED. However, our investigation into the use of bi-plane imaging did not reveal a significant improvement when compared to mono-plane imaging.

DOI: 10.1016/j.ajem.2023.09.018

PMID: 37774550 [Indexed for MEDLINE]

4. Intensive Care Med. 2023 Dec;49(12):1499-1507. doi: 10.1007/s00134-023-07244-z. Epub 2023 Oct 31.

Inflammatory subphenotypes in patients at risk of ARDS: evidence from the LIPS-A trial.

Redaelli S(#)(1)(2)(3), von Wedel D(#)(1)(2), Fosset M(1)(2)(4)(5), Suleiman A(1)(2)(6), Chen G(1)(2), Alingrin J(7), Gong MN(8), Gajic O(9), Goodspeed V(1)(2), Talmor D(1), Schaefer MS(10)(11)(12), Jung B(1)(2)(4)(13).

PURPOSE: Latent class analysis (LCA) has identified hyper- and non-hyper-inflammatory subphenotypes in patients with acute respiratory distress syndrome (ARDS). It is unknown how early inflammatory subphenotypes can be identified in patients at risk of ARDS. We aimed to test for inflammatory subphenotypes upon presentation to the emergency department.

METHODS: LIPS-A was a trial of aspirin to prevent ARDS in at-risk patients presenting to the emergency department. In this secondary analysis, we performed LCA using clinical, blood test, and biomarker variables.

RESULTS: Among 376 (96.4%) patients from the LIPS-A trial, two classes were identified upon presentation to the emergency department (day 0): 72 (19.1%) patients demonstrated characteristics of a hyper-inflammatory and 304 (80.9%) of a non-hyper-inflammatory subphenotype. 15.3% of patients in the hyper- and 8.2% in the non-hyper-inflammatory class developed ARDS ($p = 0.07$). Patients in the hyper-inflammatory class had fewer ventilator-free days (median [interquartile range, IQR] 28[23-28] versus 28[27-28]; $p = 0.010$), longer intensive care unit (3[2-6] versus 0[0-3] days; $p < 0.001$) and hospital (9[6-18] versus 5[3-9] days; $p < 0.001$) length of stay, and higher 1-year mortality (34.7% versus 20%; $p = 0.008$). Subphenotypes were identified on day 1 and 4 in a subgroup with available data ($n = 244$). 77.9% of patients remained in their baseline class throughout day 4. Patients with a hyper-inflammatory subphenotype throughout the study period ($n = 22$) were at higher risk of ARDS (36.4% versus 10.4%; $p = 0.003$).

CONCLUSION: Hyper- and non-hyper-inflammatory subphenotypes may precede ARDS development, remain identifiable over time, and can be identified upon presentation to the emergency department. A hyper-inflammatory subphenotype predicts worse outcomes.

DOI: 10.1007/s00134-023-07244-z

PMID: 37906258 [Indexed for MEDLINE]

5. Emerg Med J. 2023 Dec 22;41(1):51-59. doi: 10.1136/emermed-2022-212908.

Impact on all-cause mortality of a case prediction and prevention intervention designed to reduce secondary care utilisation: findings from a randomised controlled trial.

Bull LM(1), Arendarczyk B(2), Reis S(2), Nguyen A(3), Werr J(4), Lovegrove-Bacon T(5), Stone M(6), Sherlaw-Johnson C(7).

BACKGROUND: Health coaching services could help to reduce emergency healthcare utilisation for patients targeted proactively by a clinical prediction model (CPM) predicting patient likelihood of future hospitalisations. Such interventions are designed to empower patients to confidently manage their own health and effectively utilise wider resources. Using CPMs to identify patients, rather than prespecified criteria, accommodates for the dynamic hospital user population and for sufficient time to provide preventative support. However, it is unclear how this care model would negatively impact survival.

METHODS: Emergency Department (ED) attenders and hospital inpatients between 2015 and 2019 were automatically screened for their risk of hospitalisation within 6 months of discharge using a locally trained CPM on routine data. Those considered at risk and screened as suitable for the intervention were contacted for consent and randomised to one-to-one telephone health coaching for 4-6 months, led by registered health professionals, or routine care with no contact after randomisation. The intervention involved motivational guidance, support for self-care, health education, and coordination of social and medical services. Co-primary outcomes were emergency hospitalisation and ED attendances, which will be reported separately. Mortality at 24 months was a safety endpoint.

RESULTS: Analysis among 1688 consented participants (35% invitation rate from the CPM, median age 75 years, 52% female, 1139 intervention, 549 control) suggested no significant difference in overall mortality between treatment groups (HR (95% CI): 0.82 (0.62, 1.08), pr(HR<1=0.92), but did suggest a significantly lower mortality in men aged >75 years (HR (95% CI): 0.57 (0.37, 0.84), number needed to treat=8). Excluding one site unable to adopt a CPM indicated stronger impact for this patient subgroup (HR (95% CI): 0.45 (0.26, 0.76)).

CONCLUSIONS: Early mortality in men aged >75 years may be reduced by supporting individuals at risk of unplanned hospitalisation with a clear outreach, out-of-hospital nurse-led, telephone-based coaching care model.

DOI: 10.1136/emermed-2022-212908

PMID: 37827821 [Indexed for MEDLINE]

6. Open Heart. 2023 Dec 7;10(2):e002371. doi: 10.1136/openhrt-2023-002371.

Heart failure management at home: a non-randomised prospective case-controlled trial (HeMan at Home).

Helberg J(1), Bensimhon D(2), Katsadouros V(3), Schmerge M(4)(4), Smith H(4), Peck K(5), Williams K(4), Winfrey W(3), Nanavati A(2), Knapp J(2), Schmidt M(2), Curran L(2), McCarthy M(2), Sawulski M(2), Harbrecht L(3), Santos I(3), Masoudi E(3), Narendra N(3).

BACKGROUND/OBJECTIVES: Heart failure (HF) is a growing clinical and economic burden for patients and health systems. The COVID-19 pandemic has led to avoidance and delay in care, resulting in increased morbidity and mortality among many patients with HF. The increasing burden of HF during the COVID-19 pandemic led us to evaluate the quality and safety of the

Hospital at Home (HAH) for patients presenting to their community providers or emergency department (ED) with symptoms of acute on chronic HF (CHF) requiring admission.

DESIGN/OUTCOMES: A non-randomised prospective case-controlled of patients enrolled in the HAH versus admission to the hospital (usual care, UC). Primary outcomes included length of stay (LOS), adverse events, discharge disposition and patient satisfaction. Secondary outcomes included 30-day readmission rates, 30-day ED usage and ED dwell time.

RESULTS: Sixty patients met inclusion/exclusion criteria and were included in the study. Of the 60 patients, 40 were in the HAH and 20 were in the UC group. Primary outcomes demonstrated that HAH patients had slightly longer LOS (6.3 days vs 4.7 days); however, fewer adverse events (12.5% vs 35%) compared with the UC group. Those enrolled in the HAH programme were less likely to be discharged with postacute services (skilled nursing facility or home health). HAH was associated with increased patient satisfaction compared with Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) score in North Carolina. Secondary outcomes of 30-day readmission and ED usage were similar between HAH and UC.

CONCLUSIONS: The HAH pilot programme was shown to be a safe and effective alternative to hospitalisation for the appropriately selected patient presenting with acute on CHF.

DOI: 10.1136/openhrt-2023-002371

PMCID: PMC10711907

PMID: 38065589 [Indexed for MEDLINE]

7. Am J Transplant. 2023 Dec;23(12):1939-1948. doi: 10.1016/j.ajt.2023.08.004. Epub 2023 Aug 9.

Results of a multicenter cluster-randomized controlled clinical trial testing the effectiveness of a bioinformatics-enabled pharmacist intervention in transplant recipients.

Taber DJ(1), Ward RC(2), Buchanan CH(3), Axon RN(3), Milfred-LaForest S(4), Rife K(4), Felkner R(5), Cooney D(4), Super N(6), McClelland S(7), McKenna D(8), Santa E(9), Gebregziabher M(2).

An ambulatory medication safety dashboard was developed to identify missing labs, concerning labs, drug interactions, nonadherence, and transitions in care. This system was tested in a 2-year, prospective, cluster-randomized, controlled multicenter study. Pharmacists at 5 intervention sites used the dashboard to address medication safety issues, compared with usual care provided at 5 control sites. A total of 2196 transplant events were included (1300 intervention vs 896 control). During the 2-year study, the intervention arm had a 11.3% (95% confidence interval, 7.1%-15.5%) absolute risk reduction of having ≥1 emergency department (ED) visit (44.2% vs 55.5%, respectively; P < .001, respectively) and a 12.3% (95% confidence interval, 8.2%-16.4%) absolute risk reduction of having ≥1 hospitalization (30.1% vs 42.4%, respectively; P < .001). In those with ≥1 event, the median ED visit rate (2 [interquartile range (IQR) 1, 5] vs 2 [IQR 1, 4]; P = .510) and hospitalization rate (2 [IQR 1, 3] vs 2 [IQR 1, 3]; P = .380) were similar. Treatment effect varied by comorbidity burden, previous ED visits or

hospitalizations, and heart or lung recipients. A bioinformatics dashboard-enabled, pharmacist-led intervention reduced the risk of having at least one ED visit or hospitalization, predominantly demonstrated in lower risk patients.

DOI: 10.1016/j.ajt.2023.08.004

PMID: 37562577 [Indexed for MEDLINE]

8. J Emerg Med. 2023 Dec;65(6):e563-e567. doi: 10.1016/j.jemermed.2023.05.018. Epub 2023 Jun 8.

Structured Cardiac Assessment Outperforms Visual Estimation in Novice Ultrasound Users: A Randomized Controlled Trial.

Berdnikov A(1), Roifman I(2), Tang E(3), Muhtaseb O(4), Chenkin J(5).

BACKGROUND: Two evidence-based techniques to determine left ventricular (LV) systolic function are taught in emergency medicine curricula. The first is a "structured approach," which qualitatively evaluates LV fractional shortening, E-point septal separation, and LV diameter. The other is the "eyeball method," which qualitatively estimates the LV ejection fraction (LVEF).

OBJECTIVE: The aim of this study was to determine whether the structured approach or the eyeball method was superior for teaching LVEF estimation to novices.

METHODS: Medical students were recruited to participate in our randomized controlled trial. Participants were randomized to the structured approach group or eyeball method group and completed one of two 15-min educational modules. Participants subsequently interpreted 12 echocardiogram clips to determine LV function. The primary outcome was the percentage of correct interpretations as determined by a cardiologist.

RESULTS: Seventy-four participants were invited to participate and 32 completed the study (15 in the structured approach and 17 in the eyeball method groups). The majority (30 of 32 [93.75%]) were first- and second-year medical students with no prior ultrasound training. The mean time to complete the training was similar between groups (16.8 vs. 17.8 min; $p = 0.66$). The primary outcome of percent of correct interpretations was significantly higher in the structured approach group compared with the eyeball method group (88.9% vs. 73.0%; $p < 0.01$).

CONCLUSIONS: Training novice ultrasound users in a structured qualitative LV assessment method was more effective than the eyeball method. Learners were able to achieve high accuracy after a brief training intervention. These results may help inform best practices for undergraduate ultrasound curriculum development.

DOI: 10.1016/j.jemermed.2023.05.018

PMID: 37838494 [Indexed for MEDLINE]

9. Clin Interv Aging. 2023 Dec 1;18:1995-2008. doi: 10.2147/CIA.S421053. eCollection 2023.

Exploring Population Characteristics and Recruitment Challenges in Older People Experiencing Falls at Home without Hospitalization or with an Emergency Department Visit: Insights from the RISING-DOM Experience.

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BACKGROUND: An increasing number of falls among community-living older adults are reported in emergency calls. Data on evidence of appropriate fall prevention interventions are limited and challenges in recruiting this population in randomized trials are acknowledged.

PURPOSE: The main aim of this study was to provide demographic data, circumstance and fall-related outcomes of the population in the RISING-DOM study [Impact d'une évaluation des facteurs de RISque de chute et d'une prise en charge personnalisée, sur la mortalité et l'institutionnalisation, après INtervention du SAMU chez la personne âGée à DOMicile], a multicenter, randomized interventional trial involving community-dwelling older adults who have experienced a fall at home and were not hospitalized. Additionally, the challenges of remote recruitment in this population were discussed.

PATIENTS AND METHODS: Participants were identified through the Occitania Emergency Observatory database. Participant recruitment and data collection were performed through telephone interviews (October 2019-March 2022). Additionally, a sample survey of Emergency Medical Services calls was carried out.

RESULTS: Out of the 1151 individuals screened, a total of 951 participants were included in the trial follow-up, resulting in an acceptance rate of 82.62%. The screening delay was extended due to the COVID-19 pandemic. Recruiting difficulties were mainly related to identifying potential participants, unavailable contact information and unreachability. Participants' mean age was 84.1 years, 65.8% were women, and 44.3% lived alone. Pain was the most frequent outcome (53%). In the previous year, 73.5% of participants reported experiencing a fall, with 66.7% of those falls requiring assistance from Emergency Medical Services (EMS). Nearly, 40% did not take proactive steps to prevent future falls and walking aids (79.8%) were the most common preventive action.

CONCLUSION: Indicators of a high-risk group of falls have been identified underscoring the need for appropriate fall interventions in the target population. Challenges of large sampling for randomized fall prevention trials were provided.

TRIAL REGISTRATION: Clinicaltrials.gov identifier: NCT04132544. Registration date: 18/10/2019. https://www.clinicaltrials.gov/ct2/show/NCT04132544?term=rising-dom&draw=2&rank=1.

DOI: 10.2147/CIA.S421053

PMCID: PMC10697010

PMID: 38058551 [Indexed for MEDLINE]

10. Scand Cardiovasc J. 2023 Dec;57(1):2272585. doi: 10.1080/14017431.2023.2272585. Epub 2023 Oct 31.

Aiming toWards Evidence baSed inTerpretation of Cardiac biOmarkers in patients pResenting with chest pain using Point of Care Testing (WESTCOR-POC): study design.

Thulin IVL(1), Jordalen SMF(1), Lekven OC(1)(2), Krishnapillai J(1)(2), Steiro OT(2), Collinson P(3)(4), Apple F(5)(6), Cullen L(7)(8)(9), Norekvål TM(2)(10), Wisløff T(11), Vikenes K(2)(10), Omland T(12)(13), Bjørneklett RO(1)(14), Aakre KM(2)(10)(15).

OBJECTIVES: Patients presenting with symptoms suggestive of acute coronary syndrome (ACS) contribute to a high workload and overcrowding in the Emergency Department (ED). Accelerated diagnostic protocols for non-ST-elevation myocardial infarction have proved challenging to implement. One obstacle is the turnaround time for analyzing high-sensitivity cardiac troponin (hs-cTn). In the WESTCOR-POC study (Clinical Trials number NCT05354804) we aim to evaluate safety and efficiency of a 0/1 h hs-cTn algorithm utilizing a hs-cTnI point of care (POC) instrument in comparison to central laboratory hs-cTnT measurements.

DESIGN: This is a prospective single-center randomized clinical trial aiming to include 1500 patients admitted to the ED with symptoms suggestive of ACS. Patients will receive standard investigations following the European Society of Cardiology 0/1h protocols for centralized hs-cTnT measurements or the intervention using a 0/1h POC hs-cTnI algorithm. Primary end-points are 1) Safety; death, myocardial infarction or acute revascularization within 30 days 2) Efficiency; length of stay in the ED, 3) Cost-effectiveness; total episode cost, 4) Patient satisfaction, 5) Patient symptom burden and 6) Patients quality of life. Secondary outcomes are 12-months death, myocardial infarction or acute revascularization, percentage discharged after 3 and 6 h, total length of hospital stay and all costs related to hospital contact within 12 months.

CONCLUSION: Results from this study may facilitate implementation of POC hs-cTn testing assays and accelerated diagnostic protocols in EDs, and may serve as a valuable resource for guiding future investigations for the use of POC high sensitivity troponin assays in outpatient clinics and prehospital settings.

DOI: 10.1080/14017431.2023.2272585

PMID: 37905548 [Indexed for MEDLINE]

11. Am J Kidney Dis. 2023 Dec;82(6):715-724. doi: 10.1053/j.ajkd.2023.05.004. Epub 2023 Jul 28.

Performance of Panel-Estimated GFR Among Hospitalized Older Adults.

Iversen E(1), Bengaard AK(2), Leegaard Andersen A(3), Tavenier J(3), Nielsen RL(3), Juul-Larsen HG(3), Jørgensen LM(4), Bornæs O(3), Jawad BN(5), Aharaz A(6), Walls AB(7), Kallemose T(3), Dalhoff K(8), Nehlin JO(3), Hornum M(9), Feldt-Rasmussen B(9), Damgaard M(10), Andersen O(11), Houlind MB(12).

Journal report – prosinec 2023

RATIONALE & OBJECTIVE: Older adults represent nearly half of all hospitalized patients and are vulnerable to inappropriate dosing of medications eliminated through the kidneys. However, few studies in this population have evaluated the performance of equations for estimating the glomerular filtration rate (GFR)-particularly those that incorporate multiple filtration markers.

STUDY DESIGN: Cross-sectional diagnostic test substudy of a randomized clinical trial.

SETTING & PARTICIPANTS: Adults≥65 years of age presenting to the emergency department of Copenhagen University Hospital Amager and Hvidovre in Hvidovre, Denmark, between October 2018 and April 2021.

TESTS COMPARED: Measured GFR (mGFR) determined using 99mTc-DTPA plasma clearance compared with estimated GFR (eGFR) calculated using 6 different equations based on creatinine; 3 based on creatinine and cystatin C combined; and 2 based on panels of markers including creatinine, cystatin C, β-trace protein (BTP) and/or β2-microglobulin (B2M).

OUTCOME: The performance of each eGFR equation compared with mGFR with respect to bias, relative bias, inaccuracy (1-P30), and root mean squared error (RMSE).

RESULTS: We assessed eGFR performance for 106 patients (58% female, median age 78.3 years, median mGFR 62.9mL/min/1.73m2). Among the creatinine-based equations, the 2009 CKD-EPIcr equation yielded the smallest relative bias (+4.2%). Among the creatinine-cystatin C combination equations, the 2021 CKD-EPIcomb equation yielded the smallest relative bias (-3.4%), inaccuracy (3.8%), and RMSE (0.139). Compared with the 2021 CKD-EPIcomb, the CKD-EPIpanel equation yielded a smaller RMSE (0.136) but larger relative bias (-4.0%) and inaccuracy (5.7%).

LIMITATIONS: Only White patients were included; only a subset of patients from the original clinical trial underwent GFR measurement; and filtration marker concentration can be affected by subclinical changes in volume status.

CONCLUSIONS: The 2009 CKD-EPIcr, 2021 CKD-EPIcomb, and CKD-EPIpanel equations performed best and notably outperformed their respective full-age spectrum equations. The addition of cystatin C to creatinine-based equations improved performance, while the addition of BTP and/or B2M yielded minimal improvement.

FUNDING: Grants from public sector industry (Amgros I/S) and government (Capital Region of Denmark). TRIAL REGISTRATION: Registered at ClinicalTrials.gov with registration number NCT03741283.

PLAIN-LANGUAGE SUMMARY: Inaccurate kidney function assessment can lead to medication errors, a common cause of hospitalization and early readmission among older adults. Several novel methods have been developed to estimate kidney function based on a panel of kidney function markers that can be measured from a single blood sample. We evaluated the accuracy of these new methods (relative to a gold standard method) among 106 hospitalized older adults. We found that kidney function estimates combining 2 markers (creatinine and cystatin C) were highly accurate and noticeably more accurate than estimates based on creatinine

alone. Estimates incorporating additional markers such as β-trace protein and β2-microglobulin did not further improve accuracy.

DOI: 10.1053/j.ajkd.2023.05.004

PMID: 37516299 [Indexed for MEDLINE]

12. BMC Health Serv Res. 2023 Dec 18;23(1):1429. doi: 10.1186/s12913-023-10384-z.

Implementation and evaluation of a nurse-led intervention to augment an existing residential aged care facility outreach service with a visual telehealth consultation: stepped-wedge cluster randomised controlled trial.

Sunner C(1)(2), Giles M(3)(4), Ball J(3), Barker R(3), Hullick C(3)(4), Oldmeadow C(5), Foureur M(3)(4).

BACKGROUND: Up to 75% of residents from residential aged care facilities (RACF) are transferred to emergency departments (ED) annually to access assessment and care for unplanned or acute health events. Emergency department presentations of RACF residents can be both expensive and risky, and many are unnecessary and preventable. Processes or triage systems to assess residents with a health event, prior to transfer, may reduce unnecessary ED transfer. The Aged Care Emergency (ACE) service is a nurse-led ED outreach service that provides telephone support to RACF nurses regarding residents' health events. This service is available Monday to Friday, 8am to 4 pm (ED ACE hours). The primary objective of this study was to assess whether the augmentation of the phone-based ED ACE service with the addition of a visual telehealth consultation (VTC) would reduce RACF rate of ED presentations compared to usual care. The secondary objectives were to 1) monitor presentations to ED within 48 h post VTC to detect any adverse events and 2) measure RACF staff perceptions of VTC useability and acceptability.

METHODS: This implementation study used a stepped wedge cluster randomised controlled trial design. Study settings were four public hospital EDs and 16 RACFs in two Local Health Districts. Each ED was linked to 4 RACFs with approximately 350 RACF beds, totalling 1435 beds across 16 participating RACFs. Facilities were randomised into eight clusters with each cluster comprising one ED and two RACFs.

RESULTS: A negative binomial regression demonstrated a 29% post-implementation reduction in the rate of ED presentations (per 100 RACF beds), within ED ACE hours (IRR [95% CI]: 0.71 [0.46, 1. 09]; p = 0.122). A 29% reduction, whilst not statistically significant, is still clinically important and impactful for residents and EDs. A post-hoc logistic regression demonstrated a statistically significant 69% reduction in the probability that an episode of care resulted in an ED presentation within ED ACE hours post-implementation compared to pre-implementation (OR [95% CI]: 0.31 [0.11, 0.87]; p = 0.025).

CONCLUSION: Findings have shown the positive impact of augmenting ACE with a VTC. Any reduction of resident presentations to a busy ED is beneficial to healthcare overall, but more so to the individual older person who can recover safely and comfortably in their own RACF.

TRIAL REGISTRATION: Australian New Zealand Clinical Trials Registry (ID ACTR N12619001692123). https://www.anzctr.org.au/Trial/Registration/TrialReview.aspx?id=378629andisReview=true.

DOI: 10.1186/s12913-023-10384-z

PMCID: PMC10726593

PMID: 38110923 [Indexed for MEDLINE]

13. Resuscitation. 2023 Dec;193:109966. doi: 10.1016/j.resuscitation.2023.109966. Epub 2023 Sep 12.

The effects of mechanical versus bag-valve ventilation on gas exchange during cardiopulmonary resuscitation in emergency department patients: A randomized controlled trial (CPR-VENT).

Tangpaisarn T(1), Tosibphanom J(2), Sata R(3), Kotruchin P(4), Drumheller B(5), Phungoen P(6).

INTRODUCTION: Effective ventilation is crucial for successful cardiopulmonary resuscitation (CPR). Previous studies indicate that higher arterial oxygen levels (PaO2) during CPR increase the chances of successful resuscitation. However, the advantages of mechanical ventilators over bag-valve ventilation for achieving optimal PaO2 during CPR remain uncertain.

METHOD: We conducted a randomized trial involving non-traumatic adult cardiac arrest patients who received CPR in the ED. After intubation, patients were randomly assigned to ventilate with a mechanical ventilator (MV) or bag valve ventilation (BV). In MV group, ventilation settings were: breath rate 10/minute, tidal volume 6-7 ml/kg, inspiratory time 1 second, positive end-expiratory pressure 0 cm water, inspiratory oxygen fraction (FiO2) 100%. The primary outcome was to compare the difference in PaO2 from arterial blood gases (ABG) obtained 4-10 minutes later during CPR between both groups.

RESULTS: Sixty patients were randomized (30 in each group). The study population consisted of: 57% male, median age 62 years, 37% received bystander CPR, and 20% had an initial shockable rhythm. Median time from arrest to intubation was 24 minutes. The median PaO2 was not significantly different in the BV compared to MV [36.5 mmHg (14.0-70.0) vs. 29.0 mmHg (15.0-70.0), P = 0.879]. Other ABG parameters and rates of return of spontaneous circulation and survival were not different.

CONCLUSIONS: In ED patients with refractory cardiac arrest, arterial oxygen levels during CPR were comparable between patients ventilated with MV and BV. Mechanical ventilation is at least feasible and safe during CPR in intubated cardiac arrest patients.

DOI: 10.1016/j.resuscitation.2023.109966

PMID: 37709163 [Indexed for MEDLINE]

14. Addict Behav. 2023 Dec;147:107829. doi: 10.1016/j.addbeh.2023.107829. Epub 2023 Aug 11.

A remote brief intervention plus social media messaging for cannabis use among emerging adults: A pilot randomized controlled trial in emergency department patients.

Bonar EE(1), Goldstick JE(2), Tan CY(3), Bourque C(4), Carter PM(5), Duval ER(6), McAfee J(7), Walton MA(8).

INTRODUCTION: Interventions addressing cannabis use among emerging adults (ages 18-25) are currently needed to prevent negative outcomes. Emergency Department (ED) visits provide an opportunity to initiate interventions. In this pilot study, we created a brief intervention (BI), extended with private social media messaging for emerging adult ED patients who use cannabis regularly. Study aims were to examine intervention feasibility, acceptability, and descriptive outcomes.

METHODS: We recruited and randomized N = 58 emerging adults (M age 21.5 years, 65.5% female) who used cannabis from an ED in-person and remotely after their ED visit (given COVID-19 restrictions). Participants randomized to the intervention (N = 30) received a Motivational Interviewing-based BI and 4 weeks of health coaching via private social media; control participants received a resource brochure and entertaining social media messaging. Follow-ups occurred at 1-month and 3-months.

RESULTS: Most intervention participants liked the BI (95.8%), found it helpful to discuss cannabis use in the BI (91.7%), and liked interacting with coaches on social media (86.3%). Social media content (e.g., video clips, images/still pictures/memes) were highly rated. Descriptively, the intervention group showed theory-consistent changes in importance of and intentions to change cannabis (increases vs. decrease/stability in control group), whereas findings for cannabis consumption/consequences were mixed.

CONCLUSIONS: This BI paired with social media messaging was acceptable in a sample of emerging adults from an ED who used cannabis regularly. Despite feasibility challenges due to COVID-19, this intervention warrants future investigation with a larger sample and longer follow-up period, with attention to the changing cannabis landscape when measuring outcomes.

DOI: 10.1016/j.addbeh.2023.107829

PMID: 37598642 [Indexed for MEDLINE]

15. Prehosp Disaster Med. 2023 Dec;38(6):780-783. doi: 10.1017/S1049023X23006428. Epub 2023 Oct 2.

Epidemiology of Trauma-Related Hemorrhage and Time to Definitive Care Across North America: Making the Case for Bleeding Control Education.

Jones AR(1), Miller J(1), Brown M(2).

INTRODUCTION: Uncontrolled trauma-related hemorrhage remains the primary preventable cause of death among those with critical injury.

STUDY OBJECTIVE: The purpose of this investigation was to evaluate the types of trauma associated with critical injury and trauma-related hemorrhage, and to determine the time to definitive care among patients treated at major trauma centers who were predicted to require massive transfusion.

METHODS: A secondary analysis was performed of the Pragmatic, Randomized, Optimal Platelet and Plasma Ratios (PROPPR) trial data (N = 680). All patients included were predicted to require massive transfusion and admitted to one of 12 North American trauma centers. Descriptive statistics were used to characterize patients, including demographics, type and mechanism of injury, source of bleeding, and receipt of prehospital interventions. Patient time to definitive care was determined using the time from activation of emergency services to responder arrival on scene, and time from scene departure to emergency department (ED) arrival. Each interval was calculated and then summed for a total time to definitive care.

RESULTS: Patients were primarily white (63.8%), male (80.3%), with a median age of 34 (IQR 24-51) years. Roughly one-half of patients experienced blunt (49.0%) versus penetrating (48.2%) injury. The most common types of blunt trauma were motor vehicle injuries (83.5%), followed by falls (9.3%), other (3.6%), assaults (1.8%), and incidents due to machinery (1.8%). The most common types of penetrating injuries were gunshot wounds (72.3%), stabbings (24.1%), other (2.1%), and impalements (1.5%). One-third of patients (34.5%) required some prehospital intervention, including intubation (77.4%), chest or needle decompression (18.8%), tourniquet (18.4%), and cardiopulmonary resuscitation (CPR; 5.6%). Sources of bleeding included the abdomen (44.3%), chest (20.4%), limb/extremity (18.2%), pelvis (11.4%), and other (5.7%). Patients waited for a median of six (IQR4-10) minutes for emergency responders to arrive at the scene of injury and traveled a median of 27 (IQR 19-42) minutes to an ED. Time to definitive care was a median of 57 (IQR 44-77) minutes, with a range of 12-232 minutes. Twenty-four-hour mortality was 15% (n = 100) with 81 patients dying due to exsanguination or hemorrhage.

CONCLUSION: Patients who experience critical injury may experience lengthy times to receipt of definitive care and may benefit from bystander action for hemorrhage control to improve patient outcomes.

DOI: 10.1017/S1049023X23006428

PMCID: PMC10694464

PMID: 37781932 [Indexed for MEDLINE]

16. J Manag Care Spec Pharm. 2024 Jan;30(1):86-97. doi: 10.18553/jmcp.2023.22205. Epub 2023 Dec 6.

Health care resource utilization and costs among patients with spasticity or cervical dystonia.

Hull M(1), Danchenko N(2), Anupindi VR(1), DeKoven M(1), He J(3), Bouchard J(4).

BACKGROUND: Spasticity and cervical dystonia (CD) are movement disorders with considerable direct and indirect health care cost implications. Although several studies have discussed their clinical impact, few have calculated the economic burden of these disorders.

OBJECTIVE: To assess the all-cause health care resource utilization (HCRU) and costs in adults and children with spasticity or CD.

METHODS: This retrospective, observational cohort-based study was conducted using administrative insurance claims from the IQVIA PharMetrics Plus database from October 1, 2015, to December 31, 2019. Patients were selected based on International Classification of Diseases, Tenth Revision, Clinical Modification diagnosis codes for first evidence of spasticity (associated with a spasticity etiology) or CD (index date) during the selection window, from April 1, 2016, through December 31, 2018. Cases were stratified into 3 mutually exclusive cohorts: adult patients with spasticity, pediatric patients with spasticity, and patients with CD; those with spasticity who had a history of stroke or cerebral palsy were also evaluated in subcohorts. Patients without evidence of spasticity or CD during the study period were identified as a matched comparator group and were randomly assigned an index date. Patients with spasticity were matched 1:1 to the comparator group based on age, sex, index year, and payer type using descriptive analyses.

RESULTS: 215,739 adult patients with spasticity, 29,644 pediatric patients with spasticity, and 9,035 adult patients with CD were identified after matching. Adult patients with spasticity and CD had mean (SD) ages of 48.4 (15.6) years and 48.0 (13.1) years, respectively. Stroke was identified in 31.9% (n = 68,928) of adult patients with spasticity, and cerebral palsy was identified in 11.3% (n = 3,364) of pediatric patients with spasticity. Adult and pediatric patients with spasticity and patients with CD had significantly higher HCRU (including mean number of outpatient, emergency department, and inpatient visits and proportions of patients with prescription fills) and higher mean total health care costs per patient (adult patients with spasticity $29,912 vs $7,464; pediatric patients with spasticity $16,089 vs $2,963; and patients with CD $20,168 vs $7,141) than matched comparators (all P<0.0001).

CONCLUSIONS: The management of patients with spasticity or CD results in considerably higher health care expenses. Within managed health care systems, more effective management of spasticity and CD in adult and pediatric patients represents a significant opportunity for cost savings.

DOI: 10.18553/jmcp.2023.22205

PMID: 38055046 [Indexed for MEDLINE]

17. J Am Med Dir Assoc. 2023 Dec;24(12):1904-1909. doi: 10.1016/j.jamda.2023.05.035. Epub 2023 Jul 5.

Rapid Detection of Influenza Outbreaks in Long-Term Care Facilities Reduces Emergency Room Visits and Hospitalization: A Randomized Trial.

Temte JL(1), Checovich MM(2), Barlow S(2), Shult PA(3), Reisdorf E(3), Haupt TE(4), Hamrick I(2), Mundt MP(2).

OBJECTIVES: To assess whether the use of rapid influenza diagnostic tests (RIDTs) for long-term care facility (LTCF) residents with acute respiratory infection is associated with increased antiviral use and decreased health care utilization.

DESIGN: Nonblinded, pragmatic, randomized controlled trial evaluating a 2-part intervention with modified case identification criteria and nursing staff-initiated collection of nasal swab specimen for on-site RIDT.

SETTING AND PARTICIPANTS: Residents of 20 LTCFs in Wisconsin matched by bed capacity and geographic location and then randomized.

METHODS: Primary outcome measures, expressed as events per 1000 resident-weeks, included antiviral treatment courses, antiviral prophylaxis courses, total emergency department (ED) visits, ED visits for respiratory illness, total hospitalizations, hospitalizations for respiratory illness, hospital length of stay, total deaths, and deaths due to respiratory illness over 3 influenza seasons.

RESULTS: Oseltamivir use for prophylaxis was higher at intervention LTCFs [2.6 vs 1.9 courses per 1000 person-weeks; rate ratio (RR) 1.38, 95% CI 1.24-1.54; P < .001]; rates of oseltamivir use for influenza treatment were not different. Rates of total ED visits (7.6 vs 9.8/1000 person-weeks; RR 0.78, 95% CI 0.64-0.92; P = .004), total hospitalizations (8.6 vs 11.0/1000 person-weeks; RR 0.79, 95% CI 0.67-0.93; P = .004), and hospital length of stay (35.6 days vs 55.5 days/1000 person-weeks; RR 0.64, 95% CI 0.0.59-0.69; P < .001) were lower at intervention as compared to control LTCFs. No significant differences were noted for respiratory-related ED visits or hospitalizations or in rates for all-cause or respiratory-associated mortality.

CONCLUSIONS AND IMPLICATIONS: The use of low threshold criteria to trigger nursing staff-initiated testing for influenza with RIDT resulted in increased prophylactic use of oseltamivir. There were significant reductions in the rates of all-cause ED visits (22% decline), hospitalizations (21% decline), and hospital length of stay (36% decline) across 3 combined influenza seasons. No significant differences were noted in respiratory-associated and all-cause deaths between intervention and control sites.

DOI: 10.1016/j.jamda.2023.05.035

PMID: 37421970 [Indexed for MEDLINE]

18. Circ Arrhythm Electrophysiol. 2023 Dec;16(12):639-650. doi: 10.1161/CIRCEP.123.012567. Epub 2023 Nov 11.

Multicenter, Phase 2, Randomized Controlled Study of the Efficacy and Safety of Etripamil Nasal Spray for the Acute Reduction of Rapid Ventricular Rate in Patients With Symptomatic Atrial Fibrillation (ReVeRA-201).

Camm AJ(1), Piccini JP(2), Alings M(3), Dorian P(4), Gosselin G(5), Guertin MC(5), Ip JE(6), Kowey PR(7), Mondésert B(5), Prins FJ(8), Roux JF(9), Stambler BS(10), van Eck J(11), Al Windy N(12), Thermil N(13), Shardonofsky S(13), Bharucha DB(14), Roy D(5).

BACKGROUND: Despite chronic therapies, atrial fibrillation (AF) leads to rapid ventricular rates (RVR) often requiring intravenous treatments. Etripamil is a fast-acting, calcium-channel blocker administered intranasally affecting the atrioventricular node within minutes.

METHODS: Reduction of Ventricular Rate in Patients with Atrial Fibrillation evaluated the efficacy and safety of etripamil for the reduction of ventricular rate (VR) in patients presenting urgently with AF-RVR (VR ≥110 beats per minute [bpm]), was randomized, double-blind, placebo-controlled, and conducted in Canada and the Netherlands. Patients presenting urgently with AF-RVR were randomized (1:1, etripamil nasal spray 70 mg: placebo nasal spray). The primary objective was to demonstrate the effectiveness of etripamil in reducing VR in AF-RVR within 60 minutes of treatment. Secondary objectives assessed achievement of VR <100 bpm, reduction by ≥10% and ≥20%, relief of symptoms and treatment effectiveness; adverse events; and additional measures to 360 minutes.

RESULTS: Sixty-nine patients were randomized, 56 dosed with etripamil (n=27) or placebo (n=29). The median age was 65 years; 39% were female patients; proportions of AF types were similar between groups. The difference of mean maximum reductions in VR over 60 minutes, etripamil versus placebo, adjusting for baseline VR, was -29.91 bpm (95% CI, -40.31 to -19.52; P<0.0001). VR reductions persisted up to 150 minutes. Significantly greater proportions of patients receiving etripamil achieved VR reductions <100 bpm (with longer median duration <100 bpm), or VR reduction by ≥10% or ≥20%, versus placebo. VR reduction ≥20% occurred in 66.7% of patients in the etripamil arm and no patients in placebo. Using the Treatment Satisfaction Questionnaire for Medication-9, there was significant improvement in satisfaction on symptom relief and treatment effectiveness with etripamil versus placebo. Serious adverse events were rare; 1 patient in the etripamil arm experienced transient severe bradycardia and syncope, assessed as due to hypervagotonia.

CONCLUSIONS: Intranasal etripamil 70 mg reduced VR and improved symptom relief and treatment satisfaction. These data support further development of self-administered etripamil for the treatment of AF-RVR.

REGISTRATION: URL: https://www.clinicaltrials.gov; Unique Identifier: NCT04467905.

DOI: 10.1161/CIRCEP.123.012567

PMCID: PMC10734780

PMID: 37950726 [Indexed for MEDLINE]

HOSPITAL CARE

– systematic review & meta-analysis

1. Int J Med Inform. 2023 Dec;180:105274. doi: 10.1016/j.ijmedinf.2023.105274. Epub 2023 Oct 31.

Artificial intelligence in emergency medicine. A systematic literature review.

Piliuk K(1), Tomforde S(2).

Motivation and objective: Emergency medicine is becoming a popular application area for artificial intelligence methods but remains less investigated than other healthcare branches. The need for time-sensitive decision-making on the basis of high data volumes makes the use of quantitative technologies inevitable. However, the specifics of healthcare regulations impose strict requirements for such applications. Published contributions cover separate parts of emergency medicine and use disparate data and algorithms. This study aims to systematize the relevant contributions, investigate the main obstacles to artificial intelligence applications in emergency medicine, and propose directions for further studies.

METHODS: The contributions selection process was conducted with systematic electronic databases querying and filtering with respect to established exclusion criteria. Among the 380 papers gathered from IEEE Xplore, ACM Digital Library, Springer Library, ScienceDirect, and Nature databases 116 were considered to be a part of the survey. The main features of the selected papers are the focus on emergency medicine and the use of machine learning or deep learning algorithms.

FINDINGS AND DISCUSSION: The selected papers were classified into two branches: diagnostics-specific and triage-specific. The former ones are focused on either diagnosis prediction or decision support. The latter covers such applications as mortality, outcome, admission prediction, condition severity estimation, and urgent care prediction. The observed contributions are highly specialized within a single disease or medical operation and often use privately collected retrospective data, making them incomparable. These and other issues can be addressed by creating an end-to-end solution based on human-machine interaction.

CONCLUSION: Artificial intelligence applications are finding their place in emergency medicine, while most of the corresponding studies remain isolated and lack higher generalization and more sophisticated methodology, which can be a matter of forthcoming improvements.

DOI: 10.1016/j.ijmedinf.2023.105274

PMID: 37944275 [Indexed for MEDLINE]

Journal report – prosinec 2023

2. Resuscitation. 2023 Dec;193:110004. doi: 10.1016/j.resuscitation.2023.110004. Epub 2023 Oct 18.

Prognostic factors associated with favourable functional outcome among adult patients requiring extracorporeal cardiopulmonary resuscitation for out-of-hospital cardiac arrest: A systematic review and meta-analysis.

Tran A(1), Rochwerg B(2), Fan E(3), Belohlavek J(4), Suverein MM(5), Poll MCGV(5), Lorusso R(6), Price S(7), Yannopoulos D(8), MacLaren G(9), Ramanathan K(9), Ling RR(10), Thiara S(11), Tonna JE(12), Shekar K(13), Hodgson CL(14), Scales DC(15), Sandroni C(16), Nolan JP(17), Slutsky AS(18), Combes A(19), Brodie D(20), Fernando SM(21).

BACKGROUND: Extracorporeal cardiopulmonary resuscitation (ECPR), has demonstrated promise in the management of refractory out-of-hospital cardiac arrest (OHCA). However, evidence from observational studies and clinical trials are conflicting and the factors influencing outcome have not been well established.

METHODS: We conducted a systematic review and meta-analysis summarizing the association between pre-ECPR prognostic factors and likelihood of good functional outcome among adult patients requiring ECPR for OHCA. We searched Medline and Embase databases from inception to February 28, 2023 and screened studies with two independent reviewers. We performed meta-analyses of unadjusted and adjusted odds ratios, adjusted hazard ratios and mean differences separately. We assessed risk of bias using the QUIPS tool and certainty of evidence using the GRADE approach.

FINDINGS: We included 29 observational and randomized studies involving 7,397 patients. Factors with moderate or high certainty of association with increased survival with favourable functional outcome include pre-arrest patient factors, such as younger age (odds ratio (OR) 2.13, 95% CI 1.52 to 2.99) and female sex (OR 1.37, 95% CI 1.11 to 1.70), as well as intra-arrest factors, such as shockable rhythm (OR 2.79, 95% CI 2.04 to 3.80), witnessed arrest (OR 1.68 (95% CI 1.16 to 2.42), bystander CPR (OR 1.55, 95% CI 1.19 to 2.01), return of spontaneous circulation (OR 2.81, 95% CI 2.19 to 3.61) and shorter time to cannulation (OR 1.14, 95% CI 1.17 to 1.69 per 10 minutes).

INTERPRETATION: The findings of this review confirm several clinical concepts well established in the cardiac arrest literature and their applicability to the patient for whom ECPR is considered - that is, the impact of pre-existing patient factors, the benefit of timely and effective CPR, as well as the prognostic importance of minimizing low-flow time. We advocate for the thoughtful consideration of these prognostic factors as part of a risk stratification framework when evaluating a patient's potential candidacy for ECPR.

DOI: 10.1016/j.resuscitation.2023.110004

PMID: 37863420 [Indexed for MEDLINE]

3. J Matern Fetal Neonatal Med. 2023 Dec;36(1):2187254. doi: 10.1080/14767058.2023.2187254.

The impact of COVID-19 pandemic on obstetrics and gynecology hospitalization rate and on reasons for seeking emergency care: a systematic review and meta-analysis.

Carbone L(1), Raffone A(2), Travaglino A(3), Saccone G(1), Di Girolamo R(4), Neola D(4), Castaldo E(4), Iorio GG(4), Pontillo M(5), Arduino B(6), D'Alessandro P(6), Guida M(1), Mollo A(7), Maruotti GM(4).

BACKGROUND: During the lockdown due to COVID-19 pandemic, utilization of emergency care units has been reported to be reduced for obstetrical and gynaecological reasons. The aim of this systematic review is to assess if this phenomenon reduced the rate of hospitalizations for any reason and to evaluate the main reasons for seeking care in this subset of the population.

METHODS: The search was conducted using the main electronic databases from January 2020 to May 2021. The studies were identified with the use of a combination of: "emergency department" OR "A&E" OR "emergency service" OR "emergency unit" OR "maternity service" AND "COVID-19" OR "COVID-19 pandemic" OR "SARS-COV-2" and "admission" OR "hospitalization". All the studies that evaluated women going to obstetrics & gynecology emergency department (ED) during the COVID-19 pandemic for any reason were included.

RESULTS: The pooled proportion (PP) of hospitalizations increased from 22.7 to 30.6% during the lockdown periods, in particular from 48.0 to 53.9% for delivery. The PP of pregnant women suffering from hypertensive disorders increased (2.6 vs 1.2%), as well as women having contractions (52 vs 43%) and rupture of membranes (12.0 vs 9.1%). Oppositely, the PP of women having pelvic pain (12.4 vs 14.4%), suspected ectopic pregnancy (1.8 vs 2.0), reduced fetal movements (3.0 vs 3.3%), vaginal bleeding both for obstetrical (11.7 vs 12.8%) and gynecological issues (7.4 vs 9.2%) slightly reduced.

CONCLUSION: During the lockdown, an increase in the proportion of hospitalizations for obstetrical and gynecological reasons has been registered, especially for labor symptoms and hypertensive disorders.

DOI: 10.1080/14767058.2023.2187254

PMID: 36894183 [Indexed for MEDLINE]

4. Eur J Trauma Emerg Surg. 2023 Dec;49(6):2531-2541. doi: 10.1007/s00068-023-02339-0. Epub 2023 Aug 1.

Surgical versus non-surgical treatment of flail chest: a meta-analysis of randomized controlled trials.

Ferreira ROM(1), Pasqualotto E(2), Viana P(3), Schmidt PHS(2), Andrighetti L(2), Chavez MP(2), Flausino F(2)(4), de Oliveira Filho GR(2).

PURPOSE: Conflicting evidence exists on the choice of surgical or non-surgical treatment of flail chest injuries. We aimed to perform a meta-analysis comparing outcomes in patients presenting flail chest undergoing surgical or non-surgical treatment.

METHODS: Embase, PubMed, and Cochrane databases were searched for randomized controlled trials (RCTs) comparing surgery to no surgery in patients with acute unstable chest wall injuries. We computed weighted mean differences (WMDs) for continuous outcomes and risk ratios (RRs) for binary endpoints, with 95% confidence intervals (CIs). Random effects meta-analyses were performed. Heterogeneity was assessed using I2 statistics.

RESULTS: Six RCTs (544 patients) were included, and surgical treatment was used in 269 (49.4%). Compared to no surgery, surgery reduced mechanical ventilation days (WMD - 4.34, 95% CI - 6.98, - 1.69; $p < 0.01$; I2 = 87%; GRADE: very low; PI - 13.51, 4.84); length of intensive care unit stay (WMD - 4.62, 95% CI - 7.19, - 2.05; $p < 0.01$; I2 = 78%; GRADE: low; PI - 12.86, 3.61) and the incidence of pneumonia (RR 0.50, 95% CI 0.31, 0.81; $p = 0.005$; I2 = 54%; GRADE: moderate; PI 0.13, 1.91). No difference in mortality (RR 0.56, 95% CI 0.19, 1.65; $p = 0.27$; I2 = 23%; GRADE: moderate; PI 0.04, 7.25), length of hospital stay (WMD - 5.39, 95% CI - 11.38, - 0.60; $p = 0.08$; I2 = 89%; GRADE: very low; PI - 11.38, 0.60), or need for tracheostomy (RR 0.59, 95% CI 0.34, 1.03; $p = 0.06$; I2 = 54%; GRADE: moderate; PI 0.11, 3.24) was found.

CONCLUSIONS: Our results suggest that surgical treatment is advantageous compared to non-surgical treatment for patients with flail chest secondary to rib fractures.

DOI: 10.1007/s00068-023-02339-0

PMID: 37526708 [Indexed for MEDLINE]

5. J Emerg Med. 2023 Dec;65(6):e495-e510. doi: 10.1016/j.jemermed.2023.08.002. Epub 2023 Aug 23.

The Effect of Early Severe Hyperoxia in Adults Intubated in the Prehosptial Setting or Emergency Department: A Scoping Review.

Yusin G(1), Farley C(1), Dorris CS(2), Yusina S(3), Zaatari S(4), Goyal M(4).

BACKGROUND: The detrimental effects of hyperoxia exposure have been well-described in patients admitted to intensive care units. However, data evaluating the effects of short-term, early hyperoxia exposure in patients intubated in the prehospital setting or emergency department (ED) have not been systematically reviewed.

OBJECTIVE: Our aim was to quantify and describe the existing literature examining the clinical outcomes in ED patients exposed to hyperoxia within the first 24 h of mechanical ventilation.

METHODS: This review was performed in concordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines for scoping reviews. Two rounds of review using Rayyan QCRI software were performed for title and abstract screening and full-text search. Of the 2739 articles, 27 articles were retrieved after initial screening, of which 5 articles

were excluded during the full-text screening, leaving 22 articles for final review and data extraction.

RESULTS: Of 22 selected publications, 9 described patients with traumatic brain injury, 6 with cardiac arrest, 3 with multisystem trauma, 1 with stroke, 2 with septic shock, and 1 was heterogeneous. Three studies were randomized controlled trials. The available data have widely heterogeneous definitions of hyperoxia exposure, outcomes, and included populations, limiting conclusions.

CONCLUSIONS: There is a paucity of data that examined the effects of severe hyperoxia exposure in the acute, post-intubation phase of the prehospital and ED settings. Further research with standardized definitions is needed to provide more detailed guidance regarding early oxygen titration in intubated patients.

DOI: 10.1016/j.jemermed.2023.08.002

PMID: 37867037 [Indexed for MEDLINE]

6. Trauma Violence Abuse. 2023 Dec;24(5):2901-2921. doi: 10.1177/15248380221118962. Epub 2022 Aug 23.

Patient and Provider Emergency Care Experiences Related to Intimate Partner Violence: A Systematic Review of the Existing Evidence.

Duchesne E(1), Nathoo A(1), Walker M(1), Bartels SA(1).

Intimate partner violence (IPV) is a public health problem that has devastating physical, psychological, and economic consequences. The emergency department (ED) is an important point of contact for individuals experiencing IPV. However, there are few studies synthesizing interactions between patients experiencing IPV and providers. We aimed to summarize the existing evidence regarding (1) ED care experiences of patients with a history of IPV and (2) experiences of ED providers interacting with them. The secondary aim of this review was to evaluate high-quality care barriers and facilitators and to elucidate common causes of care avoidance. A literature search of peer-reviewed electronic databases was undertaken. Inclusion criteria consisted of studies detailing IPV-related patient or provider experiences surrounding ED visits. Articles published before 2000 or unavailable in English/French were excluded. A total of 772 studies were screened, yielding a final number of 41 studies. Negative patient experiences arose from individual-, institutional-, and system-level issues, commonly including adverse provider behavior. Negative provider experiences stemmed from individual-, institutional-, and system-level issues, such as a lack of knowledge and lack of infrastructure. Facilitators to positive patient experiences included interacting with empathetic providers, having privacy, and receiving timely specialized care. Facilitators to positive provider experiences included feeling well-equipped to manage IPV and having policies leading to appropriate care. Negative ED care experiences reveal inadequate care quality, ultimately

leading to secondary victimization of individuals experiencing IPV. This review also uncovered important literature gaps regarding experiences of those who identify as equity-deserving.

DOI: 10.1177/15248380221118962

PMCID: PMC10594849

PMID: 35997064 [Indexed for MEDLINE]

7. Am J Emerg Med. 2023 Dec;74:1-8. doi: 10.1016/j.ajem.2023.09.008. Epub 2023 Sep 9.

Effectiveness of emergency department based interventions for frequent users with mental health issues: A systematic review.

Gabet M(1), Armoon B(2), Meng X(2), Fleury MJ(3).

Frequent emergency department (ED) users with mental health issues are particularly vulnerable patients, who often receive insufficient or inadequate outpatient care. This systematic review identified and evaluated studies on ED-based interventions to reduce acute care use by this population, while improving outpatient service use and patient outcomes. Searches were conducted in five databases for studies published between January 1, 2000, and April 30, 2022. Eligibility criteria included: patients with mental health issues who made 2+ ED visits in the previous 6 months or were high ED users (3+ visits/year), and who received ED-based interventions to reduce ED use. The review included 12 studies of 11,082 articles screened. Four intervention groups were identified: care plan (n = 4), case management (n = 4), peer-support (n = 2) and brief interventions (n = 2). The definitions of frequent users varied considerably, while the quality assessment rated studies from moderate to good and risk of bias from low to high. Eight studies used pre-post design, and four were randomized controlled trials. Ten studies assessed outcomes related to use of other services than ED, mainly hospitalizations, while five assessed patients' clinical conditions and three, social conditions (e.g., housing status). This review revealed that case management and care plan interventions, based in ED, decrease ED use among frequent users, while case management also showed promising results for outpatient service use and clinical and social outcomes. Thus, the results support continued deployment of intensive ED-based interventions for frequent ED users with mental health issues although firm conclusions regarding the effectiveness of these interventions, particularly outcomes related to services other than ED, require further investigation.

DOI: 10.1016/j.ajem.2023.09.008

PMID: 37717467 [Indexed for MEDLINE]

8. J Racial Ethn Health Disparities. 2023 Dec 20. doi: 10.1007/s40615-023-01876-z.

Strategies to Improve Care in the Emergency Department for Culturally and Linguistically Diverse Adults: a Systematic Review.

Hayba N(1), Cheek C(2), Austin E(1), Testa L(1), Richardson L(1), Safi M(1)(3), Ransolin N(1)(4), Carrigan A(1), Harrison R(1), Francis-Auton E(1), Clay-Williams R(4).

BACKGROUND: The emergency department (ED) is an important gateway into the health system for people from culturally and linguistically diverse (CALD) backgrounds; their experience in the ED is likely to impact the way they access care in the future. Our review aimed to describe interventions used to improve ED health care delivery for adults from a CALD background.

METHODS: An electronic search of four databases was conducted to identify empirical studies that reported interventions with a primary focus of improving ED care for CALD adults (aged ≥ 18 years), with measures relating to ED system performance, patient outcomes, patient experience, or staff experience. Studies published from inception to November 2022 were included. We excluded non-empirical studies, studies where an intervention was not provided in ED, papers where the full text was unavailable, or papers published in a language other than English. The intervention strategies were categorised thematically, and measures were tabulated.

RESULTS: Following the screening of 3654 abstracts, 89 articles underwent full text review; 16 articles met the inclusion criteria. Four clear strategies for targeting action tailored to the CALD population of interest were identified: improving self-management of health issues, improving communication between patients and providers, adhering to good clinical practice, and building health workforce capacity.

CONCLUSIONS: The four strategies identified provide a useful framework for targeted action tailored to the population and outcome of interest. These detailed examples show how intervention design must consider intersecting socio-economic barriers, so as not to perpetuate existing disparity.REGISTRATION: PROSPERO registration number: CRD42022379584.

DOI: 10.1007/s40615-023-01876-z

PMID: 38117444

9. BMJ Qual Saf. 2023 Dec 30:bmjqs-2023-016295. doi: 10.1136/bmjqs-2023-016295.

Association between language discordance and unplanned hospital readmissions or emergency department revisits: a systematic review and meta-analysis.

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Journal report – prosinec 2023

BACKGROUND AND OBJECTIVE: Studies conflict about whether language discordance increases rates of hospital readmissions or emergency department (ED) revisits for adult and paediatric patients. The literature was systematically reviewed to investigate the association between language discordance and hospital readmission and ED revisit rates.

DATA SOURCES: Searches were performed in PubMed, Embase and Google Scholar on 21 January 2021, and updated on 27 October 2022. No date or language limits were used.

STUDY SELECTION: Articles that (1) were peer-reviewed publications; (2) contained data about patient or parental language skills and (3) included either unplanned hospital readmission or ED revisit as one of the outcomes, were screened for inclusion. Articles were excluded if: unavailable in English; contained no primary data or inaccessible in a full-text form (eg, abstract only).

DATA EXTRACTION AND SYNTHESIS: Two reviewers independently extracted data using Preferred Reporting Items for Systematic Reviews and Meta-Analyses-extension for scoping reviews guidelines. We used the Newcastle-Ottawa Scale to assess data quality. Data were pooled using DerSimonian and Laird random-effects models. We performed a meta-analysis of 18 adult studies for 28-day or 30-day hospital readmission; 7 adult studies of 30-day ED revisits and 5 paediatric studies of 72-hour or 7-day ED revisits. We also conducted a stratified analysis by whether access to interpretation services was verified/provided for the adult readmission analysis.

MAIN OUTCOMES AND MEASURES: Odds of hospital readmissions within a 28-day or 30-day period and ED revisits within a 7-day period.

RESULTS: We generated 4830 citations from all data sources, of which 49 (12 paediatric; 36 adult; 1 with both adult and paediatric) were included. In our meta-analysis, language discordant adult patients had increased odds of hospital readmissions (OR 1.11, 95% CI 1.04 to 1.18). Among the 4 studies that verified interpretation services for language discordant patient-clinician interactions, there was no difference in readmission (OR 0.90, 95% CI 0.77 to 1.05), while studies that did not specify interpretation service access/use found higher odds of readmission (OR 1.14, 95% CI 1.06 to 1.22). Adult patients with a non-dominant language preference had higher odds of ED revisits (OR 1.07, 95% CI 1.004 to 1.152) compared with adults with a dominant language preference. In 5 paediatric studies, children of parents language discordant with providers had higher odds of ED revisits at 72 hours (OR 1.12, 95% CI 1.05 to 1.19) and 7 days (OR 1.02, 95% CI 1.01 to 1.03) compared with patients whose parents had language concordant communications.

DISCUSSION: Adult patients with a non-dominant language preference have more hospital readmissions and ED revisits, and children with parents who have a non-dominant language preference have more ED revisits. Providing interpretation services may mitigate the impact of language discordance and reduce hospital readmissions among adult patients.

PROSPERO REGISTRATION NUMBER: CRD42022302871.

DOI: 10.1136/bmjqs-2023-016295

PMID: 38160059

10. Prehosp Disaster Med. 2023 Dec;38(6):774-779. doi: 10.1017/S1049023X23006519. Epub 2023 Oct 25.

Application of Telemedicine in the Ambulance for Stroke Patients: A Systematic Review.

Sarpourian F(1), Ahmadi Marzaleh M(2), Fatemi Aghda SA(3), Zare Z(4).

INTRODUCTION: The use of telemedicine for the prehospital management of emergency conditions, especially stroke, is increasing day by day. Few studies have investigated the applications of telemedicine in Emergency Medical Services (EMS). A comprehensive study of the applications of this technology in stroke patients in ambulances can help to build a better understanding. Therefore, this systematic review was conducted to investigate the use of telemedicine in ambulances for stroke patients in 2023.

METHODS: A systematic search was conducted in PubMed, Cochrane, Scopus, ProQuest, Science Direct, and Web of Science from 2013 through March 1, 2023. The authors selected the articles based on keywords and criteria and reviewed them in terms of title, abstract, and full text. Finally, the articles that were related to the study aim were evaluated.

RESULTS: The initial search resulted in the extraction of 2,795 articles. After review of the articles, and applying the inclusion and exclusion criteria, seven articles were selected for the final analysis. Three (42.85%) studies were on the feasibility and intervention types. Also, randomized trials, feasibility, feasibility and prospective-observational, and feasibility and retrospective-interventional studies were each one (14.28%). Six (85.71%) of the studies were conducted in the United States. The National Institutes of Health Stroke Scale (NIHSS) and RP-Xpress were the most commonly used tools for neurological evaluations and teleconsultations.

CONCLUSION: Remote prehospital consultations, triage, and sending patient data before they go to the emergency department can be provided through telemedicine in ambulances. Neurological evaluations via telemedicine are reliable and accurate, and they are almost equal to in-person evaluations by a neurologist.

DOI: 10.1017/S1049023X23006519

PMID: 37877359 [Indexed for MEDLINE]

11. J Psychiatr Ment Health Nurs. 2023 Dec;30(6):1096-1113. doi: 10.1111/jpm.12936. Epub 2023 May 21.

Acute care utilization and its associated determinants among patients with substance-related disorders: A worldwide systematic review and meta-analysis.

Armoon B(1), Griffiths MD(2), Mohammadi R(3)(4), Ahounbar E(5)(6), Fleury MJ(7)(8).

INTRODUCTION: Identifying determinants of emergency department (ED) use and hospitalization among patients with substance-related disorders (SRDs) can improve health services to address unmet health needs.

AIM: The present study aimed to identify the prevalence rates of ED use and hospitalization, and their associated determinants among patients with SRDs.

METHODS: Studies in English published from January 1, 1995, to December 1, 2022, were searched on PubMed, Scopus, Cochrane Library, and Web of Science to identify primary studies.

RESULTS: The pooled prevalence rates of ED use and hospitalization among patients with SRDs were 36% and 41%, respectively. Patients with SRDs who were the most at risk of being both ED users and hospitalized were those (i) having medical insurance, (ii) having other drug and alcohol use disorders, (iii) having mental health disorders, and (iv) having chronic physical illnesses. A lower level of education increased the risk of ED use only.

DISCUSSION: To decrease ED use and hospitalization, more comprehensive services may be offered to these vulnerable patients with diversified needs.

IMPLICATIONS FOR PRACTICE: Chronic care integrating outreach interventions could be more provided for patients with SRDs after discharge from acute care units or hospitals.

DOI: 10.1111/jpm.12936

PMID: 37211655 [Indexed for MEDLINE]

12. Resusc Plus. 2023 Oct 21;16:100484. doi: 10.1016/j.resplu.2023.100484. eCollection 2023 Dec.

Virtual reality in simulation-based emergency skills training: A systematic review with a narrative synthesis.

Abbas JR(1)(2), Chu MMH(2), Jeyarajah C(2), Isba R(2)(3)(4), Payton A(1)(5), McGrath B(2)(6), Tolley N(7), Bruce I(1)(2).

OBJECTIVE: An important role is predicted for virtual reality (VR) in the future of medical education. We performed a systematic review of the literature with a narrative synthesis, to examine the current evidence for VR in simulation-based emergency skills training. We broadly define emergency skills as any clinical skill used in the emergency care of patients across all clinical settings.

METHODS: This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta Analyses (PRISMA) guidelines. The data sources accessed during this study included: PubMed, CINAHL, EMBASE, AMED, EMCARE, HMIC, BNI, PsychINFO, Medline, CENTRAL, SCOPUS, Web of Science, BIOSIS Citation Index, ERIC, ACM Digital Library, IEEE Xplore, and ProQuest Dissertations and Thesis Global. Cochrane's Rob 2 and ROBVIS tools were used during study quality assessment. No ethical review was required for this work.

RESULTS: Thirty-four articles published between 14th March 1998 and 1st March 2022 were included in this review. Studies were predominantly conducted in the USA and Europe and focussed on a variety of healthcare disciplines including medical, nursing, and allied health. VR education was delivered using head-mounted displays, Cave Automatic Virtual Environment systems, and bespoke setups. These systems delivered education in a variety of areas (emergency medicine, equipment training, obstetrics, and basic/advanced life support). Subjective potential advantages of this technology included realism, replayability, and time-effectiveness. Reports of adverse events were low in frequency across the included studies. Whilst clear educational benefit was generally noted, this was not reflected in changes to patient-based outcomes.

CONCLUSION: There may be educational benefit to using VR in the context of simulation-based emergency skills training including knowledge gain and retention, skill performance, acceptability, usability, and validity. Currently, there is insufficient evidence to demonstrate clear cost-effectiveness, or direct improvement of patient or institutional outcomes, at this stage.

DOI: 10.1016/j.resplu.2023.100484

PMCID: PMC10618508

PMID: 37920857

13. Acad Emerg Med. 2023 Dec;30(12):1253-1263. doi: 10.1111/acem.14790. Epub 2023 Sep 7.

Efficacy of prescribed opioids for acute pain after being discharged from the emergency department: A systematic review and meta-analysis.

Daoust R(1)(2)(3), Paquet J(1), Marquis M(1), Williamson D(3)(4), Fontaine G(5)(6), Chauny JM(1)(2)(3), Frégeau A(1)(2), Orkin AM(7)(8), Upadhye S(9), Lessard J(1)(2)(3), Cournoyer A(1)(2)(3).

BACKGROUND: Opioids are often prescribed for acute pain to patients discharged from the emergency department (ED), but there is a paucity of data on their short-term use. The purpose of this study was to synthesize the evidence regarding the efficacy of prescribed opioids compared to nonopioid analgesics for acute pain relief in ED-discharged patients.

METHODS: MEDLINE, EMBASE, CINAHL, PsycINFO, CENTRAL, and gray literature databases were searched from inception to January 2023. Two independent reviewers selected randomized controlled trials investigating the efficacy of prescribed opioids for ED-discharged patients, extracted data, and assessed risk of bias. Authors were contacted for missing data and to identify additional studies. The primary outcome was the difference in pain intensity scores or pain relief. All meta-analyses used a random-effect model and a sensitivity analysis compared patients treated with codeine versus those treated with other opioids.

RESULTS: From 5419 initially screened citations, 46 full texts were evaluated and six studies enrolling 1161 patients were included. Risk of bias was low for five studies. There was no statistically significant difference in pain intensity scores or pain relief between opioids versus nonopioid analgesics (standardized mean difference [SMD] 0.12; 95% confidence interval [CI] -0.10 to 0.34). Contrary to children, adult patients treated with opioid had better pain relief (SMD 0.28, 95% CI 0.13-0.42) compared to nonopioids. In another sensitivity analysis excluding studies using codeine, opioids were more effective than nonopioids (SMD 0.30, 95% CI 0.15-0.45). However, there were more adverse events associated with opioids (odds ratio 2.64, 95% CI 2.04-3.42).

CONCLUSIONS: For ED-discharged patients with acute musculoskeletal pain, opioids do not seem to be more effective than nonopioid analgesics. However, this absence of efficacy seems to be driven by codeine, as opioids other than codeine are more effective than nonopioids (mostly NSAIDs). Further prospective studies on the efficacy of short-term opioid use after ED discharge (excluding codeine), measuring patient-centered outcomes, adverse events, and potential misuse, are needed.

DOI: 10.1111/acem.14790

PMID: 37607265 [Indexed for MEDLINE]

14. J Community Health. 2023 Dec 21. doi: 10.1007/s10900-023-01320-7.

A Systematic Review of HIV Pre-exposure Prophylaxis (PrEP) Implementation in U.S. Emergency Departments: Patient Screening, Prescribing, and Linkage to Care.

Jackson KJ(1), Chitle P(2), McCoy SI(2), White DAE(3).

In the pursuit of ending the HIV epidemic, U.S. emergency departments (EDs) have emerged as a valuable setting to increase HIV testing and linkage to care. There is limited data available, however, describing the incorporation of HIV prevention initiatives in U.S. EDs. Over the last decade, HIV pre-exposure prophylaxis (PrEP) has significantly changed the HIV prevention landscape globally and very little is known about the provision of PrEP in U.S. EDs. To address this gap in the literature, we conducted a systematic review of peer-reviewed quantitative studies and conference abstracts spanning July 2012 - October 2022. Of 433 citations, 11 articles and 13 abstracts meet our inclusion criteria, representing 18 unique studies addressing PrEP screening, prescribing, and/or linkage to PrEP care.Most studies describe screening processes to identify PrEP-eligible patients (n = 17); most studies leveraged a patient's STI history as initial PrEP eligibility screening criteria. Fewer studies describe PrEP prescribing (n = 2) and/or linkage to PrEP care (n = 8).Findings from this systematic review highlight the potential for U.S. EDs to increase PrEP uptake among individuals at risk for HIV infection. Despite a growing number of studies exploring processes for incorporating PrEP into the ED setting, such studies are small-scale and time limited. Models providing prescribing PrEP in the ED show higher initiation rates than post-discharge engagement models. Electronic health record (EHR)-based HIV screening is valuable, but post-ED linkage rates are low. Our findings

emphasize the need to establish best practices for initiating and supporting prevention effective PrEP use in the ED setting.

DOI: 10.1007/s10900-023-01320-7

PMID: 38127296

15. Eur Child Adolesc Psychiatry. 2023 Dec;32(12):2439-2452. doi: 10.1007/s00787-022-02085-5. Epub 2022 Sep 24.

Models of integrated care for young people experiencing medical emergencies related to mental illness: a realist systematic review.

Otis M(1)(2)(3), Barber S(4)(5)(6), Amet M(4), Nicholls D(4)(5)(6).

Mental illness heightens risk of medical emergencies, emergency hospitalisation, and readmissions. Innovations for integrated medical-psychiatric care within paediatric emergency settings may help adolescents with acute mental disorders to get well quicker and stay well enough to remain out of hospital. We assessed models of integrated acute care for adolescents experiencing medical emergencies related to mental illness (MHR). We conducted a systematic review by searching MEDLINE, PsychINFO, Embase, and Web of Science for quantitative studies within paediatric emergency medicine, internationally. We included populations aged 8-25 years. Our outcomes were length of hospital stay (LOS), emergency hospital admissions, and rehospitalisation. Limits were imposed on dates: 1990 to June 2021. We present a narrative synthesis. This study is registered on PROSPERO: 254,359. 1667 studies were screened, 22 met eligibility, comprising 39,346 patients. Emergency triage innovations reduced admissions between 4 and 16%, including multidisciplinary staffing and training for psychiatric assessment ($F(3,42) = 4.6$, $P < 0.05$, $N = 682$), and telepsychiatry consultations (aOR = 0.41, 95% CI 0.28-0.58; $P < 0.001$, $N = 597$). Psychological therapies delivered in emergency departments reduced admissions 8-40%, including psychoeducation (aOR = 0.35, 95% CI 0.17-0.71, $P < 0.01$, $N = 212$), risk-reduction counselling for suicide prevention (OR = 2.78, 95% CI 0.55-14.10, $N = 348$), and telephone follow-up (OR = 0.45, 95% CI 0.33-0.60, $P < 0.001$, $N = 980$). Innovations on acute wards reduced readmissions, including guided meal supervision for eating disorders ($P = 0.27$), therapeutic skills for anxiety disorders, and a dedicated psychiatric crisis unit (22.2 vs 8.5% ($P = 0.008$). Integrated pathway innovations reduced readmissions between 8 and 37% including family-based therapy (FBT) for eating disorders ($X2(1,326) = 8.40$, $P = 0.004$, $N = 326$), and risk-targeted telephone follow-up or outpatients for all mental disorders (29.5 vs. 5%, $P = 0.03$, $N = 1316$). Studies occurred in the USA, Canada, or Australia. Integrated care pathways to psychiatric consultations, psychological therapies, and multidisciplinary follow-up within emergency paediatric services prevented lengthy and repeat hospitalisation for MHR emergencies. Only six of 22 studies adjusted for illness severity and clinical history between before- and after-intervention cohorts and only one reported socio-demographic intervention effects.

DOI: 10.1007/s00787-022-02085-5

PMCID: PMC9510153

PMID: 36151355 [Indexed for MEDLINE]

16. Intern Emerg Med. 2023 Dec 17. doi: 10.1007/s11739-023-03493-4.

Transition of care interventions to manage severe COVID-19 in the ambulatory setting: a systematic review.

Fried S(1), Bar-Shai A(1), Frydman S(2), Freund O(3)(4).

BACKGROUND: Severe COVID-19, with the need in supplemental oxygen and hospitalization, leads to major burden on patients and healthcare systems. As a result, safe and effective ambulatory treatment strategies for severe COVID-19 are of urgent need. In this systematic review, we aimed to evaluate interventions to transition care to the ambulatory setting for patients with active severe COVID-19 that required supplemental oxygen.

METHODS: We searched Medline, Scopus, Web of Science, and DOAJ databases to identify articles with original data published until the 1st of April 2023. Characteristics and outcomes of interventions to transition care to home management were reviewed. Given the heterogeneous settings and outcomes studied, a meta-analysis was not performed.

RESULTS: Of the 235 studies identified, 11 observational studies, with 2645 patients, were included. The interventions were initiated from the emergency department, observation units or inpatient units, and included continuous home telemonitoring (n = 8), mobile applications (n = 2), and patient-initiated medical contact (n = 3). Included patients had an overall short length of hospital stay, high readmission rates, and positive patients' feedback. There was a lack of prospective controlled data and cost-effectiveness analyses.

CONCLUSION: Our findings highlight the potential in treating severe COVID-19 at the ambulatory setting and the lack of high-quality data in this field. Dedicated medical teams, adjusted monitoring methods, improving clinical trajectory, and correct inclusion settings are needed for safe and effective transition of care.

DOI: 10.1007/s11739-023-03493-4

PMID: 38104299

17. J Clin Nurs. 2023 Dec 2. doi: 10.1111/jocn.16947. Online ahead of print.

Effects of nurse-led self-care interventions on health outcomes among people with heart failure: A systematic review and meta-analysis.

Huang Z(1), Liu T(2), Gao R(1), Chair SY(1).

AIM: To estimate the effects of nurse-led self-care interventions on people with heart failure (HF).

BACKGROUND: Research evidence of the effects of nurse-led HF self-care interventions on patient outcomes is scant.

DESIGN: A systematic review and meta-analysis of randomised controlled trials (RCTs).

DATA SOURCES: Six databases (MEDLINE, Embase, Web of Science, CENTRAL, CINAHL and PsycINFO) were searched from the inception to December 2022 to identify eligible studies.

METHODS: RCTs published in English that evaluated the impact of nurse-led HF self-care interventions on quality of life, anxiety, symptom burden, sleep quality, healthcare service utilisation and mortality were included. The risk of bias in included studies was assessed using RoB 2.0. We conducted data syntheses using the R software and graded the quality of the evidence using the GRADE approach. The systematic review was conducted in accordance with the PRISMA.

RESULTS: Twenty-five studies with 2746 subjects were included. Our findings demonstrated, that compared to the controls, nurse-led self-care interventions improved QOL (SMD: .83, 95% CI: .50-1.15, moderate evidence), anxiety (MD: 1.39, 95% CI: .49-2.29, high evidence) and symptom burden (SMD: .81, 95% CI: .24-1.38, low evidence) in people with HF. No significant effects were found in all-cause hospital readmission and all-cause emergency department visit. Research evidence on sleep quality, cardiac-related hospital readmission, cardiac-related emergency department visit and all-cause mortality remained unclear.

CONCLUSIONS: Our review suggests that nurse-led HF self-care interventions have favourable effects on the QOL, anxiety and symptom burden. Further, well-designed RCTs are warranted to address the gaps identified in this review.

RELEVANCE TO CLINICAL PRACTICE: The results indicated that nurse-led HF self-care interventions could improve QOL, anxiety and symptom burden in people with HF. Nurse-led self-care intervention could be integrated into current HF management practices.

DOI: 10.1111/jocn.16947

PMID: 38041606

18. Med Care Res Rev. 2023 Dec;80(6):563-581. doi: 10.1177/10775587231186720. Epub 2023 Jul 12.

A Systematic Review of Outcomes Related to Nurse Practitioner-Delivered Primary Care for Multiple Chronic Conditions.

McMenamin A(1), Turi E(1), Schlak A(2), Poghosyan L(1).

Multiple chronic conditions (MCCs) are more common and costly than any individual health condition in the United States. The growing workforce of nurse practitioners (NPs) plays an active role in providing primary care to this patient population. This study identifies the effect of NP primary care models, compared with models without NP involvement, on cost, quality, and service utilization by patients with MCCs. We conducted a literature search of six

databases and performed critical appraisal. Fifteen studies met inclusion criteria (years: 2003-2021). Overall, most studies showed reduced or similar costs, equivalent or better quality, and similar or lower rates of emergency department use and hospitalization associated with NP primary care models for patients with MCCs, compared with models without NP involvement. No studies found them associated with worse outcomes. Thus, NP primary care models, compared with models without NP involvement, have similar or positive impacts on MCC patient outcomes.

DOI: 10.1177/10775587231186720

PMCID: PMC10784406

PMID: 37438917 [Indexed for MEDLINE]

19. Environ Res. 2023 Dec 1;238(Pt 1):117154. doi: 10.1016/j.envres.2023.117154. Epub 2023 Sep 15.

Emergency department visits associated with wildfire smoke events in California, 2016-2019.

Chen AI(1), Ebisu K(1), Benmarhnia T(2), Basu R(3).

Wildfire smoke has been associated with adverse respiratory outcomes, but the impacts of wildfire on other health outcomes and sensitive subpopulations are not fully understood. We examined associations between smoke events and emergency department visits (EDVs) for respiratory, cardiovascular, diabetes, and mental health outcomes in California during the wildfire season June-December 2016-2019. Daily, zip code tabulation area-level wildfire-specific fine particulate matter (PM2.5) concentrations were aggregated to air basins. A "smoke event" was defined as an air basin-day with a wildfire-specific PM2.5 concentration at or above the 98th percentile across all air basin-days (threshold = 13.5 μg/m3). We conducted a two-stage time-series analysis using quasi-Poisson regression considering lag effects and random effects meta-analysis. We also conducted analyses stratified by race/ethnicity, age, and sex to assess potential effect modification. Smoke events were associated with an increased risk of EDVs for all respiratory diseases at lag 1 [14.4%, 95% confidence interval (CI): (6.8, 22.5)], asthma at lag 0 [57.1% (44.5, 70.8)], and chronic lower respiratory disease at lag 0 [12.7% (6.2, 19.6)]. We also found positive associations with EDVs for all cardiovascular diseases at lag 10. Mixed results were observed for mental health outcomes. Stratified results revealed potential disparities by race/ethnicity. Short-term exposure to smoke events was associated with increased respiratory and schizophrenia EDVs. Cardiovascular impacts may be delayed compared to respiratory outcomes.

DOI: 10.1016/j.envres.2023.117154

PMID: 37716386 [Indexed for MEDLINE]

20. PLoS One. 2023 Dec 5;18(12):e0289035. doi: 10.1371/journal.pone.0289035. eCollection 2023.

Effectiveness of emergency department-based and initiated youth suicide prevention interventions: A systematic review.

Balasa R(1), Lightfoot S(2), Cleverley K(3)(4)(5), Stremler R(3)(6), Szatmari P(7)(8), Alidina Z(9), Korczak D(9)(10).

OBJECTIVE: This systematic review examined the effectiveness of Emergency Department-based and initiated youth suicide prevention interventions for suicide attempts, suicidal ideation, hospitalization, family system functioning, and other mental health symptoms.

METHODS: We searched five databases for randomized controlled trial (RCT) studies that examined Emergency Department-based and initiated suicide prevention interventions among youth aged 10 to 18 years old between May 2020 to June 2022. Using Cohen's d and 95% confidence interval as our standardised metrics, we followed the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) and Synthesis Without Meta-Analysis in Systematic Reviews (SWiM) guidelines when synthesizing, interpreting, and reporting the findings of this review.

RESULTS: Five studies were included in this review. Findings were first synthesized according to the targeted population of the study intervention and this review's outcomes. Two interventions were effective for decreasing depressive symptoms, hospitalization recidivism, and/or increasing family empowerment. There were no interventions that reduced subsequent suicide attempts. A meta-analysis was not conducted due to the heterogeneity of the data.

CONCLUSION: A need exists to develop and evaluate Emergency Department-based and initiated youth suicide prevention interventions that can be successfully and sustainably implemented in practice. Future research should focus on evaluating the components of interventions that effectively mitigate suicide risk among high-risk youth.

DOI: 10.1371/journal.pone.0289035

PMCID: PMC10697510

PMID: 38051744 [Indexed for MEDLINE]

21. World J Emerg Surg. 2023 Dec 19;18(1):59. doi: 10.1186/s13017-023-00527-2.

Artificial Intelligence and Acute Appendicitis: A Systematic Review of Diagnostic and Prognostic Models.

Issaiy M(#)(1)(2), Zarei D(#)(3)(4), Saghazadeh A(5)(6).

BACKGROUND: To assess the efficacy of artificial intelligence (AI) models in diagnosing and prognosticating acute appendicitis (AA) in adult patients compared to traditional methods. AA

is a common cause of emergency department visits and abdominal surgeries. It is typically diagnosed through clinical assessments, laboratory tests, and imaging studies. However, traditional diagnostic methods can be time-consuming and inaccurate. Machine learning models have shown promise in improving diagnostic accuracy and predicting outcomes.

MAIN BODY: A systematic review following the PRISMA guidelines was conducted, searching PubMed, Embase, Scopus, and Web of Science databases. Studies were evaluated for risk of bias using the Prediction Model Risk of Bias Assessment Tool. Data points extracted included model type, input features, validation strategies, and key performance metrics.

RESULTS: In total, 29 studies were analyzed, out of which 21 focused on diagnosis, seven on prognosis, and one on both. Artificial neural networks (ANNs) were the most commonly employed algorithm for diagnosis. Both ANN and logistic regression were also widely used for categorizing types of AA. ANNs showed high performance in most cases, with accuracy rates often exceeding 80% and AUC values peaking at 0.985. The models also demonstrated promising results in predicting postoperative outcomes such as sepsis risk and ICU admission. Risk of bias was identified in a majority of studies, with selection bias and lack of internal validation being the most common issues.

CONCLUSION: AI algorithms demonstrate significant promise in diagnosing and prognosticating AA, often surpassing traditional methods and clinical scores such as the Alvarado scoring system in terms of speed and accuracy.

DOI: 10.1186/s13017-023-00527-2

PMCID: PMC10729387

PMID: 38114983 [Indexed for MEDLINE]

22. Oncologist. 2023 Dec 11;28(12):1020-1033. doi: 10.1093/oncolo/oyad161.

Drivers of Emergency Department Use Among Oncology Patients in the Era of Novel Cancer Therapeutics: A Systematic Review.

Fleshner L(1)(2)(3)(4), Lagree A(1)(2)(3)(5), Shiner A(1)(2)(3)(4), Alera MA(1)(2)(3), Bielecki M(1)(2)(3), Grant R(6)(7), Kiss A(2)(8), Krzyzanowska MK(4)(6)(7)(9)(8), Cheng I(2)(10)(11), Tran WT(1)(2)(3)(4)(5)(12), Gandhi S(2)(4)(7).

BACKGROUND: Patients diagnosed with cancer are frequent users of the emergency department (ED). While many visits are unavoidable, a significant portion may be potentially preventable ED visits (PPEDs). Cancer treatments have greatly advanced, whereby patients may present with unique toxicities from targeted therapies and are often living longer with advanced disease. Prior work focused on patients undergoing cytotoxic chemotherapy, and often excluded those on supportive care alone. Other contributors to ED visits in oncology, such as patient-level variables, are less well-established. Finally, prior studies focused on ED diagnoses to describe trends and did not evaluate PPEDs. An updated systematic review was

completed to focus on PPEDs, novel cancer therapies, and patient-level variables, including those on supportive care alone.

METHODS: Three online databases were used. Included publications were in English, from 2012-2022, with sample sizes of ≥50, and reported predictors of ED presentation or ED diagnoses in oncology.

RESULTS: 45 studies were included. Six studies highlighted PPEDs with variable definitions. Common reasons for ED visits included pain (66%) or chemotherapy toxicities (69.1%). PPEDs were most frequent amongst breast cancer patients (13.4%) or patients receiving cytotoxic chemotherapy (20%). Three manuscripts included immunotherapy agents, and only one focused on end-of-life patients.

CONCLUSION: This updated systematic review highlights variability in oncology ED visits during the last decade. There is limited work on the concept of PPEDs, patient-level variables and patients on supportive care alone. Overall, pain and chemotherapy toxicities remain key drivers of ED visits in cancer patients. Further work is needed in this realm.

DOI: 10.1093/oncolo/oyad161

PMCID: PMC10712716

PMID: 37302801 [Indexed for MEDLINE]

23. J Adv Nurs. 2023 Dec 18. doi: 10.1111/jan.16018. Online ahead of print.

Barriers to healthcare professionals recognizing and managing delirium in older adults during a hospital stay: A mixed-methods systematic review.

Bianchi LA(1), Harris R(2), Fitzpatrick JM(2).

AIM: To investigate barriers to healthcare professionals recognizing and managing delirium in hospitalized older people.DESIGN: A mixed-methods systematic review. PROSPERO ID: CRD42020187932. DATA SOURCES: MEDLINE, EMBASE, PsycINFO and CINAHL were searched (2007 to February 2023).

REVIEW METHODS: Included studies focused on healthcare professionals' recognition and management of delirium for patients aged 65 years and over in a hospital ward or emergency department. Enhancing rigour, screening of results was conducted independently by two researchers. Qualitative and quantitative data were tabulated separately and grouped. Data were compared to identify similarities and differences. All studies were quality appraised.

RESULTS: 43 studies were included; 24 quantitative, 16 qualitative and three mixed-methods. Data synthesis highlighted synergy between qualitative and quantitative findings. Barriers were reflected in six themes: (1) healthcare professionals' knowledge and understanding; (2) communication; (3) workforce development; (4) interprofessional working; (5) confounders; and (6) organizational constraints.

CONCLUSIONS: Of significance, for older adults in hospital experiencing delirium, there is variability in whether and how well it is recognized and managed. To prevent adverse outcomes best practice guidance for screening, recognizing, diagnosing and managing delirium in older people needs to be agreed and disseminated widely. Supporting healthcare professionals to care for this patient population using an integrated approach is essential, how to involve and communicate with patients and their family and friends, how to recognize and manage delirium for patients with additional needs, e.g., those living with dementia and/or a learning disability. Hospitals need to have policy and guidance in place for the recognition and management of delirium in older adults presenting to a ward or to an emergency department. An IT infrastructure is needed that integrates assessments and care management plans in patient electronic records and makes them accessible within and across teams in hospital, primary and community care settings.

PATIENT OR PUBLIC CONTRIBUTION: There was no patient or public contribution to this systematic review.

IMPLICATIONS FOR THE PROFESSION AND PATIENT CARE: Healthcare professionals can be better supported to be able to recognize and manage delirium during an acute hospital stay for older adults. This includes maximizing best care for those patients living with dementia, involving families and friends to help understand patients' baseline status and changes and supporting families and friends during this process. Of significance, attention to hospital IT infrastructures is warranted, integrating screening, assessment and care management plans in patients' electronic records and making these accessible to healthcare professionals caring for this patient population across care settings.

IMPACT: What problem did the study address? Delirium is a common condition experienced by older hospitalized patients, but it is consistently under-recognized which has implications for patient and organization outcomes. To help address this, understanding barriers to healthcare professionals recognizing and managing delirium for this patient population is paramount. What were the main findings? Barriers to healthcare professionals recognizing and managing delirium for this patient population were synthesized in six themes: (1) healthcare professionals' knowledge and understanding, (2) communication; (3) workforce development; (4) interprofessional working; (5) confounders; and (6) organizational constraints. Where and on whom will the research have an impact? The findings of this original systematic review can contribute to hospital policy and protocol for the recognition and management of delirium in older patients. The findings can meaningfully contribute to workforce professional development for practitioners caring for older people during an acute hospital stay and for practitioners in primary and community settings involved in the follow-up of patients post hospital discharge. For researchers, the findings indicate several research recommendations including investigating the impact of an education programme for nurses and other healthcare professionals on the recognition and management of the condition and understanding and investigating how best to support delirium-related distress experienced by patients and their families and practitioners.

Journal report – prosinec 2023

REPORTING METHOD: This systematic review was reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (Page et al., 2021).

DOI: 10.1111/jan.16018

PMID: 38108154

24. Diabetes Ther. 2023 Dec;14(12):1979-1996. doi: 10.1007/s13300-023-01464-8. Epub 2023 Sep 26.

Humanistic and Economic Burden of Patients with Cardiorenal Metabolic Conditions: A Systematic Review.

Ferdinand KC(1), Norris KC(2), Rodbard HW(3), Trujillo JM(4).

INTRODUCTION: Diabetes is associated with significant economic burden. Moreover, cardiovascular disease (CVD), including heart failure, and chronic kidney disease (CKD) are common comorbidities, leading to premature mortality. We conducted a systematic review to assess the humanistic and economic burden of cardio-renal-metabolic (CRM) conditions in individuals ≥ 18 years with CVD, CKD, and type 2 diabetes mellitus.

METHODS: We searched Embase® and Medline® databases from 2011 to January 10, 2022 for English publications reporting humanistic and economic burden outcomes from observational studies, real-world evidence, and economic model studies. Intervention and validation studies were excluded. Study quality was assessed using the Newcastle-Ottawa Scale. Abstracts/posters were identified from four conferences (2020-2022).

RESULTS: Of 1804 studies identified, 22 (including four conference publications) were selected involving 351,296,930 participants (one modeled the US population); eight reported healthcare resource utilization (HCRU), seven only cost data, six HCRU and cost data, one reported quality-of-life data (11/18 and 7/18 had estimated low and medium risk of bias, respectively). Participants were predominantly ≥ 65 years and identified as having White ethnicity. Higher costs and HCRU were observed in patients with all three conditions compared to those with two or none. Urban/metropolitan and insured patients had higher healthcare expenditure and service utilization compared to uninsured and racial/ethnic minority populations. Comorbidities were associated with increased hospitalizations, higher costs, and more emergency department visits. In general, patients identified as having Black ethnicity had low odds of using healthcare services, possibly due to disparities in healthcare access and distrust in the system. Limitations included no adjustment for inflation and a predominance of retrospective studies.

CONCLUSIONS: This review showed a greater economic burden for patients with CRM conditions, with a clear trend between increasing numbers of comorbidities and increasing healthcare costs/resource use. Comparisons between countries are complicated and the scarcity of evidence from minority racial and ethnic groups and lack of data from non-US geographies warrant further investigation.

DOI: 10.1007/s13300-023-01464-8

PMCID: PMC10597898

PMID: 37751142

25. Prehosp Disaster Med. 2023 Dec;38(6):764-773. doi: 10.1017/S1049023X23006507. Epub 2023 Oct 25.

Alcohol-Related Presentations to Emergency Departments on Days with Holidays, Social, and Sporting Events: An Integrative Literature Review.

Hagan SR(1)(2), Crilly J(1)(2)(3), Ranse J(1)(2)(3).

INTRODUCTION: Events, specifically those where excessive alcohol consumption is common, pose a risk to increase alcohol-related presentations to emergency departments (EDs). Limited evidence exists that synthesizes the impact from events on alcohol-related presentations to EDs.

STUDY OBJECTIVE: This integrative review aimed to synthesize the literature regarding the impact events have on alcohol-related presentations to EDs.METHODS: An integrative literature review methodology was guided by the Preferred Reporting Items of Systematic Reviews and Meta-Analysis (PRISMA) Guidelines for data collection, and Whittemore and Knafl's framework for data analysis. Information sources used to identify studies were MEDLINE, CINAHL, and EMBASE, last searched May 26, 2021.

RESULTS: In total, 23 articles describing 46 events met criteria for inclusion. There was a noted increase in alcohol-related presentations to EDs from 27 events, decrease from eight events, and no change from 25 events. Public holidays, music festivals, and sporting events resulted in the majority of increased alcohol-related presentations to EDs. Few articles focused on ED length-of-stay (LOS), treatment, and disposition.

CONCLUSION: An increase in the consumption of alcohol from holiday, social, and sporting events pose the risk for an influx of presentations to EDs and as a result may negatively impact departmental flow. Further research examining health service outcomes is required that considers the impact of events from a local, national, and global perspective.

DOI: 10.1017/S1049023X23006507

PMCID: PMC10694469

PMID: 37877224 [Indexed for MEDLINE]

Journal report – prosinec 2023

26. Aust N Z J Psychiatry. 2023 Dec 23:48674231216348. doi: 10.1177/00048674231216348.

The effectiveness of brief non-pharmacological interventions in emergency departments and psychiatric inpatient units for people in crisis: A systematic review and narrative synthesis.

Huber JP(1)(2)(3), Milton A(1)(2), Brewer MC(3), Norrie LM(3), Hartog SM(2), Glozier N(2)(3).

OBJECTIVE: Heterogeneous brief non-pharmacological interventions and guidelines exist to treat the burgeoning presentations to both emergency department and inpatient settings, for those in a crisis of mental ill-health. We systematically reviewed the literature to create a taxonomy of these brief non-pharmacological interventions, and review their evaluation methods and effectiveness.

METHOD: We conducted a systematic review across Cochrane, CINAHL, DARE, Embase, MEDLINE, PsycINFO databases. Studies meeting quality criteria, using Joanna Briggs Institute tools, were eligible. Interventions were categorised, and outcomes synthesised.

RESULTS: Thirty-nine studies were included: 8 randomised controlled trials, 17 quasi-experimental, 11 qualitative studies, and 3 file audits. Taxonomy produced six coherent intervention types: Skills-focussed, Environment-focussed, Special Observation, Psychoeducation, Multicomponent Group and Multicomponent Individual. Despite this, a broad and inconsistent range of outcome measures reflected different outcome priorities and prevented systematic comparison of different types of intervention or meta-analysis. Few brief non-pharmacological interventions had consistent evidential support: sensory modulation rooms consistently improved distress in inpatient settings. Short admissions may reduce suicide attempts and readmission, if accompanied by psychotherapy. Suicide-specific interventions in emergency departments may improve depressive symptoms, but not suicide attempt rates. There was evidence that brief non-pharmacological interventions did not reduce incidence of self-harm on inpatient wards. We found no evidence for frequently used interventions such as no-suicide contracting, special observation or inpatient self-harm interventions.

CONCLUSION: Categorising brief non-pharmacological interventions is feasible, but an evidence base for many is severely limited if not missing. Even when there is evidence, the inconsistency in outcomes often precludes clinicians from making inferences, although some interventions show promise.

DOI: 10.1177/00048674231216348

PMID: 38140961

27. Acta Psychiatr Scand. 2023 Dec;148(6):491-524. doi: 10.1111/acps.13620. Epub 2023 Oct 30.

Meta-analysis of clinical risk factors for suicide among people presenting to emergency departments and general hospitals with suicidal thoughts and behaviours.

Grover C(1), Huber J(1)(2), Brewer M(1), Basu A(3)(4), Large M(3)(4).

BACKGROUND: Suicidal thoughts and behaviours (STB) are a common reason for presentation to emergency departments and general hospitals. A meta-analysis of the strength of clinical risk factors for subsequent suicide might aid understanding of suicidal behaviour and help suicide prevention.

METHODS: We conducted a meta-analysis of cohort and controlled studies on clinical risk factors and later suicide among people presenting to emergency departments and general hospitals with STB. Data were extracted from papers meeting inclusion criteria, published in Medline, PsycINFO, and Embase between 1 January 1960 and 10 October 2022 using papers located with the search terms ((suicide*).m_titl AND (emergency* OR accident and emergency OR casualty OR general hospital OR toxicology service).mp) or were indexed in PubMed and had titles located with the search terms (suicide* OR self-harm OR self-harm OR self-injury OR self-injury OR self-poisoning OR self-poisoning OR overdose OR para-suicide OR parasuicide [title/abstract]) AND (Emergency department OR emergency room OR Casualty OR general hospital OR toxicology OR accident and emergency [all fields]). Data about the association between clinical risk factors and suicide extracted from three or more studies were included in a random-effects meta-analysis of the odds of later death by suicide. The study was registered in PROSPERO and conducted according to MOOSE and PRISMA guidelines.

RESULTS: Seventy-five studies reported on 741,624 people, of which 19,649 died by suicide (2.65%). Male sex (odds ratio (OR) = 1.99) and age (OR = 2.01) were the most consistently reported risk factors. The strongest associations with subsequent death by suicide related to violent self-harm methods at the hospital presentation, including: unspecified violent method (OR = 4.97), any violent method (OR = 4.57) and the specific violent methods of drowning (OR = 4.32), hanging (OR = 4.26), and use of firearms (OR = 10.08). Patients categorised as higher risk using suicide prediction scales or any other method that combined risk factors had moderately increased odds of suicide (OR = 2.58). Younger age, Black and Hispanic ethnicity, overdose, a diagnosis of adjustment disorder, and the absence of any psychiatric diagnosis were protective against suicide.

CONCLUSIONS: Most risk factors for suicide among people who have presented with STB are not strongly associated with later suicide. The strongest risk factors relate to self-harm methods. In the absence of clear indicators of future suicide, all people presenting with suicidality warrant a thorough assessment of their needs, and further research is needed before we can meaningfully categorise people with STB according to suicide risk.

DOI: 10.1111/acps.13620

PMID: 37904016 [Indexed for MEDLINE]

Journal report – prosinec 2023

28. Health Soc Care Deliv Res. 2023 Dec;11(25):1-221. doi: 10.3310/PBSM2274.

Evaluating mental health decision units in acute care pathways (DECISION): a quasi-experimental, qualitative and health economic evaluation.

Gillard S(1), Anderson K(1), Clarke G(2), Crowe C(3), Goldsmith L(4), Jarman H(5), Johnson S(6), Lomani J(1), McDaid D(7), Pariza P(2), Park AL(7), Smith J(4), Turner K(4), Yoeli H(1).

BACKGROUND: People experiencing mental health crises in the community often present to emergency departments and are admitted to a psychiatric hospital. Because of the demands on emergency department and inpatient care, psychiatric decision units have emerged to provide a more suitable environment for assessment and signposting to appropriate care.

OBJECTIVES: The study aimed to ascertain the structure and activities of psychiatric decision units in England and to provide an evidence base for their effectiveness, costs and benefits, and optimal configuration.

DESIGN: This was a mixed-methods study comprising survey, systematic review, interrupted time series, synthetic control study, cohort study, qualitative interview study and health economic evaluation, using a critical interpretive synthesis approach.

SETTING: The study took place in four mental health National Health Service trusts with psychiatric decision units, and six acute hospital National Health Service trusts where emergency departments referred to psychiatric decision units in each mental health trust.

PARTICIPANTS: Participants in the cohort study (n = 2110) were first-time referrals to psychiatric decision units for two 5-month periods from 1 October 2018 and 1 October 2019, respectively. Participants in the qualitative study were first-time referrals to psychiatric decision units recruited within 1 month of discharge (n = 39), members of psychiatric decision unit clinical teams (n = 15) and clinicians referring to psychiatric decision units (n = 19).

OUTCOMES: Primary mental health outcome in the interrupted time series and cohort study was informal psychiatric hospital admission, and in the synthetic control any psychiatric hospital admission; primary emergency department outcome in the interrupted time series and synthetic control was mental health attendance at emergency department. Data for the interrupted time series and cohort study were extracted from electronic patient record in mental health and acute trusts; data for the synthetic control study were obtained through NHS Digital from Hospital Episode Statistics admitted patient care for psychiatric admissions and Hospital Episode Statistics Accident and Emergency for emergency department attendances. The health economic evaluation used data from all studies. Relevant databases were searched for controlled or comparison group studies of hospital-based mental health assessments permitting overnight stays of a maximum of 1 week that measured adult acute psychiatric admissions and/or mental health presentations at emergency department. Selection, data extraction and quality rating of studies were double assessed. Narrative synthesis of included studies was undertaken and meta-analyses were performed where sufficient studies reported outcomes.

RESULTS: Psychiatric decision units have the potential to reduce informal psychiatric admissions, mental health presentations and wait times at emergency department. Cost savings are largely marginal and do not offset the cost of units. First-time referrals to psychiatric decision units use more inpatient and community care and less emergency department-based liaison psychiatry in the months following the first visit. Psychiatric decision units work best when configured to reduce either informal psychiatric admissions (longer length of stay, higher staff-to-patient ratio, use of psychosocial interventions), resulting in improved quality of crisis care or demand on the emergency department (higher capacity, shorter length of stay). To function well, psychiatric decision units should be integrated into the crisis care pathway alongside a range of community-based support.

LIMITATIONS: The availability and quality of data imposed limitations on the reliability of some analyses. FUTURE WORK: Psychiatric decision units should not be commissioned with an expectation of short-term financial return on investment but, if appropriately configured, they can provide better quality of care for people in crisis who would not benefit from acute admission or reduce pressure on emergency department.

STUDY REGISTRATION: The systematic review was registered on the International Prospective Register of Systematic Reviews as CRD42019151043. FUNDING: This award was funded by the National Institute for Health and Care Research (NIHR) Health and Social Care Delivery Research programme (NIHR award ref: 17/49/70) and is published in full in Health and Social Care Delivery Research; Vol. 11, No. 25. See the NIHR Funding and Awards website for further award information.

Plain Language Summary: People who experience mental health crises often go to a hospital emergency department and can be admitted to a psychiatric hospital. Emergency departments and psychiatric wards are not always the best environments for supporting people in a crisis. Emergency departments are overcrowded and waits can be very long; psychiatric wards are also very busy. Psychiatric decision units have been introduced to reduce pressure and improve experiences of crisis care. Psychiatric decision units are short-stay hospital-based units where people can be assessed and signposted to the most appropriate care. This study aimed to evaluate the effect of psychiatric decision units on emergency department visits, psychiatric admissions and the cost of mental health care, and to consider the best way for psychiatric decision units to be structured. We looked at research on similar units internationally and identified all psychiatric decision units in England. We evaluated the impact of psychiatric decision units four mental health NHS trusts on emergency department visits and psychiatric admissions by examining electronic patient records in the 2 years before and after units opened, and by comparing records in areas with and without psychiatric decision units using data from NHS Digital. We compared mental health services used by people in the 9 months before and after their first psychiatric decision unit stay. We interviewed people about their experiences of the psychiatric decision unit and crisis care. We also interviewed staff working on and referring people to psychiatric decision units. There were some reductions in psychiatric admissions, emergency department visits and wait times following opening of psychiatric decision units. The resulting cost savings were small and did not outweigh the costs

of running psychiatric decision units. People mostly found units safe, calming and supportive, except where they were discharged too quickly. Psychiatric decision units worked best to reduce psychiatric admissions and improve quality of crisis care where stays were longer and staffing levels higher. Psychiatric decision units had more impact on emergency departments where they were larger and stays were shorter.

DOI: 10.3310/PBSM2274

PMID: 38149657 [Indexed for MEDLINE]

29. BMC Geriatr. 2023 Dec 5;23(1):809. doi: 10.1186/s12877-023-04373-4.

Acute care models for older people living with frailty: a systematic review and taxonomy.

Knight T(1), Kamwa V(2), Atkin C(2), Green C(3), Ragunathan J(4), Lasserson D(5), Sapey E(2).

BACKGROUND: The need to improve the acute care pathway to meet the care needs of older people living with frailty is a strategic priority for many healthcare systems. The optimal care model for this patient group is unclear.

METHODS: A systematic review was conducted to derive a taxonomy of acute care models for older people with acute medical illness and describe the outcomes used to assess their effectiveness. Care models providing time-limited episodes of care (up to 14 days) within 48 h of presentation to patients over the age of 65 with acute medical illness were included. Care models based in hospital and community settings were eligible. Searches were undertaken in Medline, Embase, CINAHL and Cochrane databases. Interventions were described and classified in detail using a modified version of the TIDIeR checklist for complex interventions. Outcomes were described and classified using the Core Outcome Measures in Effectiveness Trials (COMET) taxonomy. Risk of bias was assessed using RoB2 and ROBINS-I.

RESULTS: The inclusion criteria were met by 103 articles. Four classes of acute care model were identified, acute-bed based care, hospital at home, emergency department in-reach and care home models. The field is dominated by small single centre randomised and non-randomised studies. Most studies were judged to be at risk of bias. A range of outcome measures were reported with little consistency between studies. Evidence of effectiveness was limited.

CONCLUSION: Acute care models for older people living with frailty are heterogenous. The clinical effectiveness of these models cannot be conclusively established from the available evidence. TRIAL REGISTRATION: PROSPERO registration (CRD42021279131).

DOI: 10.1186/s12877-023-04373-4

PMCID: PMC10699071

PMID: 38053044 [Indexed for MEDLINE]

30. BMC Med. 2023 Dec 21;21(1):511. doi: 10.1186/s12916-023-03219-5.

A systematic review and meta-analysis of short-stay programmes for total hip and knee replacement, focusing on safety and optimal patient selection.

Berkovic D(1), Vallance P(2), Harris IA(3)(4), Naylor JM(3)(5), Lewis PL(6), de Steiger R(7), Buchbinder R(1), Ademi Z(1)(8), Soh SE(1)(2), Ackerman IN(9).

BACKGROUND: Short-stay joint replacement programmes are used in many countries but there has been little scrutiny of safety outcomes in the literature. We aimed to systematically review evidence on the safety of short-stay programmes versus usual care for total hip (THR) and knee replacement (KR), and optimal patient selection.

METHODS: A systematic review and meta-analysis. Randomised controlled trials (RCTs) and quasi-experimental studies including a comparator group reporting on 14 safety outcomes (hospital readmissions, reoperations, blood loss, emergency department visits, infection, mortality, neurovascular injury, other complications, periprosthetic fractures, postoperative falls, venous thromboembolism, wound complications, dislocation, stiffness) within 90 days postoperatively in adults ≥ 18 years undergoing primary THR or KR were included. Secondary outcomes were associations between patient demographics or clinical characteristics and patient outcomes. Four databases were searched between January 2000 and May 2023. Risk of bias and certainty of the evidence were assessed.

RESULTS: Forty-nine studies were included. Based upon low certainty RCT evidence, short-stay programmes may not reduce readmission (OR 0.95, 95% CI 0.12-7.43); blood transfusion requirements (OR 1.75, 95% CI 0.27-11.36); neurovascular injury (OR 0.31, 95% CI 0.01-7.92); other complications (OR 0.63, 95% CI 0.26-1.53); or stiffness (OR 1.04, 95% CI 0.53-2.05). For registry studies, there was no difference in readmission, infection, neurovascular injury, other complications, venous thromboembolism, or wound complications but there were reductions in mortality and dislocations. For interrupted time series studies, there was no difference in readmissions, reoperations, blood loss volume, emergency department visits, infection, mortality, or neurovascular injury; reduced odds of blood transfusion and other complications, but increased odds of periprosthetic fracture. For other observational studies, there was an increased risk of readmission, no difference in blood loss volume, infection, other complications, or wound complications, reduced odds of requiring blood transfusion, reduced mortality, and reduced venous thromboembolism. One study examined an outcome relevant to optimal patient selection; it reported comparable blood loss for short-stay male and female participants (p = 0.814).

CONCLUSIONS: There is low certainty evidence that short-stay programmes for THR and KR may have non-inferior 90-day safety outcomes. There is little evidence on factors informing optimal patient selection; this remains an important knowledge gap.

DOI: 10.1186/s12916-023-03219-5

PMID: 38129857 [Indexed for MEDLINE]

31. Australas Emerg Care. 2023 Dec;26(4):352-359. doi: 10.1016/j.auec.2023.06.001. Epub 2023 Jul 7.

Educational programs for implementing ultrasound guided peripheral intravenous catheter insertion in emergency departments: A systematic integrative literature review.

Stone R(1), Walker RM(2), Marsh N(3), Ullman AJ(4).

BACKGROUND: Ultrasound-guided peripheral intravenous catheter insertion has been identified as an effective method to improve the success rate of cannulation, thereby improving patient experience. However, learning this new skill is complex, and involves training clinicians from a variety of backgrounds. The aim of this study was to appraise and compare literature on educational methods in the emergency setting used to support ultrasound guided peripheral intravenous catheter insertion by different clinicians, and how effective these current methods are.

REVIEW METHODS: A systematic integrative review was undertaken using Whittemore and Knafl's five stage approach. The Mixed Methods Appraisal Tool was used to assess the quality of the studies.

RESULTS: Forty-five studies met the inclusion criteria, with five themes identified. These were: the variety of educational methods and approaches; the effectiveness of the different educational methods; barriers and facilitators of education; clinician competency assessments and pathways; clinician confidence assessment and pathways.

CONCLUSIONS: This review demonstrates that a variety of educational methods are being used in successfully training emergency department clinicians in using ultrasound guidance for peripheral intravenous catheter insertion. Furthermore, this training has resulted in safer and more effective vascular access. However, it is evident that there is a lack of consistency of formalised education programs available. A standardised formal education program and increased availability of ultrasound machines in the emergency department will ensure consistent practices are maintained, retained, therefore leading to safer practice as well as more satisfied patients.

DOI: 10.1016/j.auec.2023.06.001

PMID: 37423812 [Indexed for MEDLINE]

32. Ann Emerg Med. 2023 Dec 6:S0196-0644(23)01301-X. doi: 10.1016/j.annemergmed.2023.10.010. Online ahead of print.

Social Determinants of Health and Pediatric Emergency Department Outcomes: A Systematic Review and Meta-Analysis of Observational Studies.

Amjad S(1), Tromburg C(1), Adesunkanmi M(1), Mawa J(2), Mahbub N(2), Campbell S(3), Chari R(1), Rowe BH(4), Ospina MB(5).

STUDY OBJECTIVE: Social determinants of health contribute to disparities in pediatric health and health care. Our objective was to synthesize and evaluate the evidence on the association between social determinants of health and emergency department (ED) outcomes in pediatric populations.

METHODS: This review was conducted in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses-Equity Extension guidelines. Observational epidemiological studies were included if they examined at least 1 social determinant of health from the PROGRESS-Plus framework in relation to ED outcomes among children <18 years old. Effect direction plots were used for narrative results and pooled odds ratios (pOR) with 95% confidence intervals (CI) for meta-analyses.

RESULTS: Fifty-eight studies were included, involving 17,275,090 children and 103,296,839 ED visits. Race/ethnicity and socioeconomic status were the most reported social determinants of health (71% each). Black children had 3 times the odds of utilizing the ED (pOR 3.16, 95% CI 2.46 to 4.08), whereas visits by Indigenous children increased the odds of departure prior to completion of care (pOR 1.58, 95% CI 1.39 to 1.80) compared to White children. Public insurance, low income, neighborhood deprivation, and proximity to an ED were also predictors of ED utilization. Children whose caregivers had a preferred language other than English had longer length of stay and increased hospital admission.

CONCLUSION: Social determinants of health, particularly race, socioeconomic deprivation, proximity to an ED, and language, play important roles in ED care-seeking patterns of children and families. Increased utilization of ED services by children from racial minority and lower socioeconomic status groups may reflect barriers to health insurance and access to health care, including primary and subspecialty care, and/or poorer overall health, necessitating ED care. An intersectional approach is needed to better understand the trajectories of disparities in pediatric ED outcomes and to develop, implement, and evaluate future policies.

DOI: 10.1016/j.annemergmed.2023.10.010

PMID: 38069966

33. Heliyon. 2023 Dec 3;10(1):e23227. doi: 10.1016/j.heliyon.2023.e23227. eCollection 2024 Jan 15.

A systematic review of tools for predicting complications in patients with influenza-like illness.

Marx T(1), Khelifi N(1), Xu I(1), Ouellet L(1), Poirier A(1), Huard B(1), Mallet M(1), Bergeron F(2), Boissinot M(3), Bergeron MG(3), Berthelot S(1)(4).

OBJECTIVE: To identify tools that predict the risk of complications for patients presenting to an outpatient clinic or an emergency department (ED) with influenza-like illness.

METHODS: We searched Medline, Embase, Cochrane Library and CINAHL from inception to July 2023. We included articles reporting on the derivation or validation of a score or algorithm

used to stratify the risk of hospitalization or mortality among patients with influenza-like illness in the ED or outpatient clinic.

RESULTS: Twelve articles reporting on eight scores and six predictive models were identified. For predicting the need for hospitalization, the area under the curve (AUC) of the PMEWS and the CURB-65 ranged respectively from 0.76 to 0.94, and 0.65 to 0.88. The Community Assessment Tool had an AUC of 0.62. For predicting inpatient mortality, AUC was 0.66 for PMEWS and 0.79 for CURB-65, 0.79 for the SIRS criteria and 0.86 for the qSOFA score. Two scores were developed without external validation during the Covid-19 pandemic. The CovHos score and the Canadian Covid discharge score had an AUC ranged from 0.70 to 0.91. The predictive models performed adequately (AUC from 0.76 to 0.92) but will require external validation for clinical use. Tool diversity and study population heterogeneity precluded meta-analysis.

CONCLUSION: Although the CURB, PMEWS and qSOFA scores appear to predict accurately the risk of complications of influenza-like illness, none were reliable enough to justify their widespread ED use. Refinement of an existing tool or development of a new tool to optimize the management of these patients is needed.

DOI: 10.1016/j.heliyon.2023.e23227

PMCID: PMC10755309

PMID: 38163091

34. Occup Med (Lond). 2023 Dec 11:kqad123. doi: 10.1093/occmed/kqad123.

Workplace violence in radiology: results of a systematic review.

Busch IM(1), Rimondini M(1), Scott SD(2), Moretti F(1), Cecchin D(3), Wu AW(4), Giraudo C(3).

BACKGROUND: Workplace violence (WPV) is a growing issue in health care with far-reaching consequences for health workers' physical and psychological well-being. While some medical specialities like emergency medicine have always been considered at higher risk for WPV, several studies have also reported its occurrence in radiology.

AIMS: This systematic review aimed to comprehensively synthesize the types of WPV in radiology, its psychological impact, and the underlying risk and protective factors.

METHODS: We searched five electronic databases (PubMed, Web of Science Core Collection, Scopus, PsycINFO and CINAHL) and additional literature, including grey literature, and established weekly search alerts. Two reviewers independently conducted all methodological steps, involving a third reviewer in case of disagreement.

RESULTS: Of the 12 205 retrieved records, 103 full-text articles were evaluated, and 15 studies were included. Across studies, verbal aggression, sexual harassment (mostly against women) and physical violence were experienced by up to 100%, 85% and 46% of health workers, respectively. Perpetrators were patients and patients' caregivers, followed by co-workers.

Victims suffered from various psychological symptoms, such as anxiety (22%-54%), fear (6%-39%), depression (32%) and repeated disturbing memories (21%). Risk factors included female gender, understaffing, worker inexperience, poor communication and lengthy waiting times. Social support and security personnel presence were among the identified protective factors.

CONCLUSIONS: Health workers are at high risk of experiencing WPV in the radiological setting, with a strong psychological impact. Radiological departments should create a safe healthcare environment that actively manages the identified risk factors and offers psychological support to affected workers.

DOI: 10.1093/occmed/kqad123

PMID: 38072465

35. Int J Qual Health Care. 2023 Dec 26;35(4):mzad102. doi: 10.1093/intqhc/mzad102.

Patient- and family-centred care transition interventions for adults: a systematic review and meta-analysis of RCTs.

Chartrand J(1), Shea B(2)(3)(4), Hutton B(2)(3), Dingwall O(5)(6), Kakkar A(6), Chartrand M(7), Poulin A(1), Backman C(1)(3)(8).

Although patient centredness is part of providing high-quality health care, little is known about the effectiveness of care transition interventions that involve patients and their families on readmissions to the hospital or emergency visits post-discharge. This systematic review (SR) aimed to examine the evidence on patient- and family-centred (PFC) care transition interventions and evaluate their effectiveness on adults' hospital readmissions and emergency department (ED) visits after discharge. Searches of Medline, CINAHL, and Embase databases were conducted from the earliest available online year of indexing up to and including 14 March 2021. The studies included: (i) were about care transitions (hospital to home) of ≥18-year-old patients; (ii) had components of patient-centred care and care transition frameworks; (iii) reported on one or more outcomes were among hospital readmissions and ED visits after discharge; and (iv) were cluster-, pilot- or randomized-controlled trials published in English or French. Study selection, data extraction, and risk of bias assessment were completed by two independent reviewers. A narrative synthesis was performed, and pooled odd ratios, standardized mean differences, and mean differences were calculated using a random-effects meta-analysis. Of the 10,021 citations screened, 50 trials were included in the SR and 44 were included in the meta-analyses. Care transition intervention types included health assessment, symptom and disease management, medication reconciliation, discharge planning, risk management, complication detection, and emotional support. Results showed that PFC care transition interventions significantly reduced the risk of hospital readmission rates compared to usual care [incident rate ratio (IRR), 0.86; 95% confidence interval (CI), 0.75-0.98; I2 = 73%] regardless of time elapsed since discharge. However, these same interventions had minimal impact on the risk of ED visit rates compared to usual care group regardless of time passed after discharge (IRR, 1.00; 95% CI, 0.85-1.18; I2 = 29%). PFC care transition interventions

containing a greater number of patient-centred care (IRR, 0.73; 95% CI, 0.57-0.94; I2 = 59%) and care transition components (IRR, 0.76; 95% CI, 0.64-0.91; I2 = 4%) significantly decreased the risk of patients being readmitted. However, these interventions did not significantly increase the risk of patients visiting the ED after discharge (IRR, 1.54; CI 95%, 0.91-2.61). Future interventions should focus on patients' and families' values, beliefs, needs, preferences, race, age, gender, and social determinants of health to improve the quality of adults' care transitions.

DOI: 10.1093/intqhc/mzad102

PMCID: PMC10750974

PMID: 38147502 [Indexed for MEDLINE]

36. BMC Psychiatry. 2023 Dec 18;23(1):952. doi: 10.1186/s12888-023-05440-1.

Relational continuity may give better clinical outcomes in patients with serious mental illness - a systematic review.

Engström I(1), Hansson L(2), Ali L(3), Berg J(4), Ekstedt M(5), Engström S(6), Fredriksson MK(4), Liliemark J(4), Lytsy P(4).

BACKGROUND: Continuity of care is considered important for results of treatment of serious mental illness (SMI). Yet, evidence of associations between relational continuity and different medical and social outcomes is sparse. Research approaches differ considerably regarding how to best assess continuity as well as which outcome to study. It has hitherto been difficult to evaluate the importance of relational continuity of care. The aim of this systematic review was to investigate treatment outcomes, including effects on resource use and costs associated with receiving higher relational continuity of care for patients with SMI.

METHODS: Eleven databases were searched between January 2000 and February 2021 for studies investigating associations between some measure of relational continuity and health outcomes and costs. All eligible studies were assessed for study relevance and risk of bias by at least two independent reviewers. Only studies with acceptable risk of bias were included. Due to study heterogeneity the synthesis was made narratively, without meta-analysis. The certainty of the summarized result was assessed using GRADE. Study registration number in PROSPERO: CRD42020196518.

RESULTS: We identified 8 916 unique references and included 17 studies comprising around 300 000 patients in the review. The results were described with regard to seven outcomes. The results indicated that higher relational continuity of care for patients with serious mental illness may prevent premature deaths and suicide, may lower the number of emergency department (ED) visits and may contribute to a better quality of life compared to patients receiving lower levels of relational continuity of care. The certainty of the evidence was assessed as low or very low for all outcomes. The certainty of results for the outcomes

hospitalization, costs, symptoms and functioning, and adherence to drug treatment was very low with the result that no reliable conclusions could be drawn in these areas.

CONCLUSIONS: The results of this systematic review indicate that having higher relational continuity of care may have beneficial effects for patients with severe mental illness, and no results have indicated the opposite relationship. There is a need for better studies using clear and distinctive measures of exposure for relational continuity of care.

DOI: 10.1186/s12888-023-05440-1

PMCID: PMC10729558

PMID: 38110889 [Indexed for MEDLINE]

37. Ann Emerg Med. 2023 Dec 22:S0196-0644(23)01381-1. doi: 10.1016/j.annemergmed.2023.11.012.

Clinical Practice Guideline Recommendations in Pediatric Mild Traumatic Brain Injury: A Systematic Review.

Moore L(1), Ben Abdeljelil A(2), Tardif PA(3), Zemek R(4), Reed N(5), Yeates KO(6), Emery CA(7), Gagnon IJ(8), Yanchar N(9), Bérubé M(10), Dawson J(11), Berthelot S(3), Stang A(12), Beno S(13), Beaulieu E(14), Turgeon AF(15), Labrosse M(16), Lauzier F(15), Pike I(17), Macpherson A(18), Freire GC(19).

STUDY OBJECTIVE: Our primary objectives were to identify clinical practice guideline recommendations for children with acute mild traumatic brain injury (mTBI) presenting to an emergency department (ED), appraise their overall quality, and synthesize the quality of evidence and the strength of included recommendations.

METHODS: We searched MEDLINE, EMBASE, Cochrane Central, Web of Science, and medical association websites from January 2012 to May 2023 for clinical practice guidelines with at least 1 recommendation targeting pediatric mTBI populations presenting to the ED within 48 hours of injury for any diagnostic or therapeutic intervention in the acute phase of care (ED and inhospital). Pairs of reviewers independently assessed overall clinical practice guideline quality using the Appraisal of Guidelines Research and Evaluation (AGREE) II tool. The quality of evidence on recommendations was synthesized using a matrix based on the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) Evidence-to-Decision framework.

RESULTS: We included 11 clinical practice guidelines, of which 6 (55%) were rated high quality. These included 101 recommendations, of which 34 (34%) were based on moderate- to high-quality evidence, covering initial assessment, initial diagnostic imaging, monitoring/observation, therapeutic interventions, discharge advice, follow-up, and patient and family support. We did not identify any evidence-based recommendations in high-quality clinical practice guidelines for repeat imaging, neurosurgical consultation, or hospital

admission. Lack of strategies and tools to aid implementation and editorial independence were the most common methodological weaknesses.

CONCLUSIONS: We identified 34 recommendations based on moderate- to high-quality evidence that may be considered for implementation in clinical settings. Our review highlights important areas for future research. This review also underlines the importance of providing strategies to facilitate the implementation of clinical practice guideline recommendations for pediatric mTBI.

DOI: 10.1016/j.annemergmed.2023.11.012

PMID: 38142375

38. Rev Esp Quimioter. 2023 Dec 7:julian07dec2023. doi: 10.37201/req/099.2023.

[Diagnostic accuracy of procalcitonin for bacteremia in the emergency department: a systematic review]. [Article in Spanish]

Julián-Jiménez A(1), Eduardo García D, Merinos-Sánchez G, García de Guadiana-Romualdo L, González Del Castillo J.

OBJECTIVE: Obtaining blood cultures (HC) is performed in 15% of the patients treated with suspicion of infection in the Hospital Emergency Services (ED) with a variable diagnostic yield (2-20%). The 30-day mortality of patients with bacteremia is two or three times higher than the rest with the same process. Procalcitonin (PCT) is a biomarker that has been used as a tool to help predict bacteremia in HEDs. The main objective of this systematic review is to investigate the diagnostic accuracy of PCT in predicting true bacteraemia in adult patients treated with clinical suspicion of infection in the ED, as well as to identify a specific PCT value as the most relevant from the clinical decision diagnostic point of view that can be recommended for decision making.

METHODS: A systematic review was performed following the PRISMA guidelines in the PubMed, Web of Science, EMBASE, Lilacs, Cochrane, Epistemonikos, Tripdatabase and ClinicalTrials.gov databases from January 2010 to May 31, 2023 without language restrictions and using a combination of MESH terms: "Bacteremia/ Bacteraemia/ Blood Stream Infection", "Procalcitonin", "Emergencies/ Emergency/ Emergency Department" and "Adults". Observational cohort studies and partially an systematic review were included. No meta-analysis techniques were performed, but the results were compared narratively.

RESULTS: A total of 1,372 articles were identified, of which 20 that met the inclusion criteria were finally analyzed. The included studies represent a total of 18,120 processed HC with 2,877 bacteraemias (15.88%). Ten studies were rated as high, 9 moderate and 1 low quality. The AUC-COR of all the studies ranges from 0.68 (95% CI: 0.59-0.77) to 0.98 (95% CI: 0.97-0.99). The PCT value >0.5 ng/ml is the most widely used and proposed in up to ten of the works included in this systematic review, whose estimated mean yield is an AUC-COR of 0.833. If only the

results of the 6 high-quality studies using a cut-off point (PC) >0.5 ng/mL PCT are taken into account, the estimated mean AUC-COR result is 0.89 with Se of 77.6% and It is 78%.

CONCLUSIONS: PCT has a considerable diagnostic accuracy of bacteraemia in patients treated in EDs for different infectious processes. The CP>0.5 ng/ml has been positioned as the most suitable for predicting the existence of bacteraemia and can be used to reasonably rule it out.

DOI: 10.37201/req/099.2023

PMID: 38058128

39. BMC Public Health. 2023 Dec 21;23(1):2560. doi: 10.1186/s12889-023-17474-x.

Respiratory syncytial virus disease morbidity in Australian infants aged 0 to 6 months: a systematic review with narrative synthesis.

Self A(1), Van Buskirk J(2)(3), Clark J(4), Cochrane JE(4), Knibbs L(2)(3), Cass-Verco J(5), Gupta L(4).

BACKGROUND: A significant proportion of the global respiratory syncytial virus (RSV) associated morbidity is accounted for by infants aged 0 to 6 months, who are particularly vulnerable to severe disease. In 2015, 44% of global hospitalisations in infants in this age group were secondary to RSV. The objective of this systematic review is to appraise and synthesise the local evidence of RSV infection morbidity among Australian infants aged 0 to 6 months and to assess the implications for future immunisation strategies.

METHODS: Electronic databases (Medline, Embase, Pubmed and Global Health) were searched for full-text articles published between 2000 and 2023 in English language. Studies that examined markers of RSV disease morbidity in infants aged 0 to 6 months in Australia who had laboratory confirmed RSV infection were eligible for inclusion. The outcomes of interest were incidence, prevalence, testing rate, positivity rate, mortality, emergency department visits, community health visits, hospitalisation, intensive care unit admission, supplementary oxygen use, mechanical ventilation, risk factors for disease severity and monoclonal antibody use.

RESULTS: The database search identified 469 studies. After removal of duplicates and full-text review, 17 articles were eligible for inclusion. This review was reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses and Synthesis without meta-analysis guidelines.

CONCLUSIONS: Qualitative analysis of the included studies showed that Australian infants aged 0 to 6 months have higher rates of RSV testing, positivity and incidence; and more likely to develop severe disease that requires hospitalisation, intensive care unit admission or respiratory support, compared to children and adults of all ages. Aboriginal and Torres Strait Islander infants aged 0 to 6 months demonstrated higher rates of RSV infection and hospitalisation, compared to non-Indigenous infants. Age-related trends persisted in geographic areas with varying seasonal transmission of RSV, and during the SARS-CoV-2

pandemic. Passive immunisation strategies targeting infants in their first 6 months of life, either via vaccination of pregnant women or administration of long-acting monoclonal antibody during infancy, could effectively reduce RSV disease burden in Australia.

DOI: 10.1186/s12889-023-17474-x

PMCID: PMC10740277

PMID: 38129854 [Indexed for MEDLINE]

40. J Trauma Acute Care Surg. 2023 Dec 1;95(6):959-968. doi: 10.1097/TA.0000000000004004. Epub 2023 Jun 16.

Patient-controlled analgesia for the management of adults with acute trauma in the emergency department: A systematic review and meta-analysis.

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BACKGROUND: Patient-controlled analgesia (PCA) has potential as a form of analgesia for trauma patients in the emergency department (ED). The objective of this review was to evaluate the effectiveness and safety of PCA for the management of adults with acute traumatic pain in the ED. The hypothesis was that PCA can effectively treat acute trauma pain in adults in the ED, with minimal adverse outcomes and better patient satisfaction compared with non-PCA modalities.

METHODS: MEDLINE (PubMed), Embase, SCOPUS, ClinicalTrials.gov , and Cochrane Central Register of Controlled Trials (CENTRAL) databases were searched from inception date to December 13, 2022. Randomized controlled trials involving adults presenting to the ED with acute traumatic pain who received intravenous (IV) analgesia via PCA compared with other modalities were included. The Cochrane Risk of Bias tool and the Grading of Recommendation, Assessment, Development, and Evaluation approach were used to assess the quality of included studies.

RESULTS: A total of 1,368 publications were screened, with 3 studies involving 382 patients meeting the eligibility criteria. All three studies compared PCA IV morphine with clinician-titrated IV morphine boluses. For the primary outcome of pain relief, the pooled estimate was in favor of PCA with a standard mean difference of -0.36 (95% confidence interval, -0.87 to 0.16). There were mixed results concerning patient satisfaction. Adverse event rates were low overall. The evidence from all three studies was graded as low-quality because of a high risk of bias from lack of blinding.

CONCLUSION: This study did not demonstrate a significant improvement in pain relief or patient satisfaction using PCA for trauma in the ED. Clinicians wishing to use PCA to treat acute trauma pain in adult patients in the ED are advised to consider the available resources in their own practice settings and to implement protocols for monitoring and responding to potential adverse events. LEVEL OF EVIDENCE: Systematic Review/Meta-Analyses; Level III.

DOI: 10.1097/TA.0000000000004004

PMID: 37335181 [Indexed for MEDLINE]

41. Emerg Med J. 2023 Dec 6:emermed-2023-213483. doi: 10.1136/emermed-2023-213483.

Prevalence of invasive bacterial infection in febrile infants ≤90 days with a COVID-19 positive test: a systematic review and meta-analysis.

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BACKGROUND: Febrile infants with an infection by influenza or enterovirus are at low risk of invasive bacterial infection (IBI).

OBJECTIVE: To determine the prevalence of IBI among febrile infants ≤90 days old with a positive COVID-19 test.

METHODS: MEDLINE, Embase, Cochrane Central Register databases, Web of Science, ClinicalTrials.gov and grey literature were searched for articles published from February 2020 to May 2023.

INCLUSION CRITERIA: researches reporting on infants ≤90 days of age with fever and a positive test for SARS-CoV-2 (antigen test/PCR). Case reports with <3 patients, articles written in a language other than English, French or Spanish, editorials and other narrative studies were excluded. Preferred Reposting Items for Systematic Reviews and Meta-analysis guidelines were followed, and the National Institutes of Health Quality Assessment Tool was used to assess study quality. The main outcome was the prevalence of IBI (a pathogen bacterium identified in blood and/or cerebrospinal fluid (CSF)). Forest plots of prevalence estimates were constructed for each study. Heterogeneity was assessed and data were pooled by meta-analysis using a random effects model. A fixed continuity correction of 0.01 was added when a study had zero events.

RESULTS: From the 1023 studies and 3 databases provided by the literature search, 33 were included in the meta-analysis, reporting 3943 febrile infants with a COVID-19 positive test and blood or CSF culture obtained. The pooled prevalence of IBI was 0.14% (95% CI, 0.02% to 0.27%). By age, the prevalence of IBI was 0.56% (95% CI, 0.0% to 1.27%) in those 0-21 days old, 0.53% (95% CI, 0.0% to 1.22%) in those 22-28 days old and 0.11% (95% CI, 0.0% to 0.24%) in those 29-60 days old.

CONCLUSION: COVID-19-positive febrile infants ≤90 days old are at low risk of IBI, especially infants >28 days old, suggesting this subgroup of patients can be managed without blood tests.

PROSPERO REGISTRATION NUMBER: CRD42022356507.

DOI: 10.1136/emermed-2023-213483

PMID: 38071527

42. Eur J Oncol Nurs. 2023 Dec;67:102428. doi: 10.1016/j.ejon.2023.102428. Epub 2023 Oct 13.

An integrative review of adult cancer patients' experiences of nursing telephone and virtual triage systems for symptom management.

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PURPOSE: Telephone and virtual triage services are becoming increasingly common in ambulatory oncology settings. Few studies have evaluated their implementation from the perspective of service users. This study aims to evaluate the experiences of engaging with nurse-delivered telephone and virtual triage systems for symptom management among people undergoing cancer treatment.

METHODS: An integrative review was undertaken. MEDLINE, CINAHL, PsycInfo, Academic Search Complete and Scopus were systematically searched. Twelve publications met the inclusion criteria, and data related to cancer patients' perceptions of the triage process were extracted and analysed.

RESULTS: Telephone-based (n=7), app-based (n=5) and video-based teleconferencing (n=2) triage systems were evaluated positively overall, enhancing ease of health system navigation, avoidance of emergency department for consultation, and the information, reassurance and support provided to support self-management of symptoms. However, several factors influenced the users' engagement with triage services, including confidence to articulate symptoms, limited opening hours, waiting times for initial triage or follow-up and digital literacy. Collectively, these factors contributed to delayed reporting or under-reporting of symptoms, undermining the potential impact of services. Studies included variable reporting of intervention characteristics, including the qualification of nurses delivering and leading services.

CONCLUSIONS: Future evaluations of triage services must give greater consideration to the characterisation of interventions to ensure transferability, including nursing roles and qualifications. To ensure effective intervention and optimal supportive care for symptom management, patients must be prepared to engage triage services early. Future evaluations must ensure the impact of digital literacy on engagement with, and experience of, virtual triage is investigated.

DOI: 10.1016/j.ejon.2023.102428

PMID: 37952276 [Indexed for MEDLINE]

43. J Crit Care. 2023 Dec;78:154403. doi: 10.1016/j.jcrc.2023.154403. Epub 2023 Aug 29.

Choice of creep or maintenance fluid type and their impact on total daily ICU sodium burden in critically ill patients: A systematic review and meta-analysis.

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PURPOSE: Maintenance and hidden/creep fluids are a major source of fluid and sodium intake in intensive care unit (ICU) patients. Recent research indicates that low versus high sodium content maintenance fluids could decrease fluid and sodium burden. We conducted a systematic review (SR) with meta-analysis to summarize the impact of maintenance fluid choice on total daily sodium in ICU patients.

MATERIALS AND METHODS: Systematic literature search in Pubmed, Embase, the Cochrane Library and the. CLINICAL TRIALS REGISTRY: Only controlled clinical trials were included.

EXCLUSION CRITERIA: trials on resuscitation fluids, performed in the emergency department only and in pediatric patients. Primary objective was the reduction in mean total sodium intake with low versus high sodium content maintenance/creep fluids.

RESULTS: Five studies (1105 patients) were included. Heterogeneity was high.Risk of bias was moderate. Mean daily sodium reduction was 117 mmol (95%Confidence Interval [CI] -174; -59; $p < 0.001$) with low versus high sodium content maintenance/creep fluids. Incidence of hyperchloremia was lower (OR 0.26; 95%CI 0.1; 0.64) with low sodium. There were no differences in the incidences of hyper-/hyponatremia and fluid balances.

CONCLUSION: Using low sodium content maintenance/creep fluids substantially reduces daily sodium burden in adult ICU patients. Significant knowledge/research gaps exist regarding relevance and safety. TRIAL REGISTRATION: PROSPERO 2022 CRD42022300577 (February 2022).

DOI: 10.1016/j.jcrc.2023.154403

PMID: 37651780 [Indexed for MEDLINE]

44. Auton Neurosci. 2023 Dec 26;251:103144. doi: 10.1016/j.autneu.2023.103144.

The efficacy of non-pharmacological and non-pacing therapies in preventing vasovagal syncope: Tilt training, physical counter pressure maneuvers, and yoga - A systematic review and meta-analysis.

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BACKGROUND: Vasovagal syncope (VVS) is a prevalent condition characterized by a sudden drop in blood pressure and heart rate, leading to a brief loss of consciousness and postural control. Recurrent episodes of VVS significantly impact the quality of life and are a common

reason for emergency department visits. Non-pharmacological interventions, such as tilt training, physical counter pressure maneuvers, and yoga, have been proposed as potential treatments for VVS. However, their efficacy in preventing VVS remains uncertain.

METHODS: A systematic review and meta-analysis were conducted following PRISMA guidelines. PubMed, Web of Science, and Embase were searched up to March 2023 for randomized controlled trials comparing non-pharmacological interventions with control in preventing VVS recurrence. The primary outcome was the recurrence rate of VVS episodes.

RESULTS: A total of 1130 participants from 18 studies were included in the meta-analysis. The overall mean effect size for non-pharmacological interventions versus control was 0.245 (95 % CI: 0.128-0.471, p-value <0.001). Subgroup analysis showed that yoga had the largest effect size (odds ratio 0.068, 95 % CI: 0.018-0.250), while tilt training had the lowest effect size (odds ratio 0.402, 95 % CI: 0.171-0.946) compared to control. Physical counter pressure maneuvers demonstrated an odds ratio of 0.294 (95 % CI: 0.165-0.524) compared to control.

CONCLUSION: Non-pharmacological interventions show promise in preventing recurrent VVS episodes. Yoga, physical counter pressure maneuvers, and tilt training can be considered as viable treatment options. Further research, including randomized studies comparing pharmacological and non-pharmacological approaches, is needed to evaluate the safety and efficacy of these interventions for VVS treatment.

DOI: 10.1016/j.autneu.2023.103144

PMID: 38181551

45. Int J Cardiol Cardiovasc Risk Prev. 2023 Dec 12;20:200229. doi: 10.1016/j.ijcrp.2023.200229. eCollection 2024 Mar.

Effectiveness of cardiac rehabilitation programs on medication adherence in patients with cardiovascular disease: A systematic review and meta-analysis.

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BACKGROUND: Education to improve medication adherence is one of the core components of cardiac rehabilitation (CR) programs. However, the evidence on the effectiveness of CR programs on medication adherence is conflicting. Therefore, we aimed to summarize the effectiveness of CR programs versus standard care on medication adherence in patients with cardiovascular disease.

METHODS: A systematic review and meta-analysis was conducted. Seven databases and clinical trial registries were searched for published and unpublished articles from database inception to 09 Feb 2022. Only randomised controlled trials and quasi-experimental studies were included. Two independent reviewers conducted the screening, extraction, and

appraisal. The JBI methodology for effectiveness reviews and PRISMA 2020 guidelines were followed. A statistical meta-analysis of included studies was pooled using RevMan version 5.4.1.

RESULTS: In total 33 studies were included with 16,677 participants. CR programs increased medication adherence by 14 % (RR = 1.14; 95 % CI: 1.07 to 1.22; p = 0.0002) with low degree of evidence certainty. CR also lowered the risk of dying by 17 % (RR = 0.83; 95 % CI: 0.69 to 1.00; p = 0.05); primary care and emergency department visit by mean difference of 0.19 (SMD = -0.19; 95 % CI: -0.30 to -0.08; p = 0.0008); and improved quality of life by 0.93 (SMD = 0.93; 95 % CI: 0.38 to 1.49; p = 0.0010). But no significant difference was observed in lipid profiles, except with total cholesterol (SMD = -0.26; 95 % CI: -0.44 to -0.07; p = 0.006) and blood pressure levels.

CONCLUSIONS: CR improves medication adherence with a low degree of evidence certainty and non-significant changes in lipid and blood pressure levels. This result requires further investigation.

DOI: 10.1016/j.ijcrp.2023.200229

PMCID: PMC10770721

PMID: 38188637

46. Front Med (Lausanne). 2023 Dec 28;10:1250845. doi: 10.3389/fmed.2023.1250845. eCollection 2023.

The diagnostic accuracy of carbon monoxide pulse oximetry in adults with suspected acute carbon monoxide poisoning: a systematic review and meta-analysis.

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INTRODUCTION: Acute carbon monoxide poisoning (COP) is one of the leading causes of intoxication among patients presenting to the emergency department (ED). COP symptoms are not always specific and may vary from mild to critical. In the last few years, COHb pulse oximeters have been developed and applied to the setting of suspected COP. The aim of this systematic review is to assess the diagnostic accuracy of CO pulse oximetry (SpCO) with carboxyhemoglobin (COHb) levels measured by blood gas analysis, used as a reference standard, in patients with suspected COP.

METHODS: We developed our search strategy according to the PICOS framework, population, index/intervention, comparison, outcome, and study, considering the diagnostic accuracy of SpCO compared to COHb levels measured by blood gas analysis, used as a reference standard, in patients with suspected COP enrolled in cross-sectional studies in English. The search was performed on MEDLINE/PubMed and EMBASE in February 2022. Quality assessment was performed using the QUADAS-2 methodology. A COHb cutoff of 10% was chosen to test the

sensitivity and specificity of the index test. A bivariate model was used to perform the meta-analysis. The protocol was registered on PROSPERO (CRD42022359144).

RESULTS: A total of six studies (1734 patients) were included. The pooled sensitivity of the test was 0.65 (95% CI 0.44-0.81), and the pooled specificity was 0.93 (95% CI 0.83-0.98). The pooled LR+ was 9.4 (95% CI 4.4 to 20.1), and the pooled LR- was 0.38 (95% CI 0.24 to 0.62).

CONCLUSION: Our results show that SpCO cannot be used as a screening tool for COP in the ED due to its low sensitivity. Because of its high LR+, it would be interesting to evaluate, if SpCO could have a role in the prehospital setting as a tool to quickly identify COP patients and prioritize their transport to specialized hospitals on larger samples with a prospective design.

DOI: 10.3389/fmed.2023.1250845

PMCID: PMC10786445

PMID: 38223786