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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

Alenazi B., et al. (2026) **'What is the Evidence for Virtual Wards Or Hospital-at-Home Care Pathways for Exacerbations of Chronic Obstructive Pulmonary Disease? A Systematic Review and Meta-Analysis.'** ***BMJ Open Respiratory Research 13*****(1) (pagination), Date of Publication: 10 Ar 2026.**
OBJECTIVES: Given increasing interest in admission avoidance, we evaluated the evidence to support virtual wards (VW) and hospital at home (HaH) models of care during exacerbations of chronic obstructive pulmonary disease (ECOPD). DESIGN: A systematic review and meta-analysis. A comprehensive search of MEDLINE (1946 to March 2024), Embase (1974 to March 2024) and CENTRAL (searched 22 March 2024) was conducted. Risk of bias and a random effects meta-analysis were performed. POPULATION: Adults with an ECOPD presenting to the hospital or who require hospital-led care. INTERVENTIONS: VW: defined as assessments and interventions delivered remotely or HaH (defined as assessments and interventions delivered by healthcare professionals in patient's homes) care pathways, compared with hospital admission. PRIMARY AND SECONDARY OBJECTIVES: Safety (mortality rate of all causes, in-patient, 7 days and 30 days) and readmission rate in 7 and 30 days. Length of stay in hospital and changes in pulmonary function tests. RESULT(S): One study assessed VWs (reported in two publications) and 10 assessed HaH. There were no changes in survival or short-term readmission rates attributable to the interventions and no evidence that VW or HaH care pathways

reduced the total time a patient spent under hospital-led care, whether at home or in the hospital.
CONCLUSION(S): More evidence is needed to support the widespread roll-out of HaH and especially VW pathways for ECOPD. PROSPERO REGISTRATION NUMBER: https://www.crd.york.ac.uk/PROSPERO/view/CRD42024517565.

AlimMarvasti A., et al. (2026) **'Prospective Evaluation of the Neurology Same Day Emergency Care (NeuroSDEC) Model in Secondary Care: Data from 931 Patients Over the First 12 Months.'** ***BMJ Neurology Open* 8(1) (pagination), Date of Publication: 01 Jan 2026.**
Background: Acute neurological presentations are common in emergency settings. These are managed with a high rate of misdiagnosis in about one-third of cases. This is the first description of a consultant-led model within an existing same day emergency care service.
Method(s): As part of service evaluations, we prospectively collected data from 931 acute neurological presentations, over the first year since establishing the neurology same day emergency care (NeuroSDEC) embedded within the emergency department (ED) at University College London Hospital. The service was evaluated in terms of diagnostic accuracy, cost-saving and efficiency.
Result(s): 60.8% were female, mostly between 25 years and 40 years old. Most referrals were from ED, with the most common presenting symptom of headaches (343 cases, 36.8%).NeuroSDEC reduced lack of diagnosis in over 27% of cases, prevented admissions in over one-third of cases seen, saw same-day cases on average within 1 hour, reduced intended outpatient neurology referrals from 36.4% to 4.8%, cut stroke and transient ischaemic attack clinic referrals in half, completed the care of more than a third of cases (36.1%) exclusively in NeuroSDEC, aborted unnecessary acute brain imaging in 9.7% and cut intended lumbar punctures by 40% (49 reduced to 29).
Conclusion(s): Acute neurology presentations challenge acute physicians in distinguishing benign from serious neurological conditions in real time. Our NeuroSDEC model provides a successful example of a transformative healthcare model, safely reducing unnecessary investigations, outpatient referrals, admissions and misdiagnosis rates. A conservative estimate for potential cost savings was 660 000 in admission prevention alone, more than the excess staff cost of 363 000.

AstasioPicado A., et al. (2026) **'Association between Rurality and Mortality: Observational Study of Spanish and United States Prehospital Emergency Care Cohorts.'** ***Healthcare (Switzerland) 14*****(7) (pagination), Article Number: 946. Date of Publication: 01 Ar 2026.**

Background/Objectives: Differences between rural and urban settings, as well as between emergency medical service (EMS) systems, may influence short-term mortality among patients attended in the prehospital setting. The aim of this study was to determine the associations of rurality and the US and Spanish EMS health systems with patient mortality.
Method(s): This was a multicenter, EMS-based, observational study involving a prospective dataset, the Salud de Castilla y Leon dataset (SACYL) from Spain, and a retrospective dataset, the National Emergency Medical Services Information System (NEMSIS) from the US. All consecutive EMS activations of adult patients (>=18 years) requiring high-priority transport to emergency departments were included in the analysis. The collected variables included demographic characteristics, EMS transport characteristics, case characteristics, and rural or urban origin. The primary outcome was 2-day, short-term mortality.
Result(s): A total of 54,981 EMS activations were considered from both datasets. The mortality rate was 8.47% for rural areas and 11.8% for urban areas ($p < 0.001$). Multivariable analyses showed that mortality patterns differed according to geographic setting and EMS system. Male sex and the use of advanced life support were associated with higher odds of mortality in several models, while prehospital time intervals and call characteristics showed context- and system-dependent associations, including protective effects in specific subgroups.
Conclusion(s): Short-term mortality differed between rural and urban settings, with heterogeneous patterns across EMS systems. These findings highlight the importance of considering both geographic context and system-level organizational characteristics when evaluating prehospital care and mortality outcomes.

Bellini T., et al. (2026) **'Impact of Rapid Viral Testing on Patient Flow and Length of Stay in a Tertiary Pediatric Emergency Department.'** ***Healthcare (Switzerland) 14*****(7) (pagination), Article Number: 925. Date of Publication: 01 Ar 2026.**

Background. Overcrowding in emergency departments (EDs), particularly pediatric emergency departments (PEDs), remains a significant challenge that affects patient outcomes and the efficiency of healthcare. Rapid diagnostic tests (RDTs) for respiratory viruses could be a promising tool for improving patient management by enabling prompt etiological diagnoses. This study investigated whether positive RDT results for influenza or adenovirus were associated with differences in length of stay

(LOS) in a tertiary PED during epidemic seasons. Methods. A retrospective cohort study was conducted at IRCCS Istituto Giannina Gaslini, Genoa, Italy, over two epidemic seasons (December-February, 2023-2025). All consecutive pediatric patients presenting with fever and respiratory symptoms who underwent rapid diagnostic testing for influenza and/or adenovirus during two epidemic seasons were included. LOS was assessed as the time from triage to discharge (TTD) and from physician assignment to discharge (ATD). Patients were stratified by positive versus negative RDT results. Analyses between groups used the Mann-Whitney U-test for continuous variables and chi-square or Fisher's exact test for categorical variables. A two-tailed p-value < 0.05 was considered significant. Results. Of the 1238 patients analyzed, the median age was 3.3 years (IQR 1.4-7.2), with male predominance (58.1%). A total of 330 patients (26.6%) tested positive. Compared with negative results, positive RDTs were associated with shorter median TTD (217.0 vs. 239.0 min, p < 0.001) and ATD (66.0 vs. 148.5 min, p < 0.001), which was consistent in both the influenza and adenovirus subgroups. No significant difference in 72 h readmission rates was observed between groups. Conclusions. Among children tested with RDTs for influenza and adenovirus, positive results were associated with reduced PED LOS without increasing early return visits. While these findings suggest a potential role in supporting patient flow, conclusions regarding the broader impact on PED overcrowding should be drawn with caution. Further prospective studies, including non-tested controls and additional viral targets, are required.

Bradley F., et al. (2026) **'Factors Affecting Implementation of Hospital Inpatient-Level Care at Home: A Qualitative Study of Virtual Wards in North West England.'** ***BMJ Open 16*****(4), e111868.**
OBJECTIVES: To identify key factors influencing the implementation of technology-enabled virtual wards (VWs), also known as hospital at home, drawing on the qualitative accounts of stakeholders involved in implementation, using the updated Consolidated Framework for Implementation Research (CFIR) as a guiding analytical framework. DESIGN: Qualitative semi-structured interviews with implementation leads. All interviews were conducted online, using MS Teams or Zoom, between January-June 2024, and audio-recorded with consent. Audio-recordings were transcribed, anonymised and exported to NVivo V.12 Pro software for data management. The updated CFIR was used to guide thematic analysis of interview data. SETTING: Adult VW services in one regional health and social care system in North West England, UK. PARTICIPANTS: Service implementation leads from 11 hospital sites providing adult VW services. Job titles and roles varied across sites and included both operational and clinical service leads.
RESULT(S): 20 interviews were conducted with 22 participants. Four implementation themes were identified: (1) complexity and adaptability: the ability to adapt the service to local conditions was valued by leads, but also contributed to wide variation

in operational, clinical, workforce and digital components of VW models; (2) resource and infrastructure: workforce capacity was identified as a key implementation challenge along with information technology system capability and interoperability; (3) performance demands: leads were concerned that an excessive focus on bed numbers and occupancy levels, without accounting for patient acuity, could negatively affect implementation, straining the service and staff capacity; and (4) readiness for change: organisational and professional readiness for change was considered crucial for increasing referrals and enabling successful implementation, yet leads reported that the level of behavioural and cultural change required had been underestimated.
CONCLUSION(S): Implementation of a national VWs programme has resulted in wide service variation in one UK region, which raises questions about service equity and poses challenges for wider programme evaluation. Despite this variation, common factors found to help or hinder implementation have been identified. This study provides greater understanding of the factors that influence the implementation of VW services and outlines actionable insights to help refine VW strategies. These insights can support future planning and sustainability of technology-enabled inpatient-level care at home more widely.

Brown A.E., et al. (2026) **'Evaluation of an Innovative "Emergency Department Surge" Program for the Care and Treatment of Patients with Low-Acuity Conditions.'** ***Healthcare 14*****(1) (pagination), Article Number: 100779. Date of Publication: 01 Jun 2026.**
Background Emergency Department (ED) crowding negatively impacts healthcare. Numerous strategies have been created to improve treatment of low-acuity conditions to reduce ED crowding and better utilize ED resources. Methods We evaluated whether our novel "ED Surge" program within our institution's Care Transition Clinic (CTC), which triages patients with lower-acuity conditions from the ED to our same-day on-site ambulatory CTC, impacted future ED and hospital utilization. Demographics, visit characteristics, and clinical outcomes were evaluated. Bivariate and multivariate analyses assessed associations between patient, visit, and outcome characteristics. Significance was defined as $p < 0.05$. Results The ED Surge program saw 727 unique patients and 762 scheduled visits with 76% completion across 31 months of operation. Patients were significantly younger ($p < 0.01$) and insured with Medicaid ($p < 0.01$) than the general ED population. This population also experienced a significant decrease in 30-day post-appointment ED utilization (0.08 post-versus 0.2 pre-mean visits, $p = 0.01$) than those who did not complete an appointment. We also identified several diagnoses that may be better served in the ED as opposed to the ambulatory setting. Conclusions Innovative clinics such as our "ED Surge" program held within ambulatory care sites such as

the CTC can be a useful tool to impact future ED utilization of patients with low-acuity conditions. Care should be taken to design the clinic to an ED's specific population needs (such as underserved patient groups) and refine it according to how the clinic's patient outcomes develop to optimize patient care and safety.

Caspers C., et al. (2026) **'State of the Art: Observation Units in the Emergency Department, an Interim Practice Update and Policy Review.'** ***JACEP Open 7*****(3) (pagination), Article Number: 100354. Date of Publication: 01 Jun 2026.**
Emergency department observation units (EDOUs) provide an essential model of care to address emergency department crowding, preventable hospital admissions, and rising health-care costs through protocol-driven, short-term management of patients requiring further evaluation or treatment. This interim update to the 2013 American College of Emergency Physicians Policy Resource and Education Paper reviews the current state of observation medicine, highlighting structural and staffing principles, professional billing models, and evolving applications across diverse clinical conditions, including geriatrics, toxicology, psychiatry, oncology, and chest pain. Recent developments in telehealth integration, pandemic surge response, and novel clinical pathways underscore the adaptability and high-value role of observation units within modern emergency care. By consolidating evidence-based practices and policy considerations, this paper emphasizes the continued importance of EDOUs in improving efficiency, outcomes, and cost-effectiveness while outlining key directions for future research and implementation.

Chang S.J., et al. (2026) **'From Hospital to Home: National Insights from Taiwan's Hospital at Home Program.'** ***International Journal of Infectious Diseases 167*****(pagination), Article Number: 108539. Date of Publication: 01 Jun 2026.**
Objectives Taiwan's rapidly aging population has increased demand for acute care and heightened the risk of hospital-associated infections. This study evaluated the early nationwide implementation of the Hospital-at-Home (HAH) program launched by the National Health Insurance Administration to provide hospital-level acute care in patients' homes. Methods We conducted a descriptive analysis of 2160 HAH episodes discharged between July 2023 and March 2024 across 184 participating institutions. De-identified administrative data were summarized to describe patient demographics, primary diagnoses, care duration, clinical outcomes, service utilization, and safety indicators. Results The mean patient age was 80 years, 53% were female, and 76% were dependent in daily activities. The leading diagnoses were urinary tract infection, pneumonia, and soft tissue infection. The mean HAH care duration was 6.7 days, compared with approximately 12 days for conventional hospitalization, and average expenditure was about half of inpatient cost. The treatment completion rate was 90%, with in-home mortality of 2% and 30-day

mortality of 6%. Emergency visits and rehospitalizations within 14 days occurred in fewer than 5% of cases. Telemedicine, Internet of Things monitoring, and bedside diagnostics were widely integrated. Conclusion Nationwide HAH implementation in Taiwan demonstrated reduced hospital stay and cost while maintaining favorable safety and quality outcomes. The model provides a scalable, infection-conscious approach to strengthening acute care capacity in aging societies.

Embrett M., et al. (2026) **'Implementing Virtual Urgent Care Services in Emergency Departments: A Multi-Site Focus Group Study of Adaptation and Sustainability.'** ***Canadian Journal of Emergency Medicine*** **(pagination), Date of Publication: 2026.**
Objectives: The Virtual Urgent Nova Scotia (VUNS) program was introduced to address emergency department (ED) overcrowding and improve access to urgent care through virtual health services. This study captures the perspectives, sentiment, and attitudes toward the implementation of VUNS from rural ED providers.
Method(s): VUNS staff from seven different sites across the province of Nova Scotia were invited to focus groups to explore the implementation of VUNS in their local context. Focus groups were facilitated by members of the Implementation Science Team at Nova Scotia Health from November 2024 to January 2025. Focus group transcripts were coded deductively, and results were presented in a narrative and descriptive fashion.
Result(s): Key findings highlight recurrent issues, including staff confusion over inclusion and exclusion criteria, inconsistent VUNS physician decision-making, workflow disruptions influenced by staffing shortages, and patient bounce-backs from the VUNS triage nurses or physician. While initial implementation demonstrated potential for reducing lower acuity patients' wait times and enhancing care delivery, operational challenges limited its effectiveness for some sites. Despite these barriers, success stories from specific sites emphasize the program's value, particularly in underserved rural areas. Recommendations for improvement focus on stabilizing criteria, enhancing staff training, optimizing workflows, and fostering consistent communication between stakeholders.
Conclusion(s): Findings indicate that VUNS should be scaled cautiously within current sites, addressing identified challenges before spreading to new locations. Lessons learned stress the importance of staff engagement, clear workflows, and patient education. These findings provide a roadmap for refining VUNS operations and contribute to the broader discourse on scaling digital healthcare innovations and streamlining patient flow in EDs.

Gao S., et al. (2026) **'Accuracy of the Large Language Model ChatGPT in Adult Emergency Department Triage: A Systematic Review and Meta-Analysis.'** ***BMC Emergency Medicine 26*****(1) (pagination), Date of Publication: 16 Mar 2026.**

Gerhardinger K., et al. (2026) 'The Potential Role of Large Language Models in Assisting Patients and Guiding Emergency Care Visits.' ***Journal of Clinical Medicine 15*(8) (pagination), Article Number: 3170. Date of Publication: 01 Ar 2026.**

Background/Objectives: Overcrowding in emergency departments (EDs) remains a critical challenge in modern healthcare systems, driven in part by patient uncertainty regarding symptom urgency and a lack of accessible medical guidance. Recent advances in artificial intelligence, particularly large language models (LLMs), present a novel opportunity to support patient navigation and relieve pressure on ED infrastructures.
Method(s): A total of 238 unique patient questions were identified through a structured web search. Following deduplication and thematic clustering, 15 representative questions were selected. Each question was submitted to the three LLMs-ChatGPT (v3.5), DeepSeek, and Gemini-using a standardized prompt. Responses were assessed by clinical experts (N = 8) who were blinded to the model source. Reviewers selected the best overall response per question, as well as the individual responses of the three LLMs for each respective question.
Result(s): ChatGPT was selected as the best-performing model in 60% of cases, with DeepSeek and Gemini selected in 23% and 17%, respectively. ChatGPT responses also achieved the highest proportion of "excellent" quality ratings and the lowest proportion of "unsatisfactory" outputs. Across all models, clarity was the most positively rated domain (79% agreement), followed by empathy (72%), length/detail appropriateness (71%), and completeness (65%). Over two-thirds of raters expressed willingness to integrate LLM-based tools into clinical practice for patient education and pre-triage counseling.
Conclusion(s): Large language models demonstrate promising capabilities in responding to emergency care-related patient queries. Their ability to deliver medically sound and communicatively effective answers positions them as potential digital adjuncts in the management of low-acuity ED presentations and prehospital triage.

Guo P., et al. (2026) 'Ascertaining Cause-Specific Emergency Department Demand using Forecast Combinations.' ***BMC Emergency Medicine 26*(1) (pagination), Article Number: 83. Date of Publication: 01 Dec 2026.**

Background: Emergency department (ED) overcrowding is a recurrent public health concern, which may be alleviated by forecasting ED visits. Numerous ED forecasting models exist, making it challenging for decision makers to select appropriate forecasts and plan under model and forecast uncertainty. It remains unclear whether incorporating environmental covariates as model predictors or aggregating cause-specific ED visit forecasts to obtain total ED visit forecasts can each contribute to improving forecast accuracy.

Method(s): To address this gap, we developed a framework to generate accurate probabilistic forecasts using forecast combination schemes. We developed probabilistic forecast combinations schemes which can directly combine predictive distributions/quantiles in a linear/non-linear fashion, using static/dynamic weighting schemes. These schemes were tested in probabilistically forecasting cause-specific ED visits in Singapore, an equatorial city state. We incorporated a high-dimensional set of predictors to further augment model performance. We documented the forecast performance of all forecasting models across 1- to 12-week ahead horizons.
Result(s): Our study showed that aggregating cause-specific forecasts to provide all-cause ED visit forecasts can enhance overall ED visit forecasting performance-particularly for KNN, XGBoost, and Elastic Net. Forecast combinations, in particular, the linear opinion pool can lead to excellent and stable forecasts over all individual forecasts in 164 out of the 180 cause-horizon combinations examined. Within the considered forecast horizons, longer horizons led to more scenarios where forecast combinations outperformed individual models significantly ($p < 0.05$). Forecast combinations exhibited stable performance across forecast horizons, whereas individual models showed greater variability-some performed well at shorter horizons but deteriorated at longer ones, and vice versa. We also found that quantile forecast combinations can generate confident forecasts while maintaining good accuracy.
Conclusion(s): Forecasting cause-specific ED visits can provide fine-scale forward guidance on resource optimization and ED crowding preparedness. Probabilistic forecast combinations can characterize the uncertainty of forecasts and hedge against model selection uncertainty in a robust manner. However, performance during COVID-19 was not assessed, which may limit generalizability under structural breaks.

Hill C.E., et al. (2026) **'Virtual Vs in-Person Neurologic Ambulatory Care: A Case-Control Study of Subsequent Health Care Utilization.'** ***Neurology 106*(10), e214989.**
BACKGROUND AND OBJECTIVES: Implementation of telemedicine expanded options for outpatient neurology care. It remains uncertain which new neurology patients can be appropriately evaluated virtually. We compared subsequent health care utilization after virtual vs in-person new patient neurology visits across 3 academic medical centers.
METHOD(S): We conducted a retrospective multicenter cohort study of adults with a new outpatient neurology visit from September 2020 through December 2021 using the Vizient Clinical Data Base and Clinical Practice Solutions Center databases. Virtual and in-person patients were matched 1:1 using propensity scores incorporating demographics, clinical characteristics, time period, and previous health care utilization. Outcomes were analyzed overall and stratified by neurologic chief complaint category and institution. We compared rates of subsequent neurologic

clinic follow-up, emergency department (ED) visits, and hospitalizations after virtual and in-person encounters. Testing and all-cause ED visits/hospitalizations were also assessed.
RESULT(S): We identified 10,428 virtual and 36,767 in-person neurology new outpatient visits. After propensity score matching, 8,202 virtual visits were matched to 8,202 in-person visits. Neurology follow-up within 90 days did not differ between virtual and in-person visits (24.6% vs 23.7%, p = 0.18). Thirty-day neurology clinic follow-up was slightly lower after virtual visits, whereas follow-up at 6 months and 1 year was similar between groups. Neurologic ED visits and hospitalizations within 90 days were similar (0.9% vs 0.8%, p = 0.23 and 1.8% vs 1.7%, p = 0.47, respectively). All-cause ED visits and hospitalizations within 90 days were also comparable (1.8% vs 1.7%, p = 0.59 and 2.2% vs 1.8%, p = 0.13, respectively). Analyses by chief complaint found that 90-day follow-up was higher after in-person visits for dementia, whereas 30- and 90-day follow-up was higher after virtual visits for Parkinson disease and multiple sclerosis, and 90-day follow-up was higher after virtual visits for headache. Testing was more frequent after in-person visits for certain chief complaints.
DISCUSSION(S): In this propensity score-matched multicenter cohort, new neurology patients seen virtually had similar downstream utilization as those seen in-person, including comparable 90-day follow-up and similar neurologic and all-cause ED visits and hospitalizations. Although follow-up varied modestly by chief complaint and testing was more frequent after some in-person visits, no major differences emerged overall.

Holzinger F., et al. (2026) **'Effectiveness and Safety of Emergency Department-Based Streaming Interventions for Low-Acuity Utilizers-Systematic Review and Meta-Analysis.'** ***BMC Emergency Medicine 26*****(1) (pagination), Article Number: 58. Date of Publication: 01 Dec 2026.**
Background Emergency department (ED) crowding is a global challenge, presumably aggravated by low-acuity utilization. Various patient streaming interventions have been implemented in EDs to reduce potentially unnecessary utilization and improve care coordination and patient throughput. This systematic review examined the effectiveness and safety of ED-based streaming for low-acuity patients. Methods A search of MEDLINE, EMBASE, CINAHL, and Cochrane Library databases was conducted up to December 2, 2025. Screening and data extraction were performed in duplicate. RCTs, non-randomized controlled trials, interrupted time series, and before-after studies on general practitioner (GP) streaming, ED streaming, and urgent care (UC) streaming for low-acuity utilizers were eligible. We assessed outcomes related to care effectiveness, patient safety, and cost-effectiveness. Random-effects meta-analyses were performed. Risk of bias was assessed by the Effective Public Health Practice Project tool. Results We included 137 publications reporting on 119 research projects. Meta-analyses showed higher

proportions of cases managed in alternative tracks for GP streaming (0.32; CI 0.17;0.51) compared to ED streaming (0.25; CI 0.15;0.37). Both GP and ED streaming demonstrated reductions in length of stay, particularly for low-acuity patients (GP: SMD - 0.85; CI-1.37;-0.33; ED: SMD - 0.39; CI-0.56;-0.22). Safety outcomes, including leaving without being seen and unplanned ED reattendances, generally improved or were unchanged. The impact on ED utilization and cost-effectiveness remained inconclusive due to inconsistent evidence. There was high variability across outcomes, likely due to diverse context factors and multifaceted interventions. Conclusions This review provides a comprehensive synthesis of various ED-based streaming interventions for low-acuity patients, with effect estimation by meta-analyses. Results suggest that GP and ED streaming improve care without compromising safety, with indications of a greater potential for alternative care with GP streaming. The predominance of observational studies with potential biases and unexplained heterogeneity, however, results in very low overall certainty of the evidence. Registration PROSPERO CRD42022355935.

Lee S., et al. (2026) **'Development of BERT-Based Large Language Models for Emergency Department Triage using Real-World Conversations.'** ***Journal of the American Medical Informatics Association 33*(4), 847–854.**
Objectives: Accurate triage in emergency departments (ED) is critical for appropriate resource allocation. While artificial intelligence (AI) has been explored for triage, prior models relied on summarized clinical scenarios. We aimed to develop and evaluate large language models (LLMs) trained on real-world clinical conversations to classify patient urgency.
Material(s) and Method(s): We used a nationally curated dataset of anonymized triage-level conversations from 3 tertiary Korean hospitals. Two BERT-based models were developed to classify urgency per the Korean Triage and Acuity Scale (KTAS) into urgent (KTAS 3) or non-urgent (KTAS 4-5). One model tokenized the entire conversation, while the other applied a hierarchical structure with sentence-level tokenization and speaker-role embeddings. Performance metrics included accuracy, precision, recall, and F1-score. We compared our models against ChatGPT GPT-4o and ClinicalBERT, and assessed explainability using SHapley Additive exPlanations (SHAP).
Result(s): A total of 5244 clinical conversations, 1057 triage-level dialogues were used, with 950 for training and 107 for testing. Our model with hierarchical structure achieved accuracies of 75.94%, significantly outperforming ChatGPT (56.68%) or fine-tuned ClinicalBERT (69.42%). For urgent cases, the best model achieved a recall of 0.9610, outperforming ChatGPT (0.5352). SHapley Additive exPlanations analysis confirmed that our model focused on clinically relevant cues aligned with KTAS criteria.
Conclusion(s): BERT-based LLMs trained on real-world ED conversations

significantly outperform general-purpose models like ChatGPT in triage accuracy. This approach demonstrates the potential for enhancing clinical decision support with interpretable and efficient AI.

Lee S., et al. (2026) 'Proactive Forecasting of Emergency Department Crowding through Explainable Machine Learning and Temporal Feature Dynamics.' *Hong Kong Journal of Emergency Medicine 33*(2) (pagination), Article Number: e70093. Date of Publication: 01 Ar 2026.

Background: Emergency department (ED) crowding is a major global challenge that adversely affects patient safety and care quality. Conventional NEDOCS-based approaches are largely reactive and provide limited support for proactive decision-making.
Method(s): We conducted a retrospective observational study using ED operational and clinical data from the Clinical Data Warehouse of Samsung Medical Center (2017-2025). A total of 292,033 ED visits were included. Time-series datasets with 19 variables were constructed across five forecasting horizons (t + 1 to t + 5). XGBoost-based models were developed using two NEDOCS thresholds (>=141 and >= 101) with strict temporal validation. Model performance was evaluated using sensitivity, F1-score, balanced accuracy, and AUC-ROC. Model interpretability was assessed using SHAP.
Result(s): The nedocs1 model showed stable but conservative prediction behavior with low sensitivity (0.14-0.29). In contrast, the nedocs2 model demonstrated improved sensitivity (0.39-0.48) and F1-score, particularly at t + 3. SHAP analysis revealed that waiting time and patient volume were key drivers, with increased contributions from hospitalization and acuity-related variables at longer horizons.
Conclusion(s): Explainable time-series machine learning enables early prediction of ED crowding with interpretable insights. The nedocs2 model showed superior performance for proactive operational alerting and may support timely resource allocation in emergency care settings.

Li K.Y., et al. (2026) 'Acute Care use and Mortality by Tele-Emergency Care use, Modality, and Clinician Type.' *JAMA Network Open 9*(4) (pagination), Article Number: e265406. Date of Publication: 2026.

Importance While tele-emergency care pilots have demonstrated potential utility as a

model for assessing patients with acute concerns without requiring in-person emergency department evaluation, large-scale evaluations are lacking, and important questions regarding implementation remain. Objective To examine associations between tele-emergency care receipt, modality, and clinician type, and subsequent outcomes. Design, Setting, and Participants This cohort study included veterans who called the nurse advice line from January 2018 through April 2024 during business hours and were triaged as requiring urgent or emergent evaluation in a national, multicenter setting within the Veterans Health Administration. Exposures Tele-emergency care vs usual care, tele-emergency care modality (phone vs video), and tele-emergency care clinician type (physician vs advanced practice clinician). Main Outcomes and Measures The primary outcome was emergency department visit within 7 days, and the secondary outcomes were hospitalization within 7 days and 30-day mortality. Propensity score weighting was applied, and heterogeneous difference-in-differences models were estimated. Results The study included 2 511 932 nurse advice line calls from 719 028 veterans (mean [SD] age, 62.3 [16.0] years; 627 515 [87.3%] male). After tele-emergency care implementation, 99 994 of eligible nurse calls (17.4%) resulted in a tele-emergency care visit. Tele-emergency care receipt was associated with a lower probability of emergency department visits within 7 days compared with propensity-weighted calls that did not (28.5% vs 45.0%; average treatment effect, -16.5%; 95% CI, -18.6% to -14.4%), with similar associations for hospitalization and no difference in mortality. The average treatment effect was greater for calls triaged as emergent (-22.0%; 95% CI, -24.1% to -19.9%) vs urgent (-5.6%; 95% CI, -8.4% to -2.9%). Minimal differences were observed by tele-emergency care modality or clinician type. At the facility level, tele-emergency care implementation was associated with a small reduction in emergency department visits for emergent calls (average treatment effect, -2.6%; 95% CI, -5.0% to -0.2%). Conclusions and Relevance In this cohort study, tele-emergency care receipt was associated with lower emergency department use, particularly for higher-acuity calls, regardless of modality or clinician type, though facility-level differences were limited. Broader implementation of tele-emergency care could be a solution for health systems seeking to mitigate emergency department crowding while addressing patients' acute care needs.

MartinhoDias D., et al. (2026) **'Identifying Ambulatory Care Sensitive Conditions: A Systematic Review of Studies Defining Sets of Diseases with Avoidable Hospitalisations in European Countries.'** ***BMJ Open 16*****(3) (pagination), Date of Publication: 01 Mar 2026.**
BackgroundAmbulatory care sensitive conditions (ACSC) are health conditions that can be adequately managed in the outpatient setting. Timely treatment and interventions may avoid the need for hospitalisation and emergency department visits.ObjectivesWe aimed to identify ACSC lists developed for European

populations.DesignSystematic review. We included primary studies that aimed to develop a list of ACSC for the general population or subpopulations within European countries. Studies reporting a formal methodology were eligible. Systematic or narrative reviews, and protocols were excluded.Data sourcesPubMed, Web of Science and Scopus were searched on 21 October 2025. Data search was complemented with the search for 'ambulatory OR preventable' in the websites of the WHO Regional Office for Europe, OECD (Organisation for Economic Co-operation and Development) and NHSOF (British National Health Service Outcomes Framework).Data extraction and synthesisTwo reviewers independently collected data on type of population, geographical coverage, bibliographic support, use of qualitative or quantitative methods, ontology system, as well as the identified conditions per list. Data on methodological characteristics was qualitatively synthesised. Conditions identified as ACSC were aggregated under International Classification of Diseases 10th Revision (ICD-10). Each primary study with Delphi component was assessed using the Diamond et al risk of bias tool. Studies with a qualitative component were assessed using Joanna Briggs Institute (JBI) checklist for qualitative research.ResultsA total of 12 articles were included. Six European countries have lists developed for general populations. A total of 263 unique ACSC have been defined (932 codes) for the general populations. For the paediatric age, 28 conditions (70 codes) were identified, while 37 diagnoses (58 codes) were listed for the nursing home population. Most commonly identified ACSCs were infection-related, chronic cardiovascular or respiratory diseases. Delphi methods were employed in eight studies, with a median of 3 (2-3.25) rounds with a median of 36.5 (32.8-42.5) panellists. Risk of bias assessment yielded a quality score of 2 (out of 4) for six studies and of 3 for the remaining two studies. Remaining studies were assessed with JBI yielding a median 6.5 (6.0-7.0) points (out of 10 possible points). The most used code system was ICD-10. Use of nationwide real-world databases was limited to six studies. No identified ACSC lists explicitly fulfilled all criteria defined by Solberg and Weissman for ACSC establishment.ConclusionsThe evidence on ambulatory care sensitive conditions is heterogeneous and derives from different methodologies and covers six European countries. Most lists are diagnosis-based, aim at national, general populations and include Delphi components to define ACSC. We speculate that the future inclusion of primary care data could enhance ACSC evidence.PROSPERO registration numberCRD42022349270.

Martins K., et al. (2026) **'Demonstrating Return on Investment for a Nurse-Led Discharge Lounge: A Strategy for Improving Hospital Throughput.'** ***Nursing Administration Quarterly 50*(2), 126–132.**

BACKGROUND: Discharge delays and emergency department (ED) overcrowding are persistent challenges that negatively affect hospital throughput and patient outcomes. Although discharge lounges (DC Lounges) offer a potential solution, there is limited peer-reviewed literature evaluating their financial return on investment (ROI).
OBJECTIVE(S): This study examined the operational and fiscal impact of a nurse-led DC Lounge in a large academic medical center, with a focus on cost-savings-based ROI.
METHOD(S): A quantitative, descriptive design was used to evaluate the first year of DC Lounge implementation at a 700+ bed academic medical center. Data collected included discharge timing, DC Lounge utilization, inpatient bed days saved, and ED hold hours. Financial analysis calculated ROI based solely on cost avoidance.
RESULT(S): The DC Lounge reached its financial break-even point in November 2024, saving 88.9 inpatient bed days and achieving an ROI of 1.16. Utilization increased 400% over the first year, while average patient time in the DC Lounge decreased by 19%. Hospital discharges before 2 PM improved.
CONCLUSION(S): This study is among the first to quantify ROI for a DC Lounge, demonstrating its operational and financial viability. Nurse-led coordination and interdisciplinary collaboration were critical to its success.

Moradi M., et al. (2026) **'30-Day Hospital Admission among Older Adults Initially Managed at Home by a Mobile Emergency Unit: A Retrospective Cohort Study.'** ***BMC Emergency Medicine 26*(1) (pagination), Article Number: 111. Date of Publication: 01 Dec 2026.**

Background: In recent years, Denmark has introduced mobile emergency unit (MEU) to provide patients with home-based evaluation and treatment by emergency medicine physicians. The aim is to avoid unnecessary hospital admissions and to reduce overcrowding in emergency departments. However, it is unknown which demographic, clinical, and paraclinical characteristics of patients at the index MEU assessment are related to subsequent hospital admission. Therefore, we aimed to describe these baseline characteristics and to examine their association with 30-day hospital admission.
Method(s): In this retrospective, single-centre cohort study at Esbjerg Hospital (Region of Southern Denmark), we screened 1656 MEU contacts (from 1 January to 31 December 2024) and included adults aged >= 65 years, who were not directly admitted/conveyed to hospital at the index visit (i.e. initially managed at home). These patients were potential candidates for hospital admission, and the emergency physician made an on-scene decision regarding admission. Data were analysed

using multivariable logistic regression.
Result(s): We included 357 MEU contacts, with a median (interquartile range) age of 83.5 (77.6-89.2) years. 140 (39.2%) of these contacts were admitted to hospital within 30 days. A higher proportion of the admitted patients had a pre-existing do-not-attempt-resuscitation (DNAR) order compared with the non-admitted patients (85.0% vs 66.4%; p < 0.001) and lived at home (57.8% vs. 47.4%; p = 0.055). Chronic pulmonary disease was more common among the admitted patients (31.4% vs 19.3%; p = 0.009), whereas dementia was less frequent (18.6% vs 28.1%; p = 0.042). Both a pre-existing DNAR order (odds ratio [OR] 3.83, 95% confidence interval [CI] 2.05-7.16) and home (vs nursing home) residence (OR 1.76, 95% CI 1.03-2.98) were significantly associated with hospital admission in the adjusted model.
Conclusion(s): Among older adults assessed at home by MEU physicians, a pre-existing DNAR order and home (vs nursing home) residence were independently associated with 30-day hospital admission. These findings may inform triage and follow-up planning. However, prospective studies are required to establish causal links.

Ostervang C., et al. (2026) **'Lessons Learnt from Patient and Public Involvement in Emergency Care Research: Emerging Insights from Three Research Projects in Denmark, the Netherlands and Australia.'** ***International Emergency Nursing 84*, 101738.**

Peckham-Cooper, et al. (2026) **'Surgery without Walls: Can Virtual Wards Reshape the Future of Acute Surgical Care?' *Bulletin of the Royal College of Surgeons of England 108*(3)**

Perez B.P., et al. (2026) **'Machine Learning to Predict Hospital Admission at Triage in Paediatric Emergency Care: A Meta-Analysis.'** ***European Journal of Pediatrics 185*(4) (pagination), Article Number: 229. Date of Publication: 01 Ar 2026.**
Machine learning (ML) models have shown promise improving outcome prediction and early risk stratification in paediatric emergency department (ED) triage. This review aims to evaluate the diagnostic performance of ML in predicting hospital admissions from the data collected at triage in paediatric emergency departments (EDs). Searches were conducted in PubMed, Ovid, Scopus, and Web of Science. Two reviewers screened 264 abstracts after duplicate removal, excluding 239 not meeting inclusion criteria. Of the 25 full-texts assessed, 15 were excluded for outcome mismatch, leaving 10 for data extraction. Data were thereafter extracted including population characteristics, ML methods, and diagnostic metrics: area under the curve (AUC), sensitivity, and specificity. Most studies used retrospective cohorts

from electronic records or national databases. Sample sizes ranged from 9,069 to over 2.9 million. AUCs ranged from 0.78 to 0.97, with top-performing models (AUC >= 0.94) using random forest algorithms and variables like age, heart rate, triage level. Meta-analysis of six studies showed pooled sensitivity of 0.78 and specificity of 0.76 (AUC = 0.84), though heterogeneity was high (I^2 = 100%).
Conclusion(s): ML models have potential for paediatric ED triage. Standardized methods, explainable AI, and prospective validation are essential for clinical use. (Table presented.)

Risor B.W., et al. (2026) **'Developing Hospital at Home Tariffs in Denmark: A Time-Driven Activity-Based Microcosting Approach within a Randomised Controlled Trial.'** ***BMJ Open* *16*(4), e113738.**
OBJECTIVES: To develop an empirically grounded, activity-based tariff framework for Hospital at Home (HaH) services using time-driven activity-based costing (TDABC) and micro-costing to support transparent and equitable reimbursement for acute elderly care delivered at home. DESIGN: Microcosting study embedded within a randomised controlled trial (RCT) comparing HaH with conventional hospital admission in Denmark. SETTING: Three municipalities in the Central Denmark Region in collaboration with emergency department physicians at a regional hospital. PARTICIPANTS: A consecutive subsample of 107 elderly acute patients enrolled in the RCT between June 2022 and February 2024. Resource use for HaH activities was measured prospectively using microcosting logs, time-motion observations and administrative records. MAIN OUTCOME MEASURES: Empirically derived tariffs per HaH visit (first and subsequent) calculated using an eight-step TDABC framework incorporating process mapping, resource identification, capacity cost rates and time equations. Sensitivity analyses tested robustness to variation in key cost drivers. RESULT(S): The mean total tariff was 338.89 (95% CI 310.94 to 351.49) for first visits and 207.81 (95% CI 200.70 to 215.69) for subsequent visits, including treatment and transport components. Staff time was the principal cost driver, while equipment, overhead and travel reimbursement had smaller effects. The framework accommodates variation in staffing, geography and visit intensity and can be used to estimate total costs across diverse HaH pathways.
CONCLUSION(S): A transparent and reproducible tariff-development framework for HaH services was established using TDABC and microcosting. The model aligns reimbursement with actual resource use and care complexity and provides a transferable template for economic evaluation and operational planning. TRIAL REGISTRATION NUMBER: NCT05360914.

Samadian K.D., et al. (2026) **'A Cross-Sectional Study on the Impact of Emergency Department Boarding and Crowding on Emergency Department**

Observation Unit Patient Populations.' ***JACEP Open* 7(3) (pagination), Article Number: 100363. Date of Publication: 01 Jun 2026.**

Objectives: Emergency Department (ED) boarding affects patient flow and clinical decision making, but its impact on ED observation unit (EDOU) utilization remains unclear. In this study, we examine whether ED boarding census levels are associated with changes in the characteristics, care processes, and outcomes of patients placed in the EDOU.
Method(s): We performed a cross-sectional study of all adult EDOU encounters from July 1, 2023 to June 30, 2024 in a single academic ED (~120,000 annual visits) with a 31-bed EDOU staffed by ED clinicians. Encounters were stratified into quartiles of ED boarding census (number of admitted patients boarding >=2 hours). Patient demographics, encounter characteristics, resource utilization, and outcomes were compared using chi^2 and Kruskal-Wallis tests.
Result(s): Among 8,469 encounters, patient characteristics remained largely consistent across boarding quartiles. Most diagnostic testing and imaging did not vary significantly. Higher boarding levels were associated with longer ED-to-EDOU times and modest increases in specialty consultations, ultrasounds, and echocardiograms. Admission rates were slightly higher in the highest boarding quartile compared with the lowest. EDOU length of stay increased incrementally with higher boarding levels.
Conclusion(s): ED boarding levels were not strongly associated with changes in EDOU patient characteristics, management, or outcomes. Structured eligibility criteria and dedicated review processes likely insulated EDOU use from short-term operational pressures. Modest increases in consultations, diagnostics, and admissions suggest that slightly more complex patients may be placed in the EDOU during periods of high boarding. Overall, EDOU function remained relatively stable, supporting its role as a consistent throughput mechanism even during ED crowding.

Shankar R., et al. (2026) **'The Role of Artificial Intelligence in Virtual Emergency Care: A Systematic Review.'** ***International Journal of Medical Informatics 214*(pagination), Article Number: 106411. Date of Publication: 01 Jul 2026.**

Background: The integration of artificial intelligence (AI) into virtual emergency care represents a potentially transformative approach to healthcare delivery, yet the evidence base remains poorly characterized. This systematic review comprehensively evaluates the current state of AI applications in virtual emergency care settings.
Method(s): We systematically searched eight databases (Embase, PsycINFO, MEDLINE, PubMed, Scopus, Web of Science, CINAHL, Cochrane Library) from inception through March 2025. Of 7,098 records identified and 4,935 screened after deduplication using Covidence, 8 studies met inclusion criteria following exclusion of

one study lacking AI components. Studies were assessed using PROBAST + AI for risk of bias and quality assessment, TRIPOD + AI for reporting quality, and GRADE for certainty of evidence.
Result(s): The eight included studies (total participants: approximately 0.5 million) evaluated diverse AI applications including decision trees, machine learning ensembles, and graph neural networks across multiple virtual emergency contexts. Performance varied widely (accuracy 77.5-100%, sensitivity 63-100%, specificity 60% in single study reporting). All clinical studies demonstrated serious risk of bias. TRIPOD + AI compliance averaged only 36.9% (range 30.9-48.1%). GRADE assessment revealed very low to low certainty evidence across all outcomes, with no studies measuring actual clinical outcomes.
Conclusion(s): Current evidence is insufficient to support widespread clinical implementation of AI in virtual emergency care. While preliminary results suggest potential benefits in triage accuracy and resource efficiency, critical gaps exist in validation, clinical outcome assessment, and reporting standards. Future research must prioritize prospective controlled trials with real patient data, clinical outcome measurements, and adherence to reporting guidelines.

TerhiMaija I., et al. (2026) **'Future Training and Competency Needs in Hospital-at-Home Care: A Mixed-Methods Study from the Perspective of Healthcare Administrators and Managers.'** ***Journal of Nursing Management 2026*****(1), e3461359.**
BACKGROUND: The growing complexity of hospital-at-home care highlights the pressing need for continuous professional development to enhance specialized skills. AIM: This study aimed to describe the future training and competency needs in hospital-at-home care from the perspective of healthcare administrators and managers. DESIGN: A mixed-method convergent design was used to integrate quantitative and qualitative data on similar topics simultaneously, providing a more comprehensive understanding of system-level competency requirements than either method alone.
METHOD(S): The data were collected through a nationwide survey (n = 25) and interviews (n = 46), covering all wellbeing services counties in Finland in 2023. Descriptive statistics were used for quantitative data and inductive content analysis for qualitative data.
RESULT(S): Quantitative results indicate needs for additional training in RAI assessment (68%), mental health care (60%), substance abuse expertise (48%), and managing disruptive behaviors (44%). Qualitative findings highlight broader future competence needs, including digital health; cultural and linguistic competence; interprofessional collaboration; managerial competence; home-environment quality and safety; clinical competence; and autonomy in evidence-based practice. Overall, the mixed-method findings differ yet complement one another: quantitative data

identify concrete skill gaps, while qualitative insights emphasize wider, system-level competencies to meet the evolving demands of home-based care.
CONCLUSION(S): Taken together, these complementary findings indicate that advancing the workforce will require a dual approach: addressing concrete skill deficits while simultaneously developing the broader competencies needed to meet the evolving demands of home-based care. IMPLICATIONS FOR NURSING MANAGEMENT: This study informs the creation of structured competency frameworks, enabling nursing leaders to meet the evolving demands of home-based care.

Umana E., et al. (2026) **'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 43*(3), 174–179.**
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.
Method(s): 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.
Result(s): 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(s): 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.

Wennman I., et al. (2026) **'Clinical Benefits and Risks of Emergency Departments with Or without Co-Located Primary Care-Driven Urgent Care Centers: A Systematic Review.'** ***International Emergency Nursing 86*****(pagination), Article Number: 101794. Date of Publication: 01 Jun 2026.**

Background: A significant proportion of patients who visit the emergency department (ED) could be treated at a lower level of care. Urgent Care Center (UCC) are described as a promising remedy for ED crowding.
Objective(s): The question addressed in this systematic review was: For patients visiting an ED, what are the benefits and risks of EDs with the ability to triage patients to an UCC versus EDs without that capability? Methods: This systematic review was conducted as part of a health technology assessment (HTA) performed at an HTA-center. The literature search was limited to studies with a control group; both randomized controlled studies and non-randomized controlled studies (including before and after studies) published from the year 2000 onward, in English, Swedish, Danish, or Norwegian were eligible.The outcomes of interest included mortality, serious adverse events, and length of stay (LOS).
Result(s): No data are available regarding the outcomes deemed critical for decision, mortality and serious adverse events.This systematic review had the ambition to describe the scientific evidence for a specific model of UCCs with a shared triage in the ED. A diversity of interventions, comparators and outcomes in previous studies gives the issue a complexity that is hard to overcome.Based on one retrospective study corresponding to the strict definition of intervention, comparator and outcomes it is uncertain whether EDs with UCCs differ from EDs without UCCs in terms of LOS for patients visiting the ED. From a health economics perspective, there is no data on the cost-effectiveness of UCCs. Thus, this review identified evidence gaps regarding the specific model considered. For all stakeholders and decision-makers in government-funded healthcare systems, it is important to allocate funds where they will be most effective.
Conclusion(s): The benefits and risks of EDs that can triage patients to an Urgent Care Center (UCC) compared to EDs without this possibility remain uncertain. We advocate for evidence-based decision-making in emergency care management and conclude that further prospective studies are needed to address this question.

Zeinali F., et al. (2026) **'Predicting Emergency Department Disposition using Machine Learning and Large Language Models to Support Proactive Capacity**

Management: A Multicenter Retrospective Study.' ***BMC Emergency Medicine 26*(1) (pagination), Article Number: 76. Date of Publication: 01 Dec 2026.**

Background: Emergency department (ED) crowding and prolonged boarding times remain major challenges in acute care. We aimed to develop and validate machine-learning (ML) models to predict ED disposition (hospital admission vs. discharge) before physician evaluation using routinely available electronic health record (EHR) data and features extracted from triage notes with large language models (LLMs), to support proactive inpatient bed management and staffing preparedness during high-demand and surge conditions.
Method(s): This retrospective study analyzed 998,109 encounters from 11 emergency departments within a regional health system in South Carolina (January 2023-November 2024). Predictors available before physician evaluation included demographics, arrival characteristics, vital signs, workflow variables, and LLM-extracted features. Nine classifiers were trained with and without class balancing to address the lower admission rate and with and without LLM-derived features. Model performance was evaluated using the area under the receiver operating characteristic curve (AUROC), area under the precision-recall curve (AUPRC), recall, precision, F1-score, and accuracy, and Shapley Additive Explanations (SHAP) analysis identified influential predictors.
Result(s): Balanced models outperformed unbalanced versions. The top-performing models (CatBoost, XGBoost, LightGBM) achieved AUROC of 0.89, recall > 0.83, and accuracy of 0.79. Incorporating LLM-extracted features further improved performance, primarily by increasing recall and elevating features such as "referral by another clinician" among top predictors. Other key predictors included triage acuity, presenting hospital, chief complaint, age, and arrival mode.
Conclusion(s): Integrating LLM-extracted variables with structured EHR data enables accurate early prediction of ED disposition, providing hospital decision-makers with early notice of inpatient demand to support proactive bed allocation, staffing coordination, and surge management. Trial registration: Not applicable.

ZochLesniak B., et al. (2026) 'Evaluating the Impact of a Medical Telephone Helpline and the use of a Structured Initial Assessment on Demand for Acute and Emergency Care in Germany: An Ecological Study using Secondary Data.' ***BMJ Open 16*(3) (pagination), Date of Publication: 01 Mar 2026.**

ObjectivesTo assess whether a medical telephone helpline and the use of a computer-assisted structured triage tool led to a reduction in demand for acute and emergency care in hospital emergency departments (EDs) or other ambulatory out-of-hour (OOH) services.DesignWe conducted an ecological study using secondary data on outpatient care.SettingThe study was conducted in 10 out of 16 federal states of Germany.ParticipantsThe analysis was based on ambulatory claims data

for the years 2016-2020 by 11 Associations of Statutory Health Insurance Physicians (ASHIPs) covering more than 64% of the total German population.InterventionsThe evaluated intervention comprised two components. The first was the introduction of a 24/7 medical helpline (116117), established to assist individuals with medical concerns in accessing appropriate care. The second component was the introduction of the computer-assisted triage tool SmED (Strukturierte medizinische Ersteinschatzung in Deutschland, Structured medical initial assessment in Germany) to support call-takers by suggesting medically relevant questions to identify red flags and determine the urgency of treatment and a possible treatment facility. For the analysis, approximately 3 years before and 1 1/2 years during the intervention were considered.Outcome measuresMain outcome was the effect on acute and emergency care which was measured as the number of personal doctor-patient contacts (1) in EDs (ED cases, data of 10 ASHIPs could be considered) and (2) in EDs or other OOH services (ED and OOH cases, data of 11 ASHIPs could be considered).ResultsThe analysis was limited by legal changes mandating intervention components across all study sites-leading to a loss of control groups and delayed implementation-and the onset of the COVID-19 pandemic. Across all ASHIPs and counties, the number of calls to 116117 and the number of SmED assessments showed a negative association with the number of ED cases (total change: 295.0 cases to 224.5 cases per 100 000 inhabitants, 116117 calls: r=-0.04; 95% CI -0.04 to -0.035; p<=0.001, SmED: r=-0.15; 95% CI -0.35 to 0.05; p=0.138) as well as with the combined number of ED and OOH cases (total change: 516.4 cases to 400.3 cases per 100 000 inhabitants, 116117 calls: r=-0.02; 95% CI -0.03 to -0.001; p<=0.01, SmED: r=-0.58; 95% CI -0.98 to -0.19; p<=0.01). However, the association between the number of SmED assessments and ED cases was not statistically significant. Moreover, the magnitude and direction of effects varied across ASHIPs. Sensitivity analyses restricted to time periods preceding the onset of the COVID-19 pandemic showed a non-significant negative association for 116117 calls and a significant positive association for SmED assessments with both ED cases and combined ED and OOH cases (ED cases: 116117 calls: r=-0.001; 95% CI -0.019 to -0.018; p=0.928; SmED: r=0.37; 95% CI 0.29 to 0.45; p<=0.001; ED and OOH services cases: 116117 calls: r=-0.03; 95% CI -0.06 to 0.003; p=0.077; SmED: r=0.34; 95% CI 0.20 to 0.48; p<=0.001).ConclusionsOur findings indicate a trend suggesting that implementation of a 24/7 medical helpline may reduce the demand for acute and emergency care at EDs and OOH services, although clear evidence is lacking. The impact of SmED use remains inconclusive. Further research should ideally incorporate data linkage and controls and assess the effectiveness and efficiency of the triage process, as well as the quality of subsequent care at the individual level.

Zwart L.A.R., et al. (2026) 'Redirection of Urgent Geriatric Care: Diagnostics and Treatment Parallel to the Emergency Department.' *Journal of Clinical Medicine 15*(8) (pagination), Article Number: 2989. Date of Publication: 01 Ar 2026.

Objectives: Complex patients in need of an urgent medical assessment can contribute to crowding in the Emergency Department (ED). Optimising access to geriatric expertise for this patient group is known as 'Geriatric Emergency Departments'.
Method(s): A parallel care pathway was designed to redirect frail older patients to an Urgent Geriatric Care (UGC) service rather than the ED. The UGC has access to the diagnostic facilities of the ED. This descriptive analysis reports on delivered care, diagnostics, admissions rates, discharge policy, and 30-day and 6-month outcomes concerning hospital (re)admissions, ED visits, and mortality.
Result(s): 269 patients were analysed. The median age was 83 years, 68% had polypharmacy, 51% cognitive disorders, and 83% a gait disturbance. A median of four conclusions was drawn per patient. Evaluation at the UGC often leads to medication regimen changes (81%), initiation or expansion of care at home (46%), and initiation of dementia care (18%). The hospital admission rate was 13%; the rate of ED visits within 30 days was 5% and, within 6 months, an additional 16%; the rate of hospital readmissions within 30 days was 7%, and 11% after 6 months. The mortality rates were 9% within 30 days and 12% within 6 months.
Conclusion(s): Evaluation of patients at the UGC led to a high degree of medication regimen changes, initiation of care at home, and multiple conclusions or diagnoses per patient. Readmission or revisiting rates were low. A direct comparison to care delivered at the ED should be made in a future study.

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