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This monthly current awareness bulletin aims to highlight relevant reports and peer-reviewed literature in emergency and unscheduled care. The bulletin focuses on efforts to improve patient flow, reduce waiting times and alternative care models.

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References

Agius S., et al. (2025) **'A Cognitive Task Analysis for Developing a Clinical Decision Support System for Emergency Triage.'** ***Journal of Emergency Nursing 51*(6), 1028–1045.e4.**

Introduction: The Emergency Department (ED) serves as a vital gateway to acute care, where timely and accurate triage decisions are essential to ensure appropriate patient prioritisation and efficient use of limited resources. Triage nurses operate in high-pressure environments and must make rapid decisions, often under conditions of uncertainty, relying on a blend of analytical reasoning and intuitive judgement. However, this complex decision-making process is susceptible to a range of challenges, including cognitive biases, communication breakdowns, procedural inconsistencies, fatigue, and stress, all of which can compromise patient safety and care quality. This study explores the multifaceted nature of triage decision-making, focusing on the influencing factors, cognitive processes, and real-world challenges experienced by nurses. By deepening our understanding of these elements, the paper lays the groundwork for the development of effective Clinical Decision Support Systems (CDSS) that can enhance clinical judgement and support nurses in delivering safe, timely, and efficient emergency care.

Method(s): The study used cognitive task analysis through interviews and observations to capture the cognitive strategies used by nurses during triage. This approach provided detailed insights into how nurses assess patient acuity, handle

uncertainty, verify decisions, and manage challenges.
Result(s): This study identified 26 themes from interviews and observations, illustrating how nurses use experience and protocols such as the Emergency Severity Index to manage patient flow. Key challenges encountered in triage included overcrowding, staff shortages, high patient acuity, communication barriers, frequent interruptions, and multitasking demands. Despite these hurdles, nurses adapted through prioritization and collaboration.
Discussion(s): The findings highlight significant implications for emergency health care, mainly the need for improvements in triage decision making, resource utilization, and patient safety. Data-driven clinical decision support systems can enhance decision making, streamline assessments, reduce delays, and improve safety and equity in triage, particularly in high-stress, resource-constrained environments. Relevance to Clinical Practice: This study has significant implications for clinical practice, particularly in emergency care settings where effective triage is critical for patient outcomes. By exploring the cognitive processes and challenges faced by triage nurses, the research provides valuable insights into the complexities of decision making under pressure. The findings emphasize the importance of clinical decision support systems to enhance decision accuracy, reduce cognitive load, and mitigate the risk of errors. Implementing data-driven technologies and refining triage protocols can lead to more efficient resource allocation, more streamlined workflows, reduced waiting times, and improved patient safety. By aligning clinical decision support system design with the cognitive processes of triage nurses, this study supports the development of tools that enhance decision accuracy, reduce cognitive load, and improve patient prioritization, ultimately promoting safer, faster, and more consistent triage in high-pressure emergency settings.

Alimiri Dehbaghi H., and Khoshgard, K. (2025) 'Revolutionizing Emergency Care: An Overview of the Transformative Role of Artificial Intelligence in Diagnosis, Triage, and Patient Management.' *International Journal of Emergency Medicine 18*(1) (pagination), Article Number: 242. Date of Publication: 01 Dec 2025.

Background: The deployment of artificial intelligence (AI) applications in the healthcare domain has witnessed a significant and noteworthy surge. This is particularly pronounced within the fast-paced and critical realm of emergency care, where the integration of AI has manifested as a transformative force, exerting profound influence on the diagnosis of trauma-related complications.
Objective(s): This scholarly article aims to provide an in-depth exploration of the multifaceted applications of AI in the emergency department, elucidating its remarkable efficacy in expediting and refining the precision of diagnoses and patient management within this exigent setting.

Method(s): Through a meticulous and comprehensive review of pertinent literature, this study endeavors to delineate and emphasize key AI applications, thereby illuminating their significant impact in optimizing patient outcomes and rationalizing workflows within emergency care. This scholarly exploration seeks to underscore the burgeoning potential of AI as an indispensable ally in the collective pursuit of achieving apid and accurate diagnoses, particularly in high-stakes emergency settings.
Result(s): Findings reveal that AI is driving a paradigm shift in emergency medicine by transforming clinical approaches to urgent cases. Its implementation has shown substantial potential in optimizing patient outcomes and streamlining clinical workflows.
Conclusion(s): AI stands as a promising and indispensable tool in the pursuit of rapid and accurate diagnoses in emergency care. Its continued integration is poised to significantly enhance clinical decision-making and patient care in high-stakes scenarios.

Annweiler C., et al. (2025) **'Back-UPUG: Risk Factors at Emergency Admission for Early Unplanned Readmissions in Older Adults Following Short-Stay Geriatric Hospitalization After Emergency Care.'** ***Geriatrics and Gerontology International 25*****(11), 1555–1563.**
Introduction: Specific short-stay Post-Emergency Geriatric Units (PEGUs) might reduce length of stay and iatrogenic loss of independence without increasing the risk of early readmission. The aim of this study was to evaluate the rate and risk factors at emergency admission for early rehospitalization in a PEGU.
Method(s): The BACK-UPUG study is a retrospective observational study conducted at a Post-Emergency Geriatric Unit (University Hospital of Angers) over nearly 1 year, including patients hospitalized in the unit and discharged home. The early readmission rate within 30 days after discharge was calculated, and statistical descriptive, univariate, and multivariate analyses were carried out.
Result(s): A total of 450 patients were included in the analysis (mean age 88 years; 39.3% men, 60.7% women). Of these, 75 patients (16.6%) were readmitted within 1 month after home discharge. Early readmission rate was significantly associated with excessive polypharmacy (odds ratio [OR] = 1.95; p = 0.014), being known by our geriatric team (OR = 2.36; p = 0.001), a history of recent hospitalization (OR = 2.00; p = 0.038), and initial severity criteria such as respiratory failure (OR = 1.94; p = 0.049) or hemodynamic disorders (OR = 3.91; p = 0.029). An initial hospital admission diagnosis of infectious disease was a protective factor (OR = 0.45; p = 0.023).
Conclusion(s): Excessive polypharmacy, geriatric team follow-up, recent hospitalization, and initial severity criteria are risk factors for early rehospitalization after emergency PEGU admission, while infectious pathology appears protective.

Cooper B.L., et al. (2025) **'The Dugout: Reimagined Team-Based Triage in the Emergency Department.'** ***Journal for Healthcare Quality : Official Publication of the National Association for Healthcare Quality*** **(pagination), Date of Publication: 28 Oct 2025.**

BACKGROUND: Emergency department (ED) crowding is a crisis of an overstrained health care system that is associated with poor patient outcomes and dissatisfaction. We aimed to assess the effect of an interdisciplinary, provider-led triage team, "the Dugout," on ED length of stay (LOS), door-to-provider (DTP), and left without being seen (LWBS) rates.
METHOD(S): We used a before-and-after design. The setting is an urban, teaching, adult and pediatric 63-bed emergency department with a total annual volume more than 90,000 and an admission rate of 35%. Data were collected on adult patients (18 years and older) who presented during a similar 6-month period before (October 2023-March 2024) and after (October 2024-March 2025) implementation of the Dugout.
RESULT(S): There were 34,106 and 31,704 adult encounters in the pre- and postimplementation periods, respectively. The Dugout was associated with a reduction in LWBS from 14.1% to 3.0% ($p < .001$). DTP decreased from a median of 59 to 38 minutes ($p < .001$). The median overall ED LOS decreased from 448 to 429 minutes ($p < .001$), and the LOS for discharged patients decreased from 407 to 344 minutes ($p < .001$).
CONCLUSION(S): The introduction of a dedicated, interdisciplinary team stationed in the triage area was associated with reduced LWBS, DTP, and ED LOS.

Evans C., and Da'Costa, A. (2025) **'Using a Structured Process for Patient Assessment and Triage to Reduce Ambulance Handover Delays and Enhance Patient Outcomes.'** ***Emergency Nurse : The Journal of the RCN Accident and Emergency Nursing Association*** **(pagination), Date of Publication: 28 Oct 2025.**

Ambulance handover between ambulance personnel and emergency department (ED) staff, most often nurses, is a time-critical and complex event that should take place within 15 minutes of the ambulance arriving at the hospital site. However, in recent years there has been an increase in ambulance handover delays, potentially resulting in patient harm. Providing a consistent service to maximise the safety and effectiveness of ambulance handovers is an essential function of all EDs and, increasingly, of acute hospital assessment areas. This article discusses some of the ways in which ambulance handover delays can be addressed, such as using a structured communication tool, and provides an overview of a contemporary standardised approach to initial assessment in the ED that aims to reduce ambulance delays and enhance patient outcomes. The article aims to equip nurses

who are responsible for ambulance handovers and initial patient assessments with examples of best practice to support their clinical decision-making and guide clinical practice.

Jumah A., et al. (2025) **'Predictors of Unplanned Hospital Readmissions and Emergency Department Revisits in Patients with Acute Ischemic Stroke.'** ***Frontiers in Neurology 16*****(pagination), Article Number: 1683753. Date of Publication: 2025.**
Objectives: We aim to identify factors associated with emergency department (ED) revisits and hospital readmissions after acute ischemic stroke (AIS) diagnosis and to determine if early outpatient follow-up can reduce readmissions.
Method(s): We retrospectively identified all AIS patients discharged from a hospital network, from October 1, 2022 to March 31, 2024. Baseline characteristics, inpatient metrics and post-discharge outpatient follow-up were assessed to identify factors associated with ED revisits and readmissions to the healthcare system within 90-days.
Result(s): Of 1,973 patients, 464 (23.5%) had ED visits within 90 days and 263 (13.3%) had hospital readmission within 90 days. The median age was 68 [IQR 58, 77]. In multiple logistic regression analyses, factors independently associated with 90-day ED visit were history of heart failure (HF) (OR 1.46, 95% CI 1.11-1.93; p = 0.007), diabetes mellitus (DM) (OR 1.41, 95% CI 1.12-1.77; p = 0.003), atrial fibrillation (AF) (OR 1.47, 95% CI 1.13-1.92, p = 0.004) and an increasing Charlson comorbidity index (CCI) score (OR 1.10, 95% CI 1.03-1.18), p = 0.003). Factors associated with 90-day readmission were HF (OR 1.51, 95% CI 1.08-2.11, p = 0.015), DM (OR 1.50, 95% CI 1.13-2.01, p = 0.006), AF (OR 1.40, 95% CI 1.00-1.94, p = 0.047) and increasing CCI score (OR 1.12, 95% CI 1.03-1.21, p = 0.006). Discharge to inpatient rehabilitation or skilled nursing facility (vs. home or home health) were associated with 90-day ED revisits and hospital readmissions. Patients who completed early (<30 days) outpatient stroke clinic follow-up had a lower likelihood of 90-day readmission (OR 0.68, 95% CI 0.52-0.90; p = 0.006).
Conclusion(s): Patients with certain comorbidities including HF, DM, AF and those with a higher CCI score have a higher likelihood of a 90-day ED revisit and hospital readmission. Unplanned hospital readmissions may be preventable with early outpatient visits in a dedicated stroke clinic after discharge for AIS patients.

Khamis M.M., et al. (2025) **'Effect of Emergency Department Boarding on ICU Length of Stay and in-Hospital Mortality; A Retrospective Cohort Study.'** ***Archives of Academic Emergency Medicine 13*****(1) (pagination), Article**

Number: e54. Date of Publication: 01 Se 2025.

Introduction: One of the main contributing factors of emergency department (ED) crowding is ED patient boarding. This study aimed to assess the factors influencing length of stay (LOS) in intensive care unit (ICU) and in-hospital mortality (IHM) among ICU-admitted ED boarded cases.
Method(s): A retrospective cohort study was conducted on adult patients at a tertiary care hospital in Lebanon who required ICU admission and stayed for 6+ hours in the ED during one year. The independent predictive factors of LOS in ICU and IHM were studied using multivariable logistic regression analysis.
Result(s): Out of 583 patients (mean age 69.5 years; 61.6% male), 12.8% died in hospital. 25.5% had a prolonged ICU stay ($>=7 days) with a median LOS of 3 days. Prolonged ICU LOS was associated with previous cancer diagnosis (adjusted odds ratio (aOR)=1.66), prehospital bedridden status (>5 days, aOR=4.41), ED vasopressor use (aOR=1.86), extended ED boarding (aOR=1.03), IHM (aOR=3.37), and not being married (aOR=2.0). IHM was associated with abnormal Modified Shock Index at ED triage (aOR=7.35), ED mechanical ventilation use (aOR=6.07), ED triage Shock Index >=1.3 (aOR=18.25), and long ICU stay (aOR=7.48). ED-triage Saturation of Peripheral Oxygen (SPO2) level was negatively associated with IHM (aOR=0.89).
Conclusion(s): It seems that, ED boarding of ICU patients is associated with an increase in ICU LOS, which is associated with an increase in IHM. Hospitals should allocate resources to reduce ED boarding and improve outcomes for critically ill patients.

Lee G., et al. (2025) **'Implementation and Evaluation of a Virtual Transitional Care Intervention using Automated Text Messaging and Virtual Visits After Emergency Department Discharges: Retrospective Cohort Study.'** ***JMIR mHealth and uHealth 13*****, e77973.**

Background: Emergency department (ED) overcrowding and avoidable revisits challenge health systems, with approximately 20% of patients returning within 30 days. ED-based transitional care interventions, including automated SMS text messaging, offer scalable, cost-effective means to improve follow-up, though evidence remains limited.
Objective(s): This study evaluated a transitional care intervention combining SMS text messaging and virtual transitional care visits to reduce ED revisits and improve outpatient follow-up.
Method(s): This retrospective observational cohort study included patients discharged from 4 EDs within a single US health system between September 2023 and September 2024. Patients were categorized into two groups based on intervention engagements: (1) completed (requested, scheduled, and completed a

visit) and (2) noncompleted (requested, scheduled, and did not complete). The primary outcome was spontaneous, unplanned ED revisits within 90 days; secondary outcomes included outpatient follow-up and time to first outpatient evaluation. Between-group differences were assessed using descriptive statistics and multivariable regression models (with P<.05 considered statistically significant). Result(s): Of 68,115 discharged patients, 42.72% (29,100/68,115) received an automated SMS text messaging for the virtual transitional care program, and 2.93% (853/29,100) accessed the scheduling link. Of these, 56.5% (482/853) requested a visit, 49.8% (240/482) scheduled, and 70% (168/240) completed the visit (completed group). Among 72 noncompleted patients, 57% (n=41) did not show, 32% (n=23) canceled, and 11% (n=8) scheduled 2 appointments but completed neither. Nearly half (35/72, 49%) of the noncompleted group had a subsequent ambulatory follow-up. Demographics, comorbidities, and acuity were similar. The noncompleted group was nearly twice as likely to return to the ED within 90 days (21/72, 29% vs 28/150 18.7%; chi21=4.20, P=.04; odds ratio 2.11, 95% CI 1.02-4.33), while the completed group was more likely to complete outpatient follow-up (35/72, 49% vs 51/168, 30.4%; chi21=6.60, P=.01; odds ratio 2.15, 95% CI 1.03-4.77). Time to first outpatient visit did not differ significantly between groups (mean 15.7, SD 19.0 d vs mean 19.8, SD 20.7 d; DELTAbeta=-1.93, 95% CI -10.09 to 6.42; P=.65). Conclusion(s): A combined SMS text messaging and virtual transitional care program lowered 90-day ED revisits and increased outpatient follow-up, but engagement was low (2.9%). Future work should focus on optimizing care delivery and developing strategies to expand reach across the broader ED discharge population.

LeesDeutsch L., et al. (2025) **'Development of a Survey Tool to Demonstrate Opportunities and Characteristics of Patients Suitable for Criteria Led Discharge from Hospital - a Multi-Centre Study with Participatory Co-Design.'** ***BMC Health Services Research 25*(1), 1492.**

Lim J., et al. (2025) **'Beyond Annual Averages: Rethinking Metrics for Emergency Department Crowding and Capacity Planning.'** ***Journal of Emergency Medicine 79*, 591–602.**
Background Emergency department (ED) crowding compromises patient safety and care efficiency. Most EDs assess crowding using the Annual Average (AA) occupancy method as a baseline due to its simplicity. However, AA's long-term averaging fails to capture short-term fluctuations, leading to inaccurate capacity estimates. Objectives This study compares six methods for estimating ED bed needs, focusing on evaluating Hourly Peak Bed Occupancy (HPBO) as a practical and accurate alternative to AA. Methods We analyzed data from the National Emergency Department Information System (NEDIS) database, including 408 EDs in

South Korea and 7,678,743 hospitalizations in 2022. We used the Real-Time Occupancy (RTO) method, which defines bed shortage as occupancy exceeding 100% for more than 20% of the time, as the gold standard benchmark for comparison. Five other methods-AA, Monthly Average (MA), Daily Average (DA), Daily Peak Bed Occupancy (DPBO), and HPBO-were compared for estimating additional bed needs. Results Of the 408 EDs, 37 (9.1%) had a bed shortage based on the RTO method. For these EDs, the HPBO method estimated a median of 9 beds (IQR 5-16), closely aligning with the RTO estimate of 7 beds (IQR 3-14). In contrast, the AA method underestimated shortages in 7 EDs, with a median estimate of 7 beds (IQR 1-14). Conclusions HPBO overcomes the limitations of AA by capturing short-term occupancy fluctuations, providing accurate estimates of additional bed needs. This offers healthcare administrators a reliable tool for addressing ED overcrowding and optimizing resource allocation.

Maniaci M.J., et al. (2025) **'Safety in a Hybrid Hospital-at-Home Program Versus Traditional Inpatient Care: A Pragmatic Randomized Controlled Trial.'** ***Journal of Hospital Medicine 20*****(11), 1174–1184.**
Background: Hospital-at-home programs (HaH) in the United States have evolved to include a virtual-hybrid delivery model, where all physician encounters are virtual and partnered with a home care team.
Objective(s): To examine whether a virtual hybrid HaH program enabled by technology has similar clinical outcomes to traditional brick-and-mortar (B&M) hospital care.
Method(s): We conducted a pragmatic trial at three hospitals, randomizing 1150 acutely ill patients requiring hospital care between July 10, 2023, and October 31, 2023 one-to-one into two groups: intervention (HaH) and control (B&M). The primary analysis was an intention-to-treat non-inferiority analysis of the primary outcome, which was a composite of 30-day all-cause mortality and unplanned readmissions. Secondary outcomes included 30-day readmission, all-cause mortality, and patient experience.
Result(s): The mean age was 67.8 (standard deviation [SD] 16.3) years, and 52.2% were female. The primary outcome occurred in 99 (17.3%) HaH patients and 114 (19.8%) B&M patients (odds ratio [OR] 0.85, 95% confidence interval [CI] 0.63-1.14, p =.28), meeting the non-inferiority criterion. Thirty-day unplanned readmission occurred in 84 (14.7%) HaH patients and 101 (17.5%) B&M patients (OR 0.81, 95% CI 0.59-1.11, p =.19). Thirty-day all-cause mortality occurred in 25 (4.4%) HaH patients and 19 (3.3%) B&M patients (OR 1.34, 95% CI 0.73-2.46, p =.35). No HaH patients died while receiving their hospital care at home. HaH program was associated with a higher likelihood of patients reporting feeling extremely comfortable or very comfortable (84.4% HaH; 60.9% B&M, p =.001).
Conclusion(s): A hybrid HaH model is a safe and comfortable alternative to traditional

B&M hospital care.

Martini W.A., et al. (2025) **'Correlating Predicted Admissions with Unscheduled Return Visits: Insights from a Machine Learning Model in Emergency Care.'** ***Journal of Emergency Medicine 79*, 173–180.**
Background Emergency departments (EDs) are adopting machine learning (ML) models to predict hospital admissions and improve patient flow. The association between admission predictions and unscheduled return visits (URVs) remains underexplored. Objectives This study evaluated the relationship between real-time ML-predicted admission likelihood and 72-hour URVs leading to admission across three tertiary care centers. Methods We analyzed 169,288 ED visits from January 1 to December 31, 2023, using an internally developed ML model with 47 clinical features, including demographics, vital signs, and protocol activations. Data were extracted from electronic health records. Expected return visits were excluded. Results The ML model demonstrated strong predictive performance, with an area under the curve (AUC) of 0.88 for hospital admission prediction across the pooled test set. Of 1,996 URVs within 72 hours (1.18%), 6.61% involved multiple returns. Patients with higher admission scores had increased URV rates and hospital admissions: artificial intelligence (AI) Score 25% to 50% to 75% : 13,951 patients; 4.86% URVs; 76.54% admitted on return Conclusion Higher predicted admission scores were associated with increased URVs and hospital admissions. This suggests ML models can improve ED operations by identifying high-risk patients for early intervention and better resource allocation.

Mokhwelepa L.W., et al. (2025) **'Effectiveness of Mental Health Triage Systems in Reducing Psychiatric Emergency Department Admissions.'** ***General Hospital Psychiatry 97*, 294–302.**
Psychiatric emergency department (PEDs) face significant challenges such as overcrowding, prolonged wait times, and resource constraints, often resulting in suboptimal care. Mental health triage systems have been developed to prioritize urgent cases, optimize resource allocation, and reduce unnecessary admissions, yet their effectiveness remains variably reported. This scoping review aimed to systematically synthesize empirical evidence on the effectiveness of mental health triage systems in reducing psychiatric emergency department admissions and identify factors influencing their success. Following Arksey and O'Malley's framework and PRISMA-ScR guidelines, a comprehensive search was conducted across PubMed, PsycINFO, Scopus, and Web of Science for studies published between 2000 and 2025. Included studies evaluated triage interventions in psychiatric emergency settings with reported outcomes on admission rates. Data were extracted and synthesized narratively. Twenty-three studies from diverse international settings met inclusion criteria. Findings indicate that structured triage systems, particularly

nurse-led models employing validated assessment scales, contribute to reductions in avoidable PED admissions. Multi-disciplinary approaches further enhanced decision-making complexity and patient outcomes. Key facilitators included rigorous staff training and integration with community mental health services. Barriers such as inconsistent triage application, limited alternative care options, and staff resistance impeded effectiveness. Mental health triage systems show promise in optimizing psychiatric emergency care by reducing unnecessary admissions and improving prioritization. Their effectiveness depends on standardized protocols, comprehensive training, and strong community linkages. Future research should focus on rigorous, longitudinal evaluations to inform evidence-based triage frameworks.

Nurchis M.C., et al. (2025) **'Assessing the Impact of Waiting Time on Triage Color Code Assignment and One-Year Mortality in the Emergency Department: A Causal Mediation Analysis.'** ***Health Science Reports 8*****(11) (pagination), Article Number: e71520. Date of Publication: 01 Nov 2025.**
Background and Aims: Emergency Department (ED) overcrowding and delays in care affect patient outcomes. While triage systems prioritize care based on urgency, the role of waiting time in mediating the relationship between triage color codes and 1-year mortality remains unclear. This study investigates this mediation effect to improve triage protocols and patient outcomes.
Method(s): A retrospective cohort study was conducted using data from the Fondazione Policlinico Universitario Agostino Gemelli IRCCS ED (2014-2018). The sample included patients assigned green and yellow triage codes, excluding red and white ones. The outcome was 1-year mortality; the mediator was waiting time, defined as the delay between triage assignment and medical evaluation. Causal mediation analysis estimated direct, indirect, and total effects, with sensitivity analyses assessing robustness to unmeasured confounding.
Result(s): Among 56,284 observations, older patients and yellow-coded individuals showed higher 1-year mortality. Waiting time did not significantly mediate the relationship between triage code and mortality (ACME OR: 1.001, 95% CI: 0.999-1.002). Triage code, however, had a direct significant effect on mortality (ADE OR: 1.01, 95% CI: 1.004-1.007). Waiting time mediated a small proportion of the effect (3.4%-13.9%). Sensitivity analyses indicated the mediation effect was sensitive to unmeasured confounding.
Conclusion(s): Triage color code strongly predicts 1-year mortality, independent of waiting time within standard thresholds. For lower-acuity cases, reducing waiting time further may not improve long-term outcomes. Future research should validate these findings across multicenter settings and explore Italy's updated five-color triage system to optimize care delivery.

Onyejesi C.D., et al. (2025) **'Improving Patient Outcomes through Quality Improvement and Safety Culture Interventions in Pediatric Emergency Care: A Systematic Review of Best Practices.'** ***International Journal of Emergency Medicine 18*****(1) (pagination), Article Number: 217. Date of Publication: 01 Dec 2025.**

Pediatric emergency departments (PEDs) are high-risk environments where patient injury can result from delays, unclear diagnoses, and poor communication. Quality improvement (QI) and safety culture initiatives are increasingly being used to improve outcomes, but their interaction in PEDs remains underexplored. This systematic review and meta-analysis evaluated how safety culture and QI initiatives impact clinical and functional outcomes in PEDs. In accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, we systematically searched PubMed, Cochrane, Scopus, and Web of Science through December 2024. We included 31 studies, most of which used pre/post designs; one was a randomized controlled trial. Most interventions aimed to improve care in PEDs by focusing on protocol standardization, safety checklists, simulation-based training and leadership engagement tailored to the pediatric emergency department (PED) setting. Meta-analyses showed a significant decrease in unnecessary radiation exposure (6.45%-20.55%; $p<0.0001$) and PED length of stay (LOS) (~25 minutes; $p<0.05$). Additional findings included decreased healthcare expenses, unnecessary interventions, and better patient flow. Most studies were at moderate risk of bias across the assessed domains with ROBINS-I tool. These findings suggest that QI techniques can significantly improve the quality and efficiency of care when supported by a strong safety culture. These results show how essential it is to bring together both practical processes and cultural changes to build reliable, lasting systems that truly meet the unique needs of PEDs.

Penciner A., et al. (2025) **'Evaluating the Canadian Triage and Acuity Scale as a Predictor of Emergency Nursing Workloads in an Emergency Department Ambulatory Care Setting.'** ***Journal of Emergency Nursing 51*****(6), 1167–1174.**

Introduction: Emergency departments face unpredictable workloads owing to diverse patient presentations, often leading to crowding and increased waiting times. Current staffing models in Canadian emergency departments lack evidence-based methods to predict emergency nursing needs, potentially affecting patient safety and outcomes. Other triage systems, such as the Emergency Severity Index and Manchester Triage System, have been shown to have some predictive impact on emergency nursing workload. This study explores the relationship between patient acuity, as determined by the Canadian Emergency Department Triage and Acuity Scale, and emergency nursing workload in an ambulatory care area of an emergency department.

Method(s): A prospective observational time-motion study was conducted in the

ambulatory care area of a tertiary care academic emergency department. Research assistants used a custom application to observe emergency nurses and track patient presentations and the time emergency nurses spent on predefined tasks related to patient care.
Result(s): Data from 40 shifts, encompassing 557 patient encounters and 719 patient-care tasks, were analyzed. Emergency nurses spent approximately 80% of their shift on patient-care activities and 20% on breaks. Regression analysis showed no significant correlation between the Canadian Emergency Department Triage and Acuity Scale and time spent on "Orders - Investigations" tasks. However, there was a mild yet significant correlation between the Canadian Emergency Department Triage and Acuity Scale and "Orders - Treatments" tasks (r = 0.17; P = .003) and care coordination (r = 0.21; P = .005), indicating that higher-acuity patients required more emergency nursing time for treatments and care coordination.
Discussion(s): The Canadian Emergency Department Triage and Acuity Scale triage level is a weak predictor of emergency nursing workload in an emergency department ambulatory care setting. Further research is required to fully understand the relationship between the Canadian Emergency Department Triage and Acuity Scale and emergency nursing workload in emergency department ambulatory and nonambulatory settings.

Ruksakulpiwat S., et al. (2025) **'Effectiveness of Discharge Planning Interventions for Stroke and Heart Conditions: A Systematic Review of Interventional Studies.'** ***Journal of Multidisciplinary Healthcare 18*, 7521–7537.**
Objective: To evaluate the effectiveness of discharge planning interventions in improving health outcomes among individuals with stroke and heart conditions, synthesizing evidence from randomized controlled trials and quasi-experimental studies.
Method(s): Following PRISMA guidelines, seven electronic databases (PubMed/MEDLINE, Scopus, ScienceDirect, CINAHL Plus with Full Text, Web of Science, Ovid, and ClinicalKey Nursing) were searched for studies published between 2019 and 2024. Eligible studies included adults with stroke or heart conditions who received discharge planning interventions, with outcomes compared to usual care or alternative interventions. Risk of bias was assessed using the Cochrane Risk of Bias 2 tool for randomized controlled trials and ROBINS-I for quasi-experimental studies. Data were extracted with a standardized chart and synthesized using a convergent integrated approach in accordance with the Joanna Briggs Institute methodology.
Result(s): Sixteen studies (11 randomized controlled trials and 5 quasi-experimental studies) met the inclusion criteria, representing diverse populations across 11 countries. Interventions included structured discharge programs, early supported discharge, interdisciplinary planning, family-based care, nurse-led eHealth

rehabilitation, and technology-enhanced approaches such as SMS, telephone, and interactive voice response systems. Six major outcome themes emerged: (1) healthcare utilization and cost outcomes, (2) patient activation and health behavior change, (3) psychological well-being, (4) functional recovery, (5) health-related quality of life, and (6) caregiver outcomes and support. Although mortality and long-term outcomes showed mixed results, most interventions demonstrated positive short-term effects across clinical, behavioral, and psychosocial domains. Conclusion(s): Discharge planning interventions improve transitional care and support recovery in stroke and heart disease populations, with particular benefits when multidisciplinary, nurse-led, or digitally supported. This review highlights the value of structured and innovative discharge planning models for clinical practice. Incorporating patient- and caregiver-centered strategies can reduce readmissions, strengthen adherence, and improve long-term health outcomes.

Shi M., et al. (2025) **'Looking for the Crystal Ball in Unscheduled Care: A Systematic Literature Review of the Forecasting Process.'** ***Health Care Management Science 28*(3), 548–564.**
The ability to accurately forecast unscheduled care needs is of paramount importance for decision making in healthcare operations, ensuring a continuous and high-quality level of care. In this work, we provide a literature review of 156 research articles of forecasting applications with special focus on care services that are not scheduled in advance such as emergency departments. Our paper presents two key contributions. Firstly, we propose a novel framework designed to characterize the application of forecasting process across various unplanned healthcare services. Our taxonomy facilitates the detection, decomposition, and categorization of forecasting processes, enhancing the understanding of their deployment in different unscheduled care settings. Secondly, we conduct a comprehensive literature review based on a systematic search, critically analyzing the state of forecasting research in unscheduled care services and identifying key research gaps. We explore forecasting problems in depth, examining their purpose, the various methodologies used, the rigor used in generating and evaluating forecasts, and the reproducibility of results, all within the context of the proposed framework. By consolidating the current state of the art, this paper provides valuable insights to both healthcare professionals and academics regarding the effective application of forecasting in unscheduled care services. Finally, it serves as a roadmap for identifying major research gaps and outlines an agenda for future investigations.

Umana E., et al. (2025) **'Application of Step-by-Step and Paediatric Emergency Care Applied Research Network (PECARN) Clinical Decision Aids in the Management of Young Febrile Infants in a UK Cohort.'** ***Emergency Medicine Journal*** **(pagination)**

Background Young febrile infants are at high risk of invasive bacterial infections (IBIs). Clinical Decision Aids (CDA) such as the Step-by-Step and Paediatric Emergency Care Applied Research Network (PECARN) use Procalcitonin (PCT), limiting their application in settings without PCT access. This study aimed to test the performance of these CDAs in a UK cohort. Methods This was a planned analysis of the Febrile Infant Diagnostic Assessment and Outcome Study, a large, prospective multicentre observational study conducted across over 30 sites in the UK. Febrile infants (0-90 days of age) with complete biomarker data, who also underwent PCT testing, were included. Two CDAs, PECARN and Step-by-Step, were applied to the cohort, using their recommended low-risk criteria. The diagnostic performance of the CDAs was analysed. Results Of the 1527 infants who completed biomarker testing in the main study, 442 had PCT testing and were included, 22 (5%) were diagnosed with an IBI. PECARN and Step-by-Step CDAs demonstrated sensitivities of 1.00 (95% CI: 0.85 to 1.00) and 0.96 (95% CI: 0.77 to 1.00) respectively. The PECARN CDA performed with a specificity of 0.14 (95% CI: 0.11 to 0.18) identifying 14% of the participants as low-risk and did not misclassify any infants. The Step-by-Step CDA performed with a specificity of 0.15 (95% CI: 0.12 to 0.19) identifying 14% of the participants as low-risk and misclassifying one participant with IBI as low-risk. Conclusion Both PECARN and Step-by-Step CDAs demonstrated high sensitivity for detecting IBI in our cohort. While specificity was relatively low, these tools could potentially identify a subset of low-risk infants suitable for less intensive management.

Zwaag S.M., et al. (2025) **'Can the Intensive Care Requirement Score Improve Triage at the Emergency Department for Acutely Intoxicated Patients?.'** ***Clinical Toxicology*** **(pagination), Date of Publication: 2025.**
Introduction: The intensive care requirement score was developed to predict the need for intensive care unit admission in acutely intoxicated patients. However, as the score was originally derived from a cohort already admitted to intensive care, its performance in emergency department populations remains uncertain. This study evaluates its performance in that setting.
Method(s): This retrospective study included patients who presented to the emergency department of the University Medical Centre Utrecht between 2015 and 2020. Eligibility criteria were similar to those used in the original derivation study, with modifications appropriate for the emergency department setting. Patients were excluded if they were younger than 14 years; had no toxic effects (e.g., ingestion of batteries, razor blades or spoons); or if intoxication was not the primary reason for presentation. The primary outcome of intensive care requirement was defined as receiving intensive treatment within 24 h of hospital admission or in-hospital death. Missing data were imputed, and model updating techniques, including calibration

intercept adjustment and recalibration, were applied to improve predictive accuracy. Model performance was assessed using discrimination, calibration, and decision curve analysis.
Result(s): The final cohort comprised 1,146 patients, of whom 21 (1.8%) required intensive care unit admission. Discrimination was excellent, with an area under the receiver operating characteristic curve of 0.91 (95% CI: 0.84 - 0.98). Prediction accuracy improved most following recalibration, yielding a calibration intercept of 0 (95% CI: -0.47 to 0.47) and a calibration slope of 1.04 (95% CI: 0.75 - 1.33). Clinical decisions based on the recalibrated model reduced unnecessary intensive care unit admissions by 15% at a 5% risk threshold.
Discussion(s): In this study, the recalibrated intensive care requirement score accurately predicted the need for intensive care unit admission in intoxicated patients presenting to the emergency department. However, large-scale, multi-centre studies are needed to validate the generalizability of these findings across diverse healthcare settings.
Conclusion(s): Following adjustment, the intensive care requirement score can assist in reducing unnecessary intensive care unit admissions among intoxicated patients presenting to the emergency department.

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