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Emergency Department Patient Flow

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Diagnosing patient flow issues in the emergency department: an Australasian hospital case study.
Boehme T. *Journal of Health Organization and Management* 2024; ahead-of-print(ahead-of-print)

What's going on with A&E waiting times?
The King's Fund; 2024.
https://www.kingsfund.org.uk/insight-and-analysis/long-reads/whats-going-on-with-ae-waiting-times

[Waiting times in accident and emergency (A&E) departments are a key measure of how the NHS is performing. Here, we look at who is using A&E services, why people have been waiting longer in A&E in recent years, and what is being done nationally to address long waiting times.]

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1. **A study of "left against medical advice" emergency department patients: an optimized explainable artificial intelligence framework**

Authors: Ahmed, Abdulaziz;Aram, Khalid Y.;Tutun, Salih and Delen, Dursun

Publication Date: 2024

Journal: Health Care Management Science

Abstract: The issue of left against medical advice (LAMA) patients is common in today's emergency departments (EDs). This issue represents a medico-legal risk and may result in potential readmission, mortality, or revenue loss. Thus, understanding the factors that cause patients to "leave against medical advice" is vital to mitigate and potentially eliminate these adverse outcomes. This paper proposes a framework for studying the factors that affect LAMA in EDs. The framework integrates machine learning, metaheuristic optimization, and model interpretation techniques. Metaheuristic optimization is used for hyperparameter optimization-one of the main challenges of machine learning model development. Adaptive tabu simulated annealing (ATSA) metaheuristic algorithm is utilized for optimizing the parameters of extreme gradient boosting (XGB). The optimized XGB models are used to predict the LAMA outcomes for patients under treatment in ED. The designed algorithms are trained and tested using four data groups which are created using feature selection. The model with the best predictive performance is then interpreted using the SHaply Additive exPlanations (SHAP) method. The results show that best model has an area under the curve (AUC) and sensitivity of 76% and 82%, respectively. The best model was explained using SHAP method. (© 2024. This is a U.S. Government work and not under copyright protection in the US; foreign copyright protection may apply.)

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2. **Effect of access block on emergency department crowding calculated by NEDOCS score**

Authors: Altun, Mustafa;Kudu, Emre;Demir, Oguzhan;Karacabey, Sinan;Sanri, Erkman;Onur, Ozge Ecmel;Denizbasi, Arzu and Akoglu, Haldun

Publication Date: 2024

Journal: The American Journal of Emergency Medicine 82, pp. 136–141

Abstract: Objective: Emergency department (ED) crowding poses a significant challenge in healthcare systems globally, leading to delays in patient care and threatening public health and staff well-being. Access block, characterized by delays in admitting patients awaiting hospitalization, is a primary contributor to ED overcrowding. To address this issue, the National Emergency Department Overcrowding Study (NEDOCS) score provides an objective framework for assessing ED crowding severity. This study aims to evaluate the impact of access block on ED crowding using the NEDOCS score and to explore strategies for mitigating overcrowding through scenarios over a 39-day period.; Methods: A single-center, prospective, observational study was conducted in an urban tertiary care

referral center. The NEDOCS score was collected six times daily, including variables like total ED patients, ventilated patients, boarding patients, the longest waiting times, and durations of boarding patients. NEDOCS scores were recorded, and calculations were performed to assess the potential impact of eliminating access block in scenarios.; Results: NEDOCS scores ranged from 62.4 to 315, with a mean of 146, indicating consistent overcrowding. Analysis categorized ED conditions into different levels, revealing that over 81.2% of the time, the ED was at least overcrowded. The longest boarding patient's waiting duration was identified as the primary contributor to NEDOCS (48.8%). Scenarios demonstrated a significant decrease in NEDOCS when access block was eliminated through timely admissions. Shorter boarding times during non-working hours suggest the potential mitigating effect of external factors on the access barrier. Additionally, daytime measurements were associated with lower patient admissions and shorter wait times for initial assessment.; Conclusion: Although ED crowding is a multifactorial problem, our study has shown that access block contribute significantly to this problem. The study emphasizes that eliminating access block through timely admissions could substantially alleviate crowding, highlighting the importance of addressing this issue to enhance ED efficiency and overall healthcare delivery.; Competing Interests: Declaration of competing interest None.

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3. **Effectiveness of art therapy interventions for treating pain and anxiety in adolescents in the emergency department**

Authors: Bifano, Susanne M. and Tsze, Daniel S.

Publication Date: 2024

Journal: Cjem

Abstract: Objective: To evaluate the effectiveness of art therapy in reducing pain and anxiety in adolescents with painful conditions treated in the ED.; Methods: We conducted a prospective pilot study of patients 12-18 years old presenting with a painful condition to a tertiary-care children's hospital ED. Primary outcome was pain intensity measured using the Verbal Numerical Rating Scale (scored 0-10); a decrease of ≥ 20% was clinically significant. Anxiety was measured using the short-form six-item State-Trait Anxiety Inventory (scored 20-80: 20-40 = zero-low anxiety; 41-60 = moderate anxiety; 61-80 = high anxiety); a change from higher to lower category was clinically significant. Outcomes were measured at baseline, immediately after, and 1 h after art therapy completion. A standardized interview was conducted immediately after art therapy completion.; Results: We enrolled a convenience sample of 50 patients. Mean duration of art therapy was 34.7 min. Mean baseline pain was 6.2 and decreased by 23.2% (95% CI 14.9-31.5) and 28.6% (95% CI 9.2-48), immediately after and 1 h after art therapy completion, respectively. Mean baseline anxiety was 48 (moderate) and decreased to 38 (low) and 43 (moderate) at the same time points, respectively. Forty-eight patients (96%) reported feelings of relaxation, decreased pain intensity, and/or empowerment (e.g., "Very relaxing"; "I didn't feel as much pain"; "Really showed my emotions"; "A way to explain to doctors what I'm feeling and what parts hurt").; Conclusion: Art therapy may be associated with clinically significant decreases and qualitative improvements in pain and anxiety in adolescents with painful conditions being treated in the ED. This novel treatment may improve the holistic care of adolescents with painful conditions in the ED. (© 2024. The Author(s), under exclusive licence to the Canadian Association of Emergency Physicians (CAEP)/ Association Canadienne de Médecine d'Urgence (ACMU).)

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4. **Patients presenting with musculoskeletal disorders in the emergency department: A qualitative study of their experiences when cared by advanced practice physiotherapists in the province of Québec**

Authors: Blondin, Juliette;Desmeules, François;Matifat, Eveline and Kechichian, Amélie

Publication Date: 2024

Journal: Musculoskeletal Care 22(3), pp. e1914

Abstract: Background: Advanced practice physiotherapy (APP) models of care are promising to alleviate pressure in emergency departments (EDs) where physiotherapists' new roles include being a first-contact practitioner and leading the overall care and management of patients with minor musculoskeletal disorders (MSKDs) to alleviate ED physicians' caseload.; Purpose: To explore patients' acceptability, experience, satisfaction, and perception of a new APP-led model of care in the ED.; Methods: Patients presenting to the ED with a minor MSKD and who agreed to participate in a multicenter, pan-Canadian randomized controlled trial assessing the efficacy and costs of an APP model of care were invited to participate in this qualitative study. Semi-structured interviews were performed to identify themes related to their experiences with this model. Verbatim transcripts were coded and analysed using an inductive thematic analysis.; Results: 11 patients participated and three themes were identified: 1- They were satisfied with the care received within the model; 2- They found APPs to have the appropriate skill set to manage MSKDs and to assume medical-delegated tasks; 3- Timely access to care was a key factor in the acceptability of this model and participants believed physiotherapists were appropriate first-contact practitioners. One participant proposed that the APP model of care should also offer follow-up care.; Conclusion: Participants had a positive experience of care in this new model. These results support the implementation of APP models of care in EDs as the participants appear receptive to new roles for APPs. (© 2024 The Author(s). Musculoskeletal Care published by John Wiley & Sons Ltd.)

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5. **Machine learning in diagnostic support in medical emergency departments**

Authors: Brasen, Claus Lohman;Andersen, Eline Sandvig;Madsen, Jeppe Buur;Hastrup, Jens;Christensen, Henry;Andersen, Dorte Patuel;Lind, Pia Margrethe;Mogensen, Nina;Madsen, Poul Henning;Christensen, Anne Friesgaard;Madsen, Jonna Skov;Ejlersen, Ejler and Brandslund, Ivan

Publication Date: 2024

Journal: Scientific Reports 14(1), pp. 17889

Abstract: Diagnosing patients in the medical emergency department is complex and this is expected to increase in many countries due to an ageing population. In this study we investigate the feasibility of training machine learning algorithms to assist physicians handling the complex situation in the medical emergency departments. This is expected to reduce diagnostic errors and improve patient logistics and outcome. We included a total of 9,190 consecutive patient admissions diagnosed and treated in two hospitals in this cohort study. Patients had a biochemical workup including blood and urine analyses on clinical decision totaling 260 analyses. After adding nurse-registered data we trained 19 machine learning algorithms on a random 80% sample of the patients and validated the results on the remaining 20%. We trained algorithms for 19 different patient outcomes including the main outcomes death in 7 (Area under the Curve (AUC) 91.4%) and 30 days (AUC 91.3%) and safe-discharge(AUC 87.3%). The various algorithms obtained areas under the Receiver Operating Characteristics -curves in the range of 71.8-96.3% in the holdout cohort (68.3-98.2% in the training cohort). Performing this list of biochemical analyses at admission also reduced the number of subsequent venipunctures within 24 h from patient admittance by 22%. We have shown that it is possible to develop a list of machine-learning algorithms with high AUC for use in medical emergency departments. Moreover, the study showed that it is possible to reduce the number of venipunctures in this cohort. (© 2024. The Author(s).)

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6. **Providing end of life care in the emergency department: A hermeneutic phenomenological study**

Authors: Burnitt, Ellie;Grealish, Laurie A.;Crilly, Julia;May, Katya and Ranse, Jamie

Publication Date: 2024

Journal: Australasian Emergency Care 27(3), pp. 161–166

Abstract: Background: Registered nurses report the experience of delivering end of life care in emergency departments as challenging. The study aim was to understand what it is like to be a registered nurse providing end of life care to an older person in the emergency department.; Methods: A hermeneutic phenomenological study was conducted in 2021, using semi-structured interviews with seven registered nurses across two hospital emergency departments in Queensland, Australia. Thematic analysis of participants' narratives was undertaken.; Findings: Seven registered nurses were interviewed; six of whom were women. Participant's experience working in the emergency department setting ranged from 2.5-20 years. Two themes were developed through analysis: (i) Presenting the patient as a dying person; and (ii) Mentalising death in the context of the emergency department.; Conclusions: Nurses providing end of life care in the emergency department draw upon their personal and aesthetic knowing to present the dying patient as a person. The way death is mentalised suggests the need to develop empirical knowing about ageing and supportive medical care and ethical knowing to assist with the transition from resuscitation to end of life care. Shared clinical reflection on death in the emergency department, facilitated by experts in ageing and end of life care is recommended.; Competing Interests: Declaration of Competing Interest Prof Julia Crilly is a reviewer for AUEC.

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7. **Advancing Emergency Department Triage Prediction With Machine Learning to Optimize Triage for Abdominal Pain Surgery Patients**

Authors: Chai, Chen;Peng, Shu-Zhen;Zhang, Rui;Li, Cheng-Wei and Zhao, Yan

Publication Date: 2024

Journal: Surgical Innovation , pp. 15533506241273449

Abstract: Background: The development of emergency department (ED) triage systems remains challenging in accurately differentiating patients with acute abdominal pain (AAP) who are critical and urgent for surgery due to subjectivity and limitations. We use machine learning models to predict emergency surgical abdominal pain patients in triage, and then compare their performance with conventional Logistic regression models.; Methods: Using 38 214 patients presenting with acute abdominal pain at Zhongnan Hospital of Wuhan University between March 1, 2014, and March 1, 2022, we identified all adult patients (aged ≥18 years). We utilized routinely available triage data in electronic medical records as predictors, including structured data (eg, triage vital signs, gender, and age) and unstructured data (chief complaints and physical examinations in free-text format). The primary outcome measure was whether emergency surgery was performed. The dataset was randomly sampled, with 80% assigned to the training set and 20% to the test set. We developed 5 machine learning models: Light Gradient Boosting Machine (Light GBM), eXtreme Gradient Boosting (XGBoost), Deep Neural Network (DNN), and Random Forest (RF). Logistic regression (LR) served as the reference model. Model performance was calculated for each model, including the area under the receiver-work characteristic curve (AUC) and net benefit (decision curve), as well as the confusion matrix.; Results: Of all the 38 214 acute abdominal pain patients, 4208 underwent emergency abdominal surgery while 34 006 received non-surgical treatment. In the surgery outcome prediction, all 4 machine learning models outperformed the reference model (eg, AUC, 0.899 95%CI 0.891-0.903] in the Light GBM vs. 0.885 95%CI 0.876-0.891] in the reference model), Similarly, most machine learning models exhibited significant improvements in net reclassification compared to the reference model (eg, NRIs of 0.081295%CI, 0.055-0.1105] in the XGBoost), with the exception of the RF model. Decision curve analysis shows that across the entire range of thresholds, the net benefits of the XGBoost and the Light GBM models were higher than the reference model. In particular, the Light GBM model performed well in predicting the need for emergency abdominal surgery with higher sensitivity, specificity, and accuracy.; Conclusions: Machine learning models have demonstrated superior performance in predicting emergency abdominal pain surgery compared to traditional models. Modern machine learning improves clinical triage decisions and ensures that critically needy patients receive

priority for emergency resources and timely, effective treatment.; Competing Interests: Declaration of Conflicting InterestsThe author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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8. **Implementation considerations for the adoption of artificial intelligence in the emergency department**

Authors: Cheng, R.;Aggarwal, A.;Chakraborty, A.;Harish, V.;McGowan, M.;Roy, A.;Szulewski, A. and Nolan, B.

Publication Date: 2024

Journal: The American Journal of Emergency Medicine 82, pp. 75–81

Abstract: Objective: Artificial intelligence (AI) has emerged as a potentially transformative force, particularly in the realm of emergency medicine (EM). The implementation of AI in emergency departments (ED) has the potential to improve patient care through various modalities. However, the implementation of AI in the ED presents unique challenges that influence its clinical adoption. This scoping review summarizes the current literature exploring the barriers and facilitators of the clinical implementation of AI in the ED.; Methods: We systematically searched Embase (Ovid), MEDLINE (Ovid), Web of Science, and Engineering Village. All articles were published in English through November 20th, 2023. Two reviewers screened the search results, with disagreements resolved through third-party adjudication.; Results: A total of 8172 studies were included in the preliminary search, with 22 selected for the final data extraction. 10 studies were reviews and the remaining 12 were primary quantitative, qualitative, and mixed-methods studies. Out of the 22, 13 studies investigated a specific AI tool or application. Common barriers to implementation included a lack of model interpretability and explainability, encroachment on physician autonomy, and medicolegal considerations. Common facilitators to implementation included educating staff on the model, efficient integration into existing workflows, and sound external validation.; Conclusion: There is increasing literature on AI implementation in the ED. Our research suggests that the most common barrier facing AI implementation in the ED is model interpretability and explainability. More primary research investigating the implementation of specific AI tools should be undertaken to help facilitate their successful clinical adoption in the ED.; Competing Interests: Declaration of competing interest All authors declare no conflicts of interest. No funding was provided for this paper.

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9. **Vital signs monitoring in Australasian emergency departments: Development of a consensus statement from ACEM and CENA**

Authors: Connell, Clifford J.;Craig, Simon;Crock, Carmel;Kuhn, Lisa;Morphet, Julia and Unwin, Maria

Publication Date: 2024

Journal: Australasian Emergency Care 27(3), pp. 207–217

Abstract: Background: Emergency Department (ED) care is provided for a diverse range of patients, clinical acuity and conditions. This diversity often calls for different vital signs monitoring requirements. Requirements often change depending on the circumstances that patients experience during episodes of ED care.; Aim: To describe expert consensus on vital signs monitoring during ED care in the Australasian setting to inform the content of a joint Australasian College for Emergency Medicine (ACEM) and College of Emergency Nursing Australasia (CENA) position statement on vital signs monitoring in the ED.; Method: A 4-hour online nominal group technique workshop with follow up surveys.; Results: Twelve expert ED nurses and doctors from adult, paediatric and mixed metropolitan and regional ED and research facilities spanning four Australian states participated in the workshop

and follow up surveys. Consensus building generated 14 statements about vital signs monitoring in ED. Good consensus was reached on whether vital signs should be assessed for 15 of 19 circumstances that patients may experience.; Conclusion: This study informed the creation of a joint position statement on vital signs monitoring in the Australasian ED setting, endorsed by CENA and ACEM. Empirical evidence is needed for optimal, safe and achievable policy on this fundamental practice.; Competing Interests: Declaration of Competing Interest All authors are Fellows of CENA or ACEM.

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10. **Impact of emergency department boarding on patients outcomes in hip fractures**

Authors: Crawford, Adam;Samanta, Damayanti;Smith, Collin;Area, Scott and Duvall, Nancy M.

Publication Date: 2024

Journal: The American Journal of Emergency Medicine 83, pp. 16–19

Abstract: Background: Boarding time in the Emergency Department (ED) is an area of concern for all patients and potentially more problematic for the hip fracture population. Identifying patient outcomes impacted by ED boarding and improving emergent care to reduce surgical delay for this patient population is a recognized opportunity. The objective of this study is to examine the impact of ED boarding in relation to patient outcomes in the surgical hip fracture population.; Methods: This is a retrospective study of hip fracture patients who presented at the ED of a Level 1 trauma center between January 2020 and December 2021. Patients were categorized into four quartiles based on boarding time. Study outcomes-hospital length of stay, time to surgery, visit to ICU post-operative, total blood products, in-hospital complications, discharge disposition, in-hospital mortality, and 30-day readmission-were compared among these four quartiles.; Results: The outcome endpoints were comparable among the four quartiles except for time to surgery. Time to surgery significantly differed among the quartiles, increasing from 20.39 to 29.03 h ($p < 0.001$) from the first to fourth quartile.; Conclusion: In contrast to the existing literature, ED boarding in our study was not associated with adverse outcomes except for time to surgery. By expediting the time to surgery in accordance with established guidelines, adverse outcomes were mitigated even when our patients boarded for a longer duration. System processes including a 24/7 trauma nurse practitioner model, availability of in-house orthopedic surgeons, and timely cardiac evaluation need to be considered in relation to time to surgery, in turn impacting ED boarding and patient outcomes.; Competing Interests: Declaration of competing interest None of the authors have any potential conflicts of interest. The authors have no financial disclosures. Study findings have not been presented.

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11. **What can be done about workplace wellbeing in emergency departments? 'There's no petrol for this Ferrari'**

Authors: Davids, Jennifer;Bohlken, Nicole;Brown, Martin and Murphy, Margaret

Publication Date: 2024

Journal: International Emergency Nursing 75, pp. 101487

Abstract: Workplace wellbeing encompasses all aspects of working life. Peak health organisations recognise that poor workplace wellbeing is costly, both to individuals and to the organisation, and the value in promoting healthy workplaces. Workplace wellbeing improves when its barriers are acknowledged and addressed, and protective factors are promoted. The Emergency Department (ED) is a place of intense and challenging activity, exacerbated by high workloads and overcrowding. This impacts negatively on patient care, staff safety and wellbeing. We held focus groups across four EDs to discuss barriers and enablers to wellbeing and found four core themes: Workplace Satisfaction; Barriers to Wellbeing; Organisational Culture that Prioritises Staff Wellbeing; Self-care and Self

Compassion. From this, and existing literature, we collaboratively developed a contextualised staff wellbeing framework titled: 'Staff Wellbeing Good Practice Framework: From Surviving to Thriving, How to Protect your Wellbeing in the Emergency Department' that emphasises their values of Competence, Connection and Control.; Competing Interests: Declaration of competing interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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12. **Prognostic value of cognitive impairment, assessed by the Clock Drawing Test, in emergency department patients presenting with non-specific complaints**

Authors: Espejo, Tanguy;Wagner, Nadja;Riedel, Henk B.;Karakoumis, Julia;Geigy, Nicolas;Nickel, Christian H. and Bingisser, Roland

Publication Date: 2024

Journal: European Journal of Internal Medicine 126, pp. 56–62

Abstract: Background: Cognitive impairment (CI) is common among older patients presenting to the emergency department (ED). The failure to recognize CI at ED presentation constitutes a high risk of additional morbidity, mortality, and functional decline. The Clock Drawing Test (CDT) is a well-established cognitive screening test.; Aim: In patients presenting to the ED with non-specific complaints (NSCs), we aimed to investigate the usability of the CDT and its prognostic value regarding length of hospital stay (LOS) and mortality.; Method: Secondary analysis of the Basel Non-specific Complaints (BANC) trial, a prospective delayed type cross-sectional study with a 30-day follow-up. In three EDs, patients presenting with NSCs were enrolled. The CDT was administered at enrollment.; Results: In the 1,278 patients enrolled, median age was 81 74, 87] years and 782 were female (61.19%). A valid CDT was obtained in 737 (57.7%) patients. In patients without a valid CDT median LOS was higher (29 9, 49] days vs. 22 9, 45] days), and 30-day mortality was significantly higher than in patients with a valid CDT (n = 45 (8.32%) vs. n = 39 (5.29%)). Of all valid CDTs, 154 clocks (20.9%) were classified as normal, 55 (7.5%) as mildly deficient, 297 (40.3%) as moderately deficient, and 231 (31.3%) as severely deficient. Mortality and LOS increased along with the CDT deficits ($p = 0.012$ for 30-day mortality; $p < 0.001$ for LOS).; Conclusion: The early identification of patients with CI may lead to improved patient management and resource allocation. The CDT could be used as a risk stratification tool for older ED patients presenting with NSCs, as it is a predictor for 30-day mortality and LOS.; Competing Interests: Declaration of competing interest None (Copyright © 2024 The Authors. Published by Elsevier B.V. All rights reserved.)

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13. **Impact of point-of-care gonorrhea and chlamydia testing in the emergency department on reducing overtreatment rates**

Authors: Feltes, Alaina;Combs, Julie;Reynolds, Maegan;Conroy, Mark;Lindsey, Sommer;Dick, Michael;Li, Junan and Reichert, Erin

Publication Date: 2024

Journal: The American Journal of Emergency Medicine 83, pp. 64–68

Abstract: Background: Chlamydia trachomatis (CT) and Neisseria gonorrhoeae (NG) infections continue to increase in the United States. Advancement in technology with point-of-care (POC) testing can improve the overall treatment of sexually transmitted infections (STI) in the emergency department (ED) by shortening the time to test result and administration of accurate treatment. The purpose of this study was to assess if the POC test reduced the rate of overtreatment for CT and/or NG compared to the standard-of-care (SOC) test.; Methods: This retrospective cohort study included adult patients

tested for CT and NG at two urban EDs between August 2020 and October 2022. This cohort excluded hospital admissions, elopement, pregnancy, rectal and oral samples, victims of sexual assault, and diagnoses for which antimicrobial treatment overlapped that of CT/NG. The primary outcome assessed overtreatment, defined as receiving treatment in the ED or a prescription prior to discharge for patients who tested negative for CT and/or NG. Secondary outcomes included undertreatment rates, overtreatment rates in select populations, test turnaround time, and ED length of stay (LOS).; Results: Of 327 patients screened, 97 patients were included in the SOC group and 100 in POC. Overtreatment for CT was provided in zero POC patients and 29 (29.9%) SOC patients ($p < 0.001$). NG was overtreated in 1 (1%) POC and 23 (23.7%) SOC ($p < 0.001$). POC was associated with undertreatment of CT and/or NG in two patients, compared to four patients tested with SOC. Overall, treatment was deemed inappropriate for 5 (5%) of those tested with POC, compared to 35 (36%) tested with SOC ($p < 0.001$). There was no difference in ED LOS (2.7 vs 3.01 h, $p = 0.41$).; Conclusions: POC testing facilitated the return of results prior to patients being discharged from the ED. Compared to standard testing, POC improved appropriateness of CT and NG treatment by reducing the rates of overtreatment.; Competing Interests: Declaration of competing interest None of the authors included on this manuscript have any significant or potential conflicts of interest. (Published by Elsevier Inc.)

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14. **Emergency department observation units: A scoping review**

Authors: Goodwin, Rebecca;Cyrus, John;Lilova, Radina L.;Kandlakunta, Sreedhatri and Aurora, Taruna

Publication Date: 2024

Journal: Journal of the American College of Emergency Physicians Open 5(4), pp. e13254

Abstract: Objective: This scoping review assesses existing research on observation units, examining diagnoses, clinical outcomes, finances, and health system comparisons to identify knowledge gaps related to patients in dedicated emergency observation units.; Methods: The scoping review follows the Joanna Briggs Institute (JBI) methodology and was published prior to the review on Open Science Framework. Databases searched included MEDLINE/PubMed, Embase (Ovid), and CINAHL (Ebsco), with unpublished studies and gray literature identified via Web of Science. Articles were screened and extracted by two reviewers in Covidence. Any data or inclusion criteria inconsistencies were resolved through arbitration by a third researcher or by team consensus. Data were transferred to Excel for analysis.; Results: A total of 1061 studies were assessed for eligibility: 461 articles met study inclusion criteria and 433 were excluded for being abstracts only. Of these 461 articles, the majority focused on cardiac diagnoses (111/461, 24%) and adult populations (321/461, 70%) and are retrospective or cohort studies (241/461, 52%). Fifty-four articles (12%) belonged to expert opinion category. Length of stay (191/461, 41%) is the most common outcome measure followed by morbidity/mortality (189/461, 41%), admission/failure rate (169/461, 37%), and protocol assessments (120/461, 26%). Few articles focused on staff models and structure but 121 of 461 (26%) mentioned it. Note that 162 (35%) measured hospital finances, and 120 (26%) articles performed some direct comparison to other forms of observation.; Conclusion: While reimbursement and cardiac conditions are frequently assessed in emergency department observation unit literature, there is paucity of discussion on staffing models and other diagnoses remain less frequently explored. This review aims to spotlight future research areas in observation medicine. (© 2024 The Author(s). Journal of the American College of Emergency Physicians Open published by Wiley Periodicals LLC on behalf of American College of Emergency Physicians.)

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15. **Emergency department visits as a potential opportunity to promote primary care attachment and modify utilization patterns - results of a pilot study in Berlin, Germany**

Authors: Holzinger, Felix;Kümpel, Lisa;Resendiz Cantu, Rebecca;Alberter, Anja;Möckel, Martin and

Heintze, Christoph

Publication Date: 2024

Journal: BMC Emergency Medicine 24(1), pp. 142

Abstract: Background: Utilization by low acuity patients contributes to emergency department (ED) crowding. Both knowledge deficits about adequate care levels and access barriers in primary care are important promoters of such presentations. Concurrently, not having a general practitioner (GP) increases the likelihood of low-acuity ED utilization. This pilot study thus investigated feasibility, acceptance, and potential effects of an ED-delivered intervention for low-acuity patients with no regular primary care provider, consisting of an educational leaflet on acute care options and an optional GP appointment scheduling service.; Methods: Low-acuity ED consulters not attached to a GP were given an information leaflet about alternative care offers for acute health problems and offered optional personal appointment scheduling at a local GP practice. Patients were surveyed on demographics, medical characteristics, health care utilization, valuation of the intervention, and reasons for not being attached to a GP and visiting the ED. A follow-up survey was conducted after twelve months. Trends in health and health care utilization were evaluated.; Results: Between December 2020 and April 2022, n = 160 patients were enrolled, n = 114 were followed up. The study population was characterized by young age (mean 30.6 years) and predominantly good general health. Besides good health, personal mobility was a central reason for not being attached to a GP, but general preference for specialists and bad experiences with primary care were also mentioned. Most frequently stated motives for the ED consultation were subjective distress and anxiety, a belief in the superiority of the hospital, and access problems in primary care. The interventional offers were favorably valued, 52.5% (n = 84) accepted the GP appointment scheduling service offer. At follow-up, GP utilization had significantly increased, while there were no significant changes regarding utilization of other providers, including ED. An additional practice survey showed a 63.0% take-up rate for the appointment service.; Conclusions: With this pilot study, we were able to show that a personalized appointment scheduling service seems to be a promising approach to promote GP attachment and increase primary care utilization in patients without a regular GP in a highly urbanized setting. Further larger-scale studies are needed to investigate potential quantitative effects on ED visits.; Trial Registration: German Clinical Trials Register (DRKS00023480); date 2020/11/27. (© 2024. The Author(s).)

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16. **The financial and environmental impact of unopened medical supplies discarded in the emergency department**

Authors: Hu, Daniel;Hahn, Marina;Dorfman, David;Martin, Kyle Denison and Moretti, Katelyn

Publication Date: 2024

Journal: The American Journal of Emergency Medicine 83, pp. 109–113

Abstract: Background: Inefficient supply chain management within the US healthcare industry results in significant financial and environmental impact. Unopened medical supplies may routinely be discarded in the Emergency Department (ED), contributing as a source of unnecessary medical waste.; Objectives: Quantify the financial and environmental impact of unopened medical supplies that are routinely discarded in two EDs.; Methods: The study utilized a waste audit of collection bins targeting unopened medical supplies that would have otherwise been discarded. Associated financial cost was calculated using data from the purchasing department and from an online search. End-of-life (EOL) environmental impact was calculated using the M+ Wastecare calculator. A lifecycle analysis was performed on a supplier-packaged intubation kit, which the study identified as a significant source of waste.; Results: High volumes of unused, unopened supplies (143.48 kg) were collected during the study period with a yearly extrapolated value of 1337 kg. Purchasing costs over 44 days at Hospital A and 37 days at Hospital B for these items amounted to $16,159.71 across both sites with a yearly extrapolated value of $150,631.73. Yearly extrapolated EOL impact yielded 5.79 tons per year of

CO2eq. Components from supplier-packaged intubation kits were found to contribute to 45.2% of collected items at one site which purchased them. Lifecycle analysis of an intubation kit yields 23.6 kg of CO2eq.; Conclusion: This study demonstrates that the disposal of unopened medical supplies contributes a significant source of financial and environmental waste in the ED setting. The results continue to support the trend of procedure kits generating significant environmental and financial waste.; Competing Interests: Declaration of competing interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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17. **Peer support for patients with opioid use disorder in the emergency department: A narrative review**

Authors: Jack, Helen E.;Arif, Shaheer A.;Moore, Michael A.;Bhatraju, Elenore P.;Thompson, Jennifer L.;Stewart, Maureen T.;Hawk, Kathryn F. and Bartlett, Emily

Publication Date: 2024

Journal: Journal of the American College of Emergency Physicians Open 5(4), pp. e13253

Abstract: Faced with a growing opioid overdose crisis, emergency departments (EDs) are increasingly hiring peers-people with lived experiences of addiction and recovery-to work with patients in the ED who have opioid use disorders (OUDs) or who have experienced an opioid overdose. Despite a clear need for more support for patients with OUD and rapid expansion in grant funding for peer programs, there are limited data on how these programs affect clinical outcomes and how they are best implemented within the ED. In this narrative review, we synthesize the existing evidence on how to develop and implement peer programs for OUD in the ED setting. We describe the key activities peers can undertake in the ED, outline requirements of the peer role and best practices for peer supervision and hiring, detail how ED administrators have built financial and political support for peer programs, and summarize the limited evidence on clinical and care linkage outcomes of peer programs. We highlight key resources that ED clinicians and administrators can use to develop peer programs and key areas where additional research is needed.; Competing Interests: The authors declare they have no conflicts of interest.

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18. **Characteristics of undertriaged older patients in the emergency department: Retrospective study**

Authors: Jang, Kyeongmin and Seo, Yon Hee

Publication Date: 2024

Journal: International Emergency Nursing 75, pp. 101477

Abstract: Background: Older patients are more likely to be undertriaged as they often suffer from multiple diseases and complain of non-specific symptoms. Therefore, it is necessary to identify the characteristics of undertriaged older patients in emergency departments.; Methods: This descriptive study retrospectively reviewed and analyzed the electronic medical records of older patients who visited the emergency department of a general hospital in Seoul between January and December 2019.; Results: Approximately 29 % (n = 4,823) of older patients who visited the emergency department during the study period were classified as Korean Triage and Acuity Scale (KTAS) level 4 or 5, and approximately 8 % (n = 397) were undertriaged. Approximately 73 % (n = 288) of patients were hospitalized after visiting the emergency department. The undertriaged older patients exhibited nervous system symptoms such as dizziness and headache (28.8 %), cardiopulmonary symptoms

such as chest discomfort, palpitations, and abdominal pain (28.4 %), head trauma (12.8 %), and respiratory symptoms such as cough and dyspnea (12.5 %).; Conclusion: Triage nurses in emergency departments should carefully triage older patients as their chief complaints can be non-specific. In particular, when older patients visit the emergency department and exhibit symptoms such as dizziness, abnormal pain, chest discomfort, palpitations, and head trauma, they are more likely to be admitted to the intensive care unit. Therefore, meticulous care for older patients showing these symptoms is essential.; Competing Interests: Declaration of competing interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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19. **AEGIS-AcutE Geriatric Intervention Study: pilot study of frontline acute geriatric assessment to improve quality of care in emergency department**

Authors: Karjalainen, Kaisa J.;Tuori, Hannele;Salminen, Marika;Peltonen, Juha;Rantanen, Sirpa;Viikari, Paula;Viitanen, Matti;Nuotio, Maria S. and Viikari, Laura

Publication Date: 2024

Journal: Age and Ageing 53(8)

Abstract: Introduction: Due to the increasing number of older patients in emergency departments (EDs) with frailty, cognitive impairment and multimorbidity, there is a need for geriatric expertise in EDs.; Methods: This retrospective study is of older patients visiting Turku University Hospital ED between 2 January and 31 December 2022. Patients aged 75 years of older were screened for frailty using Triage Risk Screening Tool (TRST) and Clinical Frailty Scale (CFS). Nonacute, frail patients (CFS ≥4) suitable for Targeted Geriatric Assessment (TGA) (n = 1096) were scanned for the risk of delirium, cognitive impairment, change in functional status, falls, malnutrition and depression. A comprehensive patient record was made with recommendations for future care.; Results: TRST was completed in 70% of the ED visits, and two-thirds of those were considered high-risk. Among the patients assessed by the geriatric team (TGA), nonspecific complaint (38%) and falls (35%) were the main reasons for ED admission. Cognitive impairment was present in over 60% and orthostatic hypotension in 40% of the patients. The 72-hour revisit rate for TGA-patients was 2.3%. For the real-life control group, the 72-hour revisit rate was 4.6% (P = .001). Thirty-day revisit rates were 10% and 16%, respectively (P < .001). The need for rehabilitation, cognitive evaluation and intensifying home care were the main recommendations for future care.; Conclusions: TGA approach provides structured and accurate information on older patients' background. This may lead to more precise diagnostics, a thorough consideration of hospital intake and a secure discharge from the ED. Ensuring continuity of care may help to reduce readmissions to EDs.

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20. **Improving Time to Antibiotics in Patients with Long Bone Open Fractures Presenting to the Pediatric Emergency Department**

Authors: Keenan, Kaitlin;Patel, Deepa;Patel, Ronak;Gorgens, Sophia;James, Douglas;Zapke, Jennifer;Hardardt, Ryan;LaMaina, Laura;Sommer, Patricia;Dimauro, Kevin;Cerise, Jane and Bullaro, Francesca

Publication Date: 2024

Journal: Journal of Orthopaedic Trauma

Abstract: Objectives: To evaluate a new triage workflow aimed at improving time to intravenous antibiotics in open fractures to under 60 minutes of arrival to the Pediatric Emergency Department.;

Methods: Design: A prospective, multi-disciplinary, quality improvement project.; Setting: A tertiary care, Level 1 Pediatric Trauma hospital in New York.; Patient Selection Criteria: Patients aged 17 and under with long bone open fractures between June 1, 2020 and May 31, 2021, excluding those transferred from an outside hospital, with non-long bone fractures and non-fractured, injured extremities.Outcome Measures and Comparisons: The new workflow involved splint removal and skin assessment during triage to identify open fractures. Serial Plan-Do-Study-Act (PDSA) cycles aimed to refine this workflow and reduce antibiotic administration time. Primary outcome: Percentage of open fracture patients receiving intravenous (IV) antibiotics within 60 minutes. Secondary outcome: Assessment of triage documentation regarding splint presence and removal. An exact Wilcoxon two-sample test compared time from patient arrival (quick-registration) to antibiotic administration before, during and after workflow implementation on 6/1/2020.; Results: A total of 51 patients (33 male) aged 17 and under, with open fractures were reviewed: 25 during the pre-intervention phase 1/1/18-5/31/20, 14 during the intervention phase 6/1/20-5/31/21, and 12 during the post-intervention phase 6/1/21-11/30/21. Continuous improvement efforts via PDSA cycles focusing on education, reinforcement, recognition, and barrier identification increased the percentage of patients receiving antibiotics within 60 minutes from 36% to 87.5%. Median time and Interquartile range (IQR: 25th percentile-75th percentile) from quick-registration to administration was 86 minutes (IQR: 51-147) before 6/1/2020, and 34 minutes (IQR: 16- 42) thereafter.; Conclusion: The implemented triage workflow led to improved time to antibiotics to within 60 minutes for patients with long bone open fractures in the Pediatric Emergency Department.; Level of Evidence: Level III. See Instructions for Authors for a complete description of levels of evidence.; Competing Interests: The authors report no conflicts of interest related to this work.

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21. **Distances to emergency departments and non-urgent utilization of medical services: a systematic review**

Authors: Kelekar, Uma;Das Gupta, Debasree;Theis-Mahon, Nicole;Fashingbauer, Emily and Huang, Boyen

Publication Date: 2024

Journal: Global Health Action 17(1), pp. 2353994

Abstract: Background: The use of Emergency Departments (EDs) for non-urgent medical conditions is a global public health concern.; Objectives: A systematic review, guided by a registered protocol (PROSPERO: CRD42023398674), was conducted to interpret the association between distance as a measure of healthcare access and the utilization of EDs for non-urgent care in high- and middle-income countries.; Methods: The search was conducted on 22 August 2023 across five databases using controlled vocabulary and natural language keywords. Eligibility criteria included studies that examined non-urgent care, and featured concepts of emergency departments, non-urgent health services and distance, reported in English. Articles and abstracts where patients were transported by ambulance/paramedic services, referred/transferred from another hospital to an ED, or those that measured distance to an ED from another health facility were excluded. The Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) framework informed the quality of evidence.; Results: Fifteen articles met the inclusion criteria. All studies demonstrated satisfactory quality with regard to study design, conduct, analysis and presentation of results. Eight (53.3%) of the studies (1 paediatric, 4 all ages/adult, 3 ecological) found a moderate level of evidence of an inverse association between distance and ED visit volume or utilization for non-urgent medical conditions, while the remaining studies reported very low or low evidence.; Conclusions: Half of the studies reported non-urgent ED use to be associated with shortest distance traveled or transportation time. This finding bears implications for healthcare policies aiming to reduce ED use for non-urgent care.

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22. **Care conundrum in the emergency department: The gap between clinician awareness and patient expectations surrounding advance directives**

Authors: Manfredi, Rita A.;Riley, Jessica and Lunsford, Beverly

Publication Date: 2024

Journal: The International Journal of Health Planning and Management

Abstract: Objectives: Clinicians in the emergency department (ED) frequently encounter seriously ill patients at a time when advance directives may be pivotal in improved clinician decision-making. The objectives of this study were to identify the prevalence of advanced directives in ED patients, as well as patterns of advance care discussions between patients and providers. This study describes patients' perceptions and expectations of such serious illness discussions in an emergency care setting with the expectation of including patients as strategic members of the care team.; Methods: Trained research assistants in two emergency departments surveyed patients over age 65, or their caregivers, from July 2016 to August 2018. Patients were verbally administered a standard survey tool related to advance directives and advance care planning.; Results: 497 out of 877 patients completed surveys (59.4%). 50% of patients reported having an advance care planning document. The large majority (92%) of patients with an advance directive had not been asked about it during their ED visit. When questioned about their personal preferences, 79% of patients thought emergency physicians should be aware of their wishes regarding life-sustaining treatments and end-of-life care. Paradoxically, only 38% expressed a desire to discuss advance care plans with an ED clinician.; Conclusions: Older patients expect emergency clinicians to be aware of their care preferences, yet most are not asked about these care preferences in the ED. The large gap between patient preference and reality suggests the need for more targeted discussion by ED clinicians and translation of patient perspectives into system healthcare improvements. Future studies should explore barriers to advance care planning in the ED as well as patient preferences for these conversations to support a true healthcare learning system. (© 2024 John Wiley & Sons Ltd.)

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23. **The experiences of trans (binary and non-binary) patients accessing care in the emergency department: An integrative review**

Authors: Muller, Jake A.;Forster, Elizabeth M.;Corones-Watkins, Katina and Chaplin, Belinda

Publication Date: 2024

Journal: Australasian Emergency Care 27(3), pp. 167–176

Abstract: Accessing care in the Emergency Department is often fraught with stress and heightened emotions due to illness or injury, and the complexity of navigating an often busy and overwhelming healthcare setting. For people who identify as trans (binary and non-binary), accessing Emergency Department care is often associated with additional stress or avoided due to fears of discrimination, or previous negative experiences (1). The aim of this integrative review was to identify and review the literature relating to the experiences of trans (binary and non-binary) people accessing Emergency Department care, to guide practice and future research. A structured search process was used to identify 11 articles published between January 2013 and November 2023. These articles were appraised using the mixed methods appraisal tool (MMAT) (2) and included in this review. Utilising the methodology outlined by Whittemore & Knafl (3), a constant comparison analytic approach identified five key themes; 1. emergency department context; 2. interactions with staff and language; 3. health professional knowledge; 4. advocacy; and 5. disclosing trans status. This review identified a perceived lack of competence for healthcare providers to deliver gender affirming healthcare in the Emergency Department due to perceptions of inadequate healthcare provider knowledge, and structural barriers founded on cisgender processes.; Competing Interests: Declaration of Competing Interest Nil conflicts of interest to disclose. (Copyright © 2024 The Authors. Published by Elsevier Ltd.. All rights reserved.)

24. **Social determinants of health in the emergency department**

Authors: Palmer, Kate;Atkinson, Julie;Woodland, Jen;McDougall, Pam;Chandra, Kavish and Atkinson, Paul

Publication Date: 2024

Journal: Cjem

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25. **Nurses' moral judgements during emergency department triage - A prospective mixed multicenter study**

Authors: Pilleron, Benjamin;Douillet, Delphine;Furon, Yoakim;Haubertin, Carole;Parot-Schinkel, Elsa;Vielle, Bruno;Roy, Pierre-Marie and Poiroux, Laurent

Publication Date: 2024

Journal: International Emergency Nursing 75, pp. 101479

Abstract: Introduction: In EDs, triage ensures that patients whose condition requires immediate care are prioritized while reducing overcrowding. Previous studies have described the manifestation of caregivers' moral judgements of patients in EDs. The equal treatment of patients in clinical practice presents a major issue. Studying the impact of prejudice on clinical practice in the ED setting provides an opportunity to rethink clinical tools, organizations and future training needs. Our study sought to describe the moral judgements expressed by triage nurses during admission interviews in emergency departments and to assess their impact on patient management.; Methods: An exploratory sequential mixed-method study was performed. The study was conducted between January 1, 2018, and February 18, 2018, in the EDs of three French hospitals. Five hundred and three patients and 79 triage nurses participated in the study. Audio recordings, observations and written handover reports made by nurses during admission triage interviews were analyzed with a view to discerning whether moral judgements were expressed in them. We studied the impact of moral judgements on patient management in the emergency department.; Results: Abstract Moral judgements were made in 70% of the triage situations studied (n=351/503). They could be classified in seven categories. Patients were more likely to be subjected to moral judgements if they were over 75 years old, visibly disabled or if they had visible signs of alcohol intoxication. Being subjected to moral judgement was associated with differential treatment, including assignment of a triage score that differed from the theoretical triage score.; Conclusion: More than two thirds of patients admitted to EDs were triaged using moral criteria. Patients who were morally judged at the admission interview were more likely to be treated differently.; Competing Interests: Declaration of Competing Interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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26. **Emergency Severity Index Version 4 and Triage of Pediatric Emergency Department Patients**

Authors: Sax, Dana R.;Warton, E. M.;Kene, Mamata V.;Ballard, Dustin W.;Vitale, Tina J.;Timm, Jenna A.;Adams, Eloa S.;McGauhey, Katherine R.;Pines, Jesse M. and Reed, Mary E.

Publication Date: 2024

Journal: JAMA Pediatrics

Abstract: Importance: Most emergency departments (EDs) across the US use the Emergency Severity Index (ESI) to predict acuity and resource needs. A comprehensive assessment of ESI accuracy among pediatric patients is lacking.; Objective: To assess the frequency of mistriage using ESI (version

4) among pediatric ED visits using automated measures of mistriage and identify characteristics associated with mistriage.; Design, Setting, and Participants: This cohort study used operational measures for each ESI level to classify encounters as undertriaged, overtriaged, or correctly triaged to assess the accuracy of the ESI and identify characteristics of mistriage. Participants were pediatric patients at 21 EDs within Kaiser Permanente Northern California from January 1, 2016, to December 31, 2020. During that time, version 4 of the ESI was in use by these EDs. Visits with missing ESI, incomplete ED time variables, patients transferred from another ED, and those who left against medical advice or without being seen were excluded. Data were analyzed between January 2022 and June 2023.; Exposures: Assigned ESI level.; Main Outcomes and Measures: Rates of undertriage and overtriage by assigned ESI level based on mistriage algorithm, patient and visit characteristics associated with undertriage and overtriage.; Results: This study included 1 016 816 pediatric ED visits; the mean (SD) age of patients was 7.3 (5.6) years, 479 610 (47.2%) were female, and 537 206 (52.8%) were male. Correct triage occurred in 346 918 visits (34.1%; 95% CI, 34.0%-34.2%), while overtriage and undertriage occurred in 594 485 visits (58.5%; 95% CI, 58.4%-58.6%) and 75 413 visits (7.4%; 95% CI, 7.4%-7.5%), respectively. In adjusted analyses, undertriage was more common among children at least 6 years old compared with those younger 6 years; male patients compared with female patients; patients with Asian, Black, or Hispanic or other races or ethnicities compared with White patients; patients with comorbid illnesses compared with those without; and patients who arrived by ambulance compared with nonambulance patients.; Conclusions and Relevance: This multicenter retrospective study found that mistriage with ESI version 4 was common in pediatric ED visits. There is an opportunity to improve pediatric ED triage, both in early identification of critically ill patients (limit undertriage) and in more accurate identification of low-acuity patients with low resource needs (limit overtriage). Future research should include assessments based on version 5 of the ESI, which was released after this study was completed.

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27. **Initiative to deprescribe high-risk drugs for older adults presenting to the emergency department after falls**

Authors: Selman, Katherine;Roberts, Ellen;Niznik, Joshua;Anton, Greta;Kelley, Casey;Northam, Kalynn;Teresi, Brittni B.;Casey, Martin F.;Busby-Whitehead, Jan and Davenport, Kathleen

Publication Date: 2024

Journal: Journal of the American Geriatrics Society 72 Suppl 3, pp. S60–S67

Abstract: Background: Over 35 million falls occur in older adults annually and are associated with increased emergency department (ED) revisits and 1-year mortality. Despite associations between medications and falls, the prevalence of fall risk-increasing drugs remains high. Our objective was to implement an ED-based medication reconciliation for patients presenting after falls and determine whether an intervention targeting high-risk medications was related to decreased future falls.; Methods: This was an observational prospective cohort study at a single site in the United States. Adults 65 years and older presenting to the ED after falls had a pharmacist review their medicines. Pharmacists made recommendations to taper, stop, or discuss medications with the primary clinician. At 3, 6, and 12 months, we recorded the number of fall-related return ED visits and determined if recommended medication changes had been implemented. We compared the rate of return visits of patients who had followed the medication change recommendations and those who received recommendations but had no change in their medications using chi-square tests.; Results: A total of 577 patients (mean age 81 years, 63.6% female) were enrolled of 1509 potentially eligible patients. High-risk medications were identified in 310 patients (53.7%) who received medication recommendations. High-risk medications were associated with repeat fall-related visits at 12 months (risk difference 8.1% 95% confidence interval 0.97-15.0]). A total of 134 (43%) patients on high-risk medications had evidence of medication modification. At 12 months, there was no statistically significant difference in return fall visits between patients who had modifications to medications compared with those who had not implemented changes ($p = 0.551$).; Conclusions: Our findings identified opportunities for medication optimization in over half of emergency visits for falls and demonstrated that medication counseling in the ED is feasible. However, evaluation of the effect on future falls was limited. (© 2024 The Authors. Journal of the American

Geriatrics Society published by Wiley Periodicals LLC on behalf of The American Geriatrics Society.)

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28. **Scheduled Follow-Up and Association with Emergency Department Use and Readmission after Trauma**

Authors: Smith, Sophia M.;Zhao, Xuewei;Kenzik, Kelly;Michael, Cara;Jenkins, Kendall and Sanchez, Sabrina E.

Publication Date: 2024

Journal: Journal of the American College of Surgeons 239(3), pp. 234–241

Abstract: Background: After traumatic injury, 13% to 14% of patients use the emergency department (ED) and 11% are readmitted within 30 days. Decreasing ED visits and readmission represents a target for quality improvement. This cohort study evaluates risk factors for ED visits and readmission after trauma, focusing on outpatient follow-up.; Study Design: We conducted a retrospective chart review of adult trauma admissions from January 1, 2018, to December 31, 2021. Our primary exposure was outpatient follow-up, primary outcome was ED use, and secondary outcome was readmission. Multivariable logistic regression evaluated the association between primary exposure and outcomes, adjusting for factors identified on unadjusted analysis.; Results: In total, 2,266 patients met inclusion criteria, with an 11.3% ED visit rate and 4.1% readmission rate. Attending follow-up did not have a significant association with ED visit (odds ratio 0.99, 95% CI 0.99 to 2.01, p = 0.05) or readmission rate (odds ratio 1.68, 95% CI 0.95 to 2.99, p = 0.08). Significant associations with ED use included non-White race, depression, anxiety, substance use disorder, discharge disposition, and being discharged with lines or drains. Significant associations with readmission included depression, anxiety, and discharge disposition.; Conclusions: Emphasizing outpatient follow-up in trauma patients is not an effective target to decrease ED use or readmission. Future studies should focus on supporting patients with mental health comorbidities and investigating interventions to optimally engage with trauma patients after hospital discharge.

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29. **The Brain Injury Guidelines (BIG) and emergency department observation and admission rates: A retrospective cohort study**

Authors: Southerland, Lauren T.;Alnemer, Amar;Laufenberg, Craig;Nimjee, Shahid M. and Bischof, Jason J.

Publication Date: 2024

Journal: The American Journal of Emergency Medicine 82, pp. 37–41

Abstract: Background: Emergency Department (ED) Observation Units (OU) can provide safe, effective care for low risk patients with intracranial hemorrhages. We compared current ED OU use for patients with subdural hematomas (SDH) to the validated Brain Injury Guidelines (BIG) to evaluate the potential impact of implementing this risk stratification tool.; Methods: Retrospective cohort of patients ≥18 years old with SDH of any cause from 2014 to 2020 to evaluate for potential missed OU cases. Missed OU cases were defined as patients with an initial Glasgow Coma Score (GCS) of 15 with hospital length of stays (LOS) <2 days, who did not meet the composite outcome and were not cared for in the OU or discharged from the ED. Composite outcome included in-hospital death or transition to hospice care, neurosurgical intervention, GCS decline, and worsening SDH size. Secondary outcomes were whether application of BIG would increase ED OU use or reduce CT use.; Results: 264 patients met inclusion criteria over 5.3 year study timeframe. Mean age was 61 years (range 19-93) and 61.4% were male. SDH were traumatic in 76.9% and 60.2% of the cohort had additional injuries. The admission rate was 81.4% (n = 215). Fourteen (6.5%) missed OU cases were identified (2.6/year). Retrospective application of BIG resulted in 82.6% (n = 217) at BIG 3, 10.2% (n = 27) at BIG 2 and

7.6% (n = 20) at BIG 1. Application of BIG would not have decreased admission rates (82.6% BIG 3) and BIG 1 and 2 admissions were often for medical co-morbidities. The composite outcome was met in 50% of BIG 3, 22% of BIG 2, and no BIG 1 patients.; Conclusion: In a level 1 trauma center with an established observation unit, current clinical care processes missed very few patients who could be discharged or placed in ED OU for SDH. Hospital admissions in BIG 1/2 were driven by co-morbidities and/or injuries, limiting applicability of BIG to this population.; Competing Interests: Declaration of competing interest The authors report no conflicts of interest.

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30. **Impact of the Southeast Melbourne Virtual Emergency Department on reducing transfers from residential aged care facilities**

Authors: Sri-Ganeshan, Muhuntha;Mitra, Biswadev;Soldatos, Georgia;Rosler, Rachel;Goldie, Neil;Meek, Robert;Howard, Madeleine;Bertolucci, Michelle;Egerton-Warburton, Diana;Manderson, Rachel;Luzuriaga, Vince;McGee, Fergus;O'Reilly, Gerard,M. and Cameron, Peter A.

Publication Date: 2024

Journal: Emergency Medicine Australasia : EMA

Abstract: Objective: To evaluate the impact of the Southeast Melbourne Virtual Emergency Department (SEMVED) on transfers from residential aged care facilities (RACFs) to traditional EDs.; Methods: A cohort study of residents requesting transfer to the ED via ambulance within participating health networks' catchments from April to June 2022.; Results: Two hundred thirty-eight VED consultations occurred with 79% (188/238) avoiding transfer. This represented an avoidance of 12% (188/1511) of all requests for transfer during operating hours.; Conclusions: SEMVED prevented unnecessary transfers and enabled in-facility care. Integration into community outreach programmes could enhance care delivery. Patient safety outcomes were not formally assessed by our methodology.

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31. **Subjective risk factors of severe pain at discharge from the emergency department**

Authors: Tandzi Tonleu, Florentine;Pilet, Claire;Lagarde, Emmanuel;Gil-Jardiné, Cédric;Galinski, Michel and Lafont, Sylviane

Publication Date: 2024

Journal: Internal and Emergency Medicine

Abstract: Objective: To examine the risk factors for severe pain upon discharge from the emergency department, assuming appropriate pharmacological treatment of pain, in order to improve pain relief in emergency departments and reduce the risk of potential chronic pain.; Methods: An analytic study was conducted utilizing data from a multicenter randomized controlled trial to evaluate patients' experiences upon admission and discharge from the emergency department (ED). Severe pain was defined by a score of six on a numerical rating scale of zero to ten. Stress and negative emotions (including anger, fear, sadness, and regret) were evaluated using numerical rating scales, respectively ranging from 0 to 10 and 1 to 5. The risk factors of severe pain at discharge (SPD) from ED were calculated using logistic regression considering patient characteristics evaluated at their admission to the ED.; Results: From the 1240 patients analyzed, 22.2% had SPD from the ED. Each increase of one point in the intensity of acute pain and anger was significantly associated with a higher risk of SPD from ED. In addition, woman, negative self-perceived health, and age under 65 years, are other significant factors associated with SPD from the ED.; Discussion: In addition to acute pain on admission, this study

highlights new factors to consider when managing pain in emergency care, such as anger, and self-perceived health. Addressing these aspects can help reduce the likelihood of developing SPD from the ED, which in turn could potentially lead to the onset of chronic pain in future.; Clinical Trial Registry: SOFTER IV Project clinical identification number: NCT04916678. (© 2024. The Author(s), under exclusive licence to Società Italiana di Medicina Interna (SIMI).)

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32. **Improving emergency department flow by introducing four interventions simultaneously. A quality improvement project**

Authors: Van der Linden, M. C. Christien;Van Loon-van Gaalen, M. Merel;Meylaerts, S. A. G. S.;Quarles Van Ufford, H. M. E. Jet;Woldhek, A. A.;Van Woerden, G. Geesje and Van der Linden, N. Naomi

Publication Date: 2024

Journal: International Emergency Nursing 76, pp. 101499

Abstract: Background: Emergency department (ED) crowding is a widespread issue with adverse effects on patient care and outcomes.; Local Problem: ED crowding exacerbates wait times and compromises patient care, prompting opportunities for internal process improvement.; Method: Over one week, the ED flow project team implemented four interventions, including an additional triage station, to optimize patient flow. We compared triage times, length of stay, crowding levels, and patient experiences with two control periods.; Results: During peak hours, waiting times to triage decreased significantly with a median of 20 min (IQR 15-30) in the project week and 26 min (IQR 18-37) in the control weeks. Self-referrals decreased, while general practitioner referrals remained unchanged. Individual patient length of stay was unaffected, but crowding reduced notably during the project week. We found no difference in patient experiences between the periods.; Conclusion: The interventions contributed to reduced crowding and improved patient flow. The dedication of the ED flow project team and the ED nurses was crucial to these outcomes. An additional triage station during peak hours in the ED was established as a structural change.; Competing Interests: Declaration of competing interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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33. **Delirium prevalence in emergency department patients: A systematic review and meta-analysis**

Authors: Wang, Yusi;Dai, Min;Chen, Xiaoli and Zhang, Jianna

Publication Date: 2024

Journal: Nursing in Critical Care

Abstract: Background: Delirium is a common acute mental disorder, and its adverse outcomes often cause distress to both patients and their families. Despite its prevalence in patients treated in emergency departments, delirium is frequently overlooked.; Aim: This study aims to systematically evaluated and meta-analysis the prevalence of delirium among emergency patients, providing insights into its prevalence and offering guidance for its management and prevention.; Study Design: Observational studies on the prevalence of delirium in emergency departments were systematically searched in PubMed, Embase, the Cochrane Library and Medline databases. Relevant English-language studies published up to 18 September 2023 were reviewed, and meta-analysis was conducted using Stata 14.0 software. Quality assessment of included literature was performed using the methodological index for non-randomized studies (MINORS), and publication bias was assessed using Egger's test.; Results: Thirteen studies encompassing a total sample size of 33 839 cases were

included, with 3082 cases of delirium incidents. The findings revealed a 15% prevalence rate of delirium in emergency departments, with a 95% confidence interval (CI) of (0.10, 0.20) and an overall heterogeneity of 98.37% (p = .000). Among emergency department patients over 65 years of age, the prevalence of delirium was 12%, with a 95% CI of (0.07, 0.19) and a heterogeneity of 94.59%. For patients over 18 years of age, the prevalence was 17%, with a 95% CI of (0.10, 0.25) and a heterogeneity of 98.94%.; Conclusions: This meta-analysis reveals an overall 15% prevalence rate of delirium among patients in emergency departments.; Relevance to Clinical Practice: In clinical practice, emergency medical staff should strengthen the screening and management of emergency delirium patients. (© 2024 British Association of Critical Care Nurses.)

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34. **Exploring perceptions of reporting violence against healthcare workers in the emergency department: A qualitative study**

Authors: Whalen, Madeleine;Bradley, Maia;Hanson, Ginger C.;Maliszewski, Barbara and Pandian, Vinciya

Publication Date: 2024

Journal: International Emergency Nursing 76, pp. 101500

Abstract: Background: Violence against healthcare workers is a pervasive, yet in many cases, under-reported problem. This is due to various factors, including lack of time, support and a universal understanding of what constitutes a reportable event. This study explored facilitators and barriers to reporting workplace violence among emergency department nurses.; Methods: In this descriptive, qualitative study, researchers conducted open-ended interviews with emergency nurses considered to be "high-" and "non-reporters" of violent events and analyzed for themes.; Results: Participants cited consistent factors associated with less reporting, factors associated with more reporting and effectiveness of existing safety measures.; Conclusions: To encourage the reporting of violent events, frequently cited barriers and facilitators should be addressed. Strategies such as integrating reporting mechanisms into the health record, creating nuanced definitions of reportable events, and consistent education with positive feedback can promote reporting by staff. These efforts should be combined with prevention strategies to ensure we are collecting correct data about the success or failure of these programs.; Competing Interests: Declaration of competing interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. (Copyright © 2024 Elsevier Ltd. All rights reserved.)

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35. **Development of an Emergency Department Surge Plan Based on the NEDOCS score**

Authors: Wilkins, Thad;Shiver, Stephen;Butler, Christa;Corcoran, Leanna;Marshall, Roslyn;Brody, Carol;Cliett, Kimberly;Nolan, Mary Anne;Sowinski, Tracie and Schreiber, Mark

Publication Date: 2024

Journal: Annals of Family Medicine 21

Abstract: Context: Emergency Department (ED) overcrowding is a significant problem worldwide. Many factors contribute to ED overcrowding, including staffing shortages, diagnostic testing delays, and inadequate inpatient beds to meet the demand. ED overcrowding results in patient safety issues like higher inpatient mortality and other negative impacts, such as an increased length of stay (LOS) and an increased trend of leaving the ED before undergoing an evaluation and treatment. The National emergency department overcrowding study (NEDOCS) is a scoring system to detect ED overcrowding objectively. Objective: To determine the impact of implementing an ED adult surge plan on ED throughput. Study Design: Prospective single-site study of adults presenting to the ED from January to April 2023. Setting or Dataset: Academic medical center. Population studied: Adult ED patients.

Outcome Measures: Mean adult ED hold times, mean ED LOS, left without seen rate, mean door-to-doctor exam time, mean NEDOCS scores. Results: This analysis included 16,701 ED visits and 12,269 patients. During this time, 3,751 (22.5%) patients were admitted to inpatient status, and 1,413 (8.5%) were admitted to observation status. Pre-implementation, the mean ED hold time was 9.9 hours which decreased to 5.7 hours post-implementation (p=0.03). Pre-implementation, the mean ED LOS was 15.4 hours which decreased to 14.1 hours post-implementation (p=ns). Pre-implementation, the left without being seen rate was 4.8%, which decreased to 4.0% post-implementation (p=ns). Pre-implementation, the mean door-to-doctor exam time was 57.6 minutes which decreased to 54.0 minutes postimplementation (p=ns). Pre-implementation, the mean NEDOCS score was 186.2, which decreased to 131.2 post-implementation (p<0.0001). Conclusions: Our study suggests that implementing an ED adult surge plan can significantly improve ED hold hours and NEDOCS scores. However, it is important to note that other important ED throughput metrics (mean ED LOS, left without seen rate, mean door-to-doctor exam time) did not significantly improve. Further research may be necessary to understand the factors contributing to these outcomes and identify additional interventions that may improve ED throughput.; Competing Interests: Authors report none. (2023 Annals of Family Medicine, Inc.)