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#### **Review article:**

The Imperative for Integrating Care Continuum: A Multi-Disciplinary Solution to **Connecting Emergency Department Services with Primary Care and Specialty Medicine** 

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#### **Abstract**

Background: The disconnection between emergency departments (EDs) and outpatient care networks is a substantial contributor to ED over-crowding, inadequate transitions of care, and increasing healthcare expenditure in the United States. Thus, amidst increasing interest from multiple stakeholders, several studies have discussed the strategic integration of these siloed services as a potential answer to these systemic issues. **Aim:** This systematic review aims to synthesize the literature with regard to models of integration, outcomes measured, and factors related to the implementation of the integration of emergency care with primary and specialty care medical networks. Methods: Relevant literature was identified through a systematic search of peer-reviewed studies from 2000-2025 in PubMed, Scopus, Cochrane Library, and Web of Science. To be included, studies had to evaluate a formal integration strategy and report on outcomes (utilization, cost, patient satisfaction). Study design, population, intervention, and outcomes were extracted and synthesized narratively. Results: This review identified models of integration that work effectively, including embedded primary care clinics, patient navigation programs, tele-specialty consultations, and Geriatric EDs. In addition, there is strong evidence supporting that these models result in improvements. Aligning financial incentives, health information technology, and strong leadership are the most important facilitators for success. Fragmented payment models and interoperability issues are barriers. Conclusion: Incorporating emergency care with a broader care network collaboratively is an effective and essential strategy to improve patient outcomes, improve system efficiencies, and reduce costs. Successfully obtaining this at scale requires policy support to establish sustainable reimbursement models and an organizational commitment to the continued redesign of patient-centered care.

**Keywords:** emergency department integration, care transitions, care coordination, patient navigation.

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#### 1. Introduction

The healthcare system of today is both tremendously advanced and horribly fractured. Although medical science has made monolithic progress in the treatment of disease, the care infrastructure established to deliver that care likes to sit within silos, creating chasms that patients must bridge alone, all too frequently when they are most at risk. It is nowhere more glaringly evident than at the interface between emergency care and the broader networks of primary and specialty care. Emergency Departments (EDs) worldwide function as the healthcare system's "safety net," with an obligation to screen and treat everyone who presents through their doors 24 hours a day, 7 days a week, regardless of acuity, insurance status, or ability to pay. This altruistic obligation, though, has placed an unsustainable burden on EDs, and it has given rise to a pervasive crisis of overcrowding, ambulance diversion, provider burnout, and substandard patient care [1, 2].

The ED strain is a manifestation of underlying failures of the system. An expanding, aging population with a rising prevalence of intricate, chronic illness, and pervasive barriers to timely primary and specialty care has driven millions of patients to present to the ED for conditions that could be—and should be—better treated and managed elsewhere [3, 4]. Studies consistently describe that the majority of ED use is for non-emergency reasons and varies from 15% to 40%, typically due to the absence of

available appointments or the lack of an established relationship with a PCP [5, 6]. Also, for those with chronic diseases requiring inpatient stays, ED to inpatient ward to home transitions are usually chaotic, leading to medication errors, missed follow-up appointments, and unnecessary readmissions [7, 8].

This disorganization creates a reactive, episodic, and costly model of care rather than a proactive, persistent, and value-based model. These consequences are quantifiable and severe. ED overcrowding is causally associated with increased patient mortality, longer lengths of stay for time-sensitive illnesses like myocardial infarction and sepsis, and increased rates of medical errors [9, 10]. The model is extremely expensive from a financial perspective, where ED treatment is one of the most expensive forms of care, and avoidable complications arising from a breakdown in transitions in care drive the total cost of care within the system [11, 12]. For practice within always-strained doctors, environments incurs moral harm, burnout, and high turnover, further degrading the system's function [13].

In response to such problems, integrating emergency care with primary and specialty care networks has emerged not only as a desirable concept but also as a functional and strategic imperative. Integration goes beyond easy referrals and faxed discharge summaries. It is a necessary redesign of the care processes to deliver an uninterrupted, coordinated

continuum where patient information flows unencumbered, accountability is established, and the patient's journey is choreographed from their arrival in the ED to their follow-up and long-term disease management [14, 15]. This paradigm is facilitated by evolving payment models that reimburse for value and outcomes instead of volume, and by health information exchange (HIE) and telehealth technological innovation [16].

study aims review to provide comprehensive synthesis of the current of evidence, models, and outcomes implementing emergency care within primary and specialty care networks. It will assess a typology of integration models, ranging from co-located clinics and embedded care managers sophisticated telehealth consultation to networks. Notably, it will review the measurable impact of the models on consequential metrics, including ED usage rates, hospitalization stays, cost savings, patient satisfaction, and clinician well-being. By examining the barriers to implementation and facilitators of success, this review seeks to provide a blueprint to healthcare leaders, policymakers, and clinicians dedicated to forming a more integrated, efficient, and effective healthcare system that benefits all patients.

#### **Methods**

A systematic and comprehensive literature search was conducted on various electronic bibliographic databases like PubMed (Medline), Scopus, Cochrane Library (CENTRAL), and

Web of Science Core Collection to find peerreviewed articles pertaining to incorporating emergency care into primary and specialty care networks. Conceived in collaboration with a medical librarian, the search strategy employed a combination of controlled vocabulary (e.g., MeSH terms) and free-text terms representing four fundamental concept categories: emergency care (e.g., "Emergency Service, Hospital"[Mesh], "emergency department", "ED"), integration/coordination (e.g., "Integrated Delivery of Health Systems" [Mesh], "care transition", "care coordination"), primary care (e.g., "Primary Health Care"[Mesh], "primary care", "general practice"), specialty "Specialties, care (e.g., Medical"[Mesh], "specialty care", "consultation"). These terms were combined using Boolean operators and adapted to the individual syntax of the underlying databases. The search was restricted to English-language articles between January 1, 2000, and May 31, 2025, to address contemporary models of care and health IT. In addition, the reference lists of included studies and surrounding systematic reviews were hand-searched for additional eligible studies by backward snowballing.

Inclusion criteria were original research articles (e.g., randomized controlled trials, cohort studies, case-control studies, and pre-post analyses), systematic reviews, and meta-analyses that evaluated a formal integration strategy between emergency departments and primary or specialty care networks and had at

least one reported outcome of interest (e.g., ED utilization, hospital admissions, cost, or patient satisfaction). Editorials, commentaries, letters, publications in languages other than English, research only on intra-hospital integration (e.g., ED to inpatient) with no outside primary or specialty care, and articles where full-text articles were not published were excluded.

## Models of Integration: A Typological Framework

The search for integration has given rise to a broad array of models, each meeting specific patient groups and system inefficiencies.

## **Primary Care Integration in the ED**

These models attempt to siphon low-acuity patients out of the main ED stream to improve flow and resource use. In a Provider-in-Triage model, a provider with advanced practice (e.g., Physician Assistant or Nurse Practitioner) is positioned at the initial patient triage location. This type of provider can rapidly evaluate, order testing, and even initiate treatment or release low-level cases before they ever reach a primary ED bed [17]. A large urban hospital system implemented this model and experienced a 17% reduction in length of stay for low-acuity patients (ESI 4-5) and a 12% reduction in Left Without Being Seen (LWBS) rates in the first year [18]. Fast-Track Units are special areas in the ED for the treatment of minor ailments and injuries with special staff. A Cochrane review found that Targeted fast-track models reduce the ED length of stay of targeted patients on average by 46 minutes (95% CI: 28 to 64 minutes) [19]. The biggest challenge remains the accurate identification of appropriate patients to not misdiagnosing more serious conditions.

Or, "embedded" or "on-site" clinics, this model involves locating an equipped primary care clinic within or just outside the ED. Patients arriving in the ED but not requiring emergency care are given an immediate appointment within the on-site clinic. Such a method clearly addresses access barriers [20]. A study of an EDbased primary care clinic in a safety-net hospital identified that over 60% of patients in the clinic did not have an established primary care provider [21]. The initiative managed to divert 22% of all low-acuity ED visits to the clinic, and 72% of patients diverted did use a subsequent follow-up visit within the same primary care setting, thus proving successful with the establishment of a medical home [21]. The cost feasibility is a major hindrance, generally requiring subsidization or alignment with valuebased payment systems.

Under the realization that safe discharge also relies on successful follow-up, these programs employ patient navigators or care transition coordinators (typically nurses or social workers) to actively manage the care transition from ED to community care. Navigators facilitate getting around obstacles such as scheduling appointments, transport arrangements, patient education, and the facilitation of ED-PCP communication. The very much lauded Project RED (Re-Engineered Discharge) protocol, adapted to the ED setting, demonstrated a 30% reduction in ED revisits and hospital admissions at 30 days post-discharge in a randomized controlled trial [22]. A Pennsylvania healthcare system implemented a high-utilizer ED patient navigation program and saw a 28% decrease in ED visits and a 35% decrease in overall healthcare costs for the enrolled population over a 12-month span [23]. Success with such programs hinges greatly on the navigator's skill and ability to address complex social determinants of health.

## **Specialty Care Integration and Consultation**

Telehealth has made specialty care from the ED obsolete. Tele-stroke networks are the most widespread instance, where distant vascular neurologists can direct ED doctors in real-time, resulting in accelerated thrombolytic administration and enhanced patient outcomes. Research demonstrates that telestroke is related increased proportions of appropriate thrombolysis decisions and a 4-fold increase in rural rtPA administration [24]. Outside of stroke, e-Consultation systems allow ED doctors to asynchronously send questions, images, or lab reports to an expert (e.g., dermatology, psychiatry, cardiology) for consultation in hours, often avoiding unnecessary transfer or admission. One large health system reported that over 40% of the ED e-consults resulted in avoided transfer or inpatient admissions, with an estimated annual cost avoidance of \$1.2 million [25]. Payment for these services remains a patchwork, and thus, implementation difficult.

Specialized Psychiatric Emergency Services (PES) units, either in the central ED or as an adjacent independent building, are staffed by psychiatrists, psychiatric nurses, and social workers. They provide therapeutic environment for patients who present with urgent mental illnesses, separate from the chaotic central ED. PES units have been proven through studies to reduce boarding considerably. psychiatric patients Α demonstration project of a single dedicated PES unit reduced the median length of stay of psychiatric patients in the ED from 12.4 hours to 6.3 hours and hastened direct discharge to community-based (rather than inpatient) services by 18% [26]. Dedicated units are costly, but they are necessary to provide appropriate, compassionate care to a vulnerable population.

Geriatric EDs (GEDs) need not be physical but are defined by specialized spaces procedures, staff training, and equipment for older adults. They employ delirium screening tools. dementia screening tools, risk assessments for falls, and instruments for the assessment of functional decline. A multi-center pilot trial of GED implementation showed an overall relative reduction of 22% in the proportion of hospital admissions of older adults who presented to accredited GEDs compared with typical EDs [27]. Furthermore, the inclusion of geriatric-specific care plans and the direct referral to geriatricians and community resources yielded a 15% lower risk of functional decline at 30 days post-visit to the ED [28]. The model demonstrates how specialty-led integration through targeted expertise can improve outcomes for one high-risk population.

# **Health Information Technology (HIT) as the Enabling Backbone**

Sophisticated integration models all rest on robust HIT. Interoperable Electronic Health Records (EHRs) that allow ED clinicians to view primary care records (e.g., problem lists, medications, allergies) and vice versa are the starting point. Medication reconciliation errors present in as many as 50% of ED visits can be reduced by 35% with access to an integrated

EHR, one study estimated [29]. Health Information Exchanges (HIEs) extend this visibility among disparate health systems. ED usage of an HIE has been shown to reduce rates of redundant imaging by 12% and hospital admission probabilities for certain illnesses by 5% by providing critical history data [30]. Real-time notification systems that communicate with a patient's PCP within minutes of their ED arrival or discharge facilitate anticipatory care coordination and timely follow-up, closing the critical communication loop [31]. Table 1 and Figure 1 summarize the taxonomy of integration models.

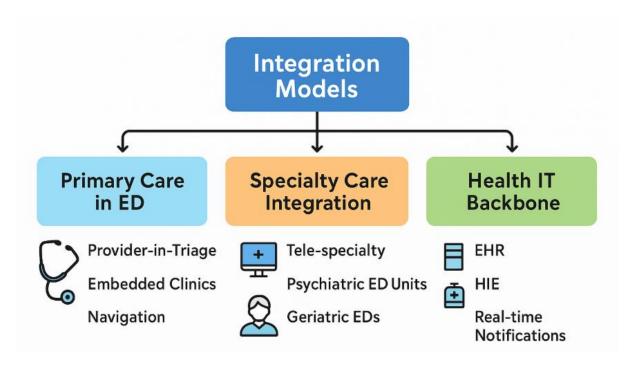


Figure 1. Typology of Integration Models.

**Table 1. Taxonomy of Integration Models.** 

<b>Model Type</b>	Key	Target	<b>Example Programs /</b>	<b>Key Challenges</b>
	Characteristics	Patient	Evidence	
		Population		
Primary	Advanced practice	Low-acuity	Evidence: 17%	Requires
Care in	provider performs	(ESI 4-5)	reduction in LOS for	significant space
Triage	rapid assessment &	patients.	low-acuity pts; 12%	and staffing; risk
	discharge at triage.		decrease in LWBS	of mis-triage.
			[19].	
Embedded	Physical PC clinic	Low-acuity	Evidence: 22%	Financial
Primary	within/adjacent to	pts; pts	diversion rate; 72%	sustainability:
Care Clinic	ED for immediate	without a	established PCP	defining patient
	diversion.	PCP.	follow-up [21].	flow protocols.
Patient	Navigators address	High	Evidence: 30%	Navigator training
Navigation	barriers to follow-	utilizers:	reduction in 30-day	and retention;
	up care	patients with	readmissions/visits	funding for non-
	(scheduling,	complex	[22]; 28% decrease in	billable services.
	transport, etc.).	social needs.	ED visits [23].	
<b>Tele-specialty</b>	Virtual consults	Pts requiring	Evidence: 4-fold	Reimbursement
Consultation	(synchronous or	specialty	increase in rtPA use	structures,
	asynchronous)	input (e.g.,	[24]; 40% avoidance	technology costs,
	with specialists.	stroke,	of transfer/admission	and connectivity.
		psych).	[25].	
Geriatric ED	Protocol-driven	Adults > 65	Evidence: 22%	Requires
(GED)	care with staff	years.	reduction in	specialized
	trained in		admissions [27]; 15%	training and often
	geriatrics.		lower risk of	environmental
			functional decline	modifications.
			[28].	
Health Info	Shared digital	All patients,	Evidence: 35%	Achieving
Exchange	platform for	particularly	reduction in med	interoperability,
(HIE)	patient data across	those with	errors [29]; 12%	data privacy, and
	organizations.	complex	reduction in duplicate	security concerns.
		histories.	imaging [30].	

#### **Measured Outcomes and Impact**

The final proof of any healthcare intervention is its measurable effect. The evidence-based evaluation of integrated care models shows large, positive effects on clinical, operational, and fiscal domains, confirming their value in transforming emergency care delivery.

#### **Clinical and Patient-Reported Outcomes**

Integrated models time and again have been found to have a profound capacity to improve primary clinical outcomes, with direct benefit to patient safety and quality of life. One of the most important indicators of success is reduced hospital admissions and readmissions. By providing robust alternatives to admission, such as direct access to specialist consultation or enhanced post-discharge support, these models prevent avoidable inpatient stays. For instance, Geriatric Emergency Departments (GEDs), with comprehensive assessment and direct linkage to community resources, have lowered hospital admission rates among older adults by 22% relative [27]. Similarly, tele-stroke programs have been crucial in bringing expert care to patients in the most appropriate setting, reducing inter-facility transfer and attendant complications [24].

The most crucial result is the follow-up visitation increase with primary care physicians (PCPs) and specialists. This is a direct indicator of successful care continuity. Patient navigation programs that actively focus on the transition from ED to ambulatory care have been reported to be highly effective. A landmark trial of a tailored navigation intervention showed a 30% increase in the rate of primary care follow-up visits completed within 14 days of ED discharge [32]. This is significant as early follow-up is an established evidence-based method for reducing readmissions, particularly in patients with chronic diseases like heart failure and COPD [33].

In addition, these models positively influence patient satisfaction and experience measures. Patients are more satisfied when they perceive their care to be coordinated and ongoing. Literature has shown significant improvements in patient-reported measures of communication and care coordination following the utilization of navigation programs and integrated clinics. Patients value the lessened burden of not having to navigate a complex system independently and feel better supported in the process [34].

Lastly, integration promotes improved disease-specific results. For people with chronic illness who are regular users of the ED, integration strategies that link them to ongoing longitudinal care result in improved control of their disease. Interventions with integrated chronic disease management support during the transition process from the ED have shown statistically significant change in biomarkers, such as a decrease in HbA1c in diabetics and improved blood pressure control in hypertensives, demonstrating that these models not just transfer the site of care, but indeed improve health [35,36].

#### **Operational and Financial Outcomes**

Operationally, integration alleviates some of the most chronic pressures on emergency departments. One of the key benefits is the reduction in Emergency Department Length of Stay (LOS). Provider-in-triage and fast-track models, through diversion of patients with low acuity from the core ED, have been shown to reduce LOS among these patient groups by a mean of 45 to 90 minutes [37]. This not only improves patient flow but also decreases crowding, which has a direct relationship with better safety outcomes in all ED patients. In addition, integrated models reduce Left Without Being Seen (LWBS) rates effectively. Patients leaving without being seen also often present a high clinical and medico-legal hazard. By streamlining processes and offering alternate pathways (i.e., same-day visits in the nearby clinic), health systems

saw reductions of 12% or more in LWBS rates that indicated improved access and patient flow [38].

The fiscal impact of integration is persuasive and varied. Even with the initial costs of startup, return on investment comes from cost avoidance and reducing the cost of care overall. The integrated models create huge cost savings through the avoidance of unnecessary admissions, ED returns, and redundant testing. Research into complex care management and geriatric ED programs has demonstrated cost avoidance of \$500 to \$2,000 per patient per year [39]. These savings accrue to the health system as a whole, particularly where there value-based payment models, where are organizations have at-risk payment for population outcomes [40, 41].

#### **Impact on Utilization of Healthcare**

Integration effectively recodes healthcare utilization patterns towards better and more efficient use of resources. The most-cited impact is the reduction in unnecessary ED visits. Focused interventions for high-utilizer patients with multiple medical and social issues through intensive case management and navigation have achieved ED visit reductions by 28% or more among them [23]. This allows ED staff to focus on true emergencies and improves access for all patients.

Moreover, integration allows for better utilization of specialty care services. Electronic consultation (econsult) platforms have worked extremely well in this regard. Through the provision of asynchronous advice, these platforms specialist unnecessary, costly, and inconvenient formal referral or transfer. One of the large integrated systems has noted that over 40% of ED e-consults translated into avoided transfers or inpatient admissions, preserving specialist time for the most vulnerable patients and improving access for those in the most underserved communities [25]. Table 2 and Figure 2 provide an overview of the synthesis of reported outcomes from integrated care models.

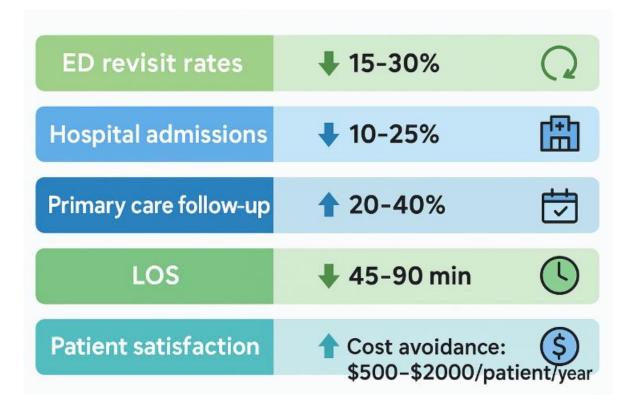


Figure 2. Outcomes of Integrated Care Models.

**Table 2. Synthesis of Reported Outcomes from Integrated Care Models** 

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### **Barriers and Facilitators to Implementation**

Despite compelling evidence for integration, widespread implementation is thwarted by daunting barriers. The awareness of these barriers and their counterbalancing facilitators is critical to effective implementation.

#### **System and Financial Barriers**

The most potent barrier is the fragmented payment model in healthcare. Fee-for-service reimbursement compensates for volume and procedure, not care coordination, patient education, or phone time setting follow-up [43]. This creates a fundamental misalignment, since financial savings when integrated (e.g., reduced admissions) typically accrue to payers or other parts of the health system, not to the ED investing in the intervention. Therefore, a lack of funds for up-front costs (e.g., hiring navigators, implementing new IT systems) is a main impediment. Health systems also have rival priorities, such as regulatory demands and managing everyday operating crises, that can push longer-term strategic objectives, such as integration into the background [21].

#### **Operational and Cultural Barriers**

IT interoperability issues are one of the main operational barriers. The reality that different Electronic Health Record (EHR) systems cannot communicate well with one another deprives efficient, smooth exchange of data, the oxygen of integrated care [4, 19]. Shortages of nurses and primary care further strain the system, preventing new models like embedded clinics from being filled. The most subtle but potent barriers may be cultural. There is usually cultural resistance to changing traditional workflows for clinical staff accustomed to the autonomy and rhythm of the ED. Also, "turf" battles and professional boundaries among specialists, primary care physicians, and emergency physicians can hinder collaboration and shared patient ownership [44].

Successful implementation hinges some facilitators of success. Excellent executive leadership is essential to secure funding, enhance the cultural change, and align organizational priorities. Equally important are physician champions—ED and community clinicians who can show the way among peers and help develop clinically sound workflows [10]. Synchronized financial incentives, through value-based contracts or shared savings programs, are potent drivers that make integration financially sensible. Underlying the HIT infrastructure supporting data sharing and communication is the technical platform. Lastly, establishing an overarching shared culture of patientcenteredness that transcends traditional departmental silos is the central value that unites all the stakeholders on a shared purpose: improving the experience and outcome of the patient [45].

#### **Conclusion and Future Directions**

The collective, conclusive proof offered in this review demonstrates that the strategic alignment of emergency care with primary and specialty provider networks is not only a new concept but a successful, much-needed revolution in healthcare delivery. These models have a significant triple aim effect: enhancing patient experiences and results, population health, and reducing per capita costs. These models represent a systematic change from a reactive, episodic, and siloed system to a proactive, continuous, and patient-centered continuum of care.

Actionable interventions for health system leaders include: (1) conducting a needs assessment to target the most urgent-priority patient groups (e.g., high-utilizers, geriatric patients); (2) pilot-testing programs with existing resources, such as pilot-testing a patient navigation program or e-consultation service; (3) investing in interoperable health information technology to fill data gaps; and (4) actively fostering physician and nurse champions to lead culture change at the frontline.

#### **Key Success Facilitators**

Policymakers and payers must create an environment that encourages integration. This involves: (1) creating and expanding reimbursement systems for non-face-to-face care coordination services (e.g., reimbursement for labs, navigation, pre-consultation communication, and follow-up calls); (2) providing grants or seed funding to support the initiation of integrated care models; and (3) incentivizing standards for health information exchange to accelerate interoperability.

Future research should focus on: (1) longitudinal study designs to assess long-term sustainability of and impact on outcomes chronic disease management; (2) application of standardized outcome measurement to allow for more robust meta-analyses and cross-study synthesis; and (3) complete economic analyses that capture upfront costs and downstream savings across the full care continuum in order to build a stronger business case for integration. By focusing on these areas, the healthcare system can drive the implementation of these critical models, eventually making sure that the right care is delivered to the patient, at the right time, in the right location.

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#### References

- Sartini M, Carbone A, Demartini A, Giribone L, Oliva M, Spagnolo AM, Cremonesi P, Canale F, Cristina ML. Overcrowding in emergency department: causes, consequences, and solutions—a narrative review. InHealthcare 2022 Aug 25 (Vol. 10, No. 9, p. 1625). MDPI.
- Bernstein SL, Aronsky D, Duseja R, Epstein S, Handel D, Hwang U, McCarthy M, John McConnell K, Pines JM, Rathlev N, Schafermeyer R. The effect of emergency department crowding on clinically oriented outcomes. Academic Emergency Medicine. 2009 Jan;16(1):1-0.

- 3. Uscher-Pines L, Pines J, Kellermann A, Gillen E, Mehrotra A. Emergency department visits for nonurgent conditions: systematic literature review. The American journal of managed care. 2013 Jan 1;19(1):47-59.
- 4. Kangovi S, Barg FK, Carter T, Long JA, Shannon R, Grande D. Understanding why patients of low socioeconomic status prefer hospitals over ambulatory care. Health affairs. 2013 Jul 1;32(7):1196-203.
- Durand AC, Palazzolo S, Tanti-Hardouin N, Gerbeaux P, Sambuc R, Gentile S. Nonurgent patients in emergency departments: rational or irresponsible consumers? Perceptions of professionals and patients. BMC research notes. 2012 Sep 25;5(1):525.
- Rizza P, Bianco A, Pavia M, Angelillo IF. Preventable hospitalization and access to primary health care in an area of Southern Italy. BMC Health Services Research. 2007 Aug 30;7(1):134.
- 7. Farzanegan F, Mozafarian B, Sepehri M. A Post-discharge Process Framework to Improve Follow-Up, Medication Reconciliation, Patient Satisfaction, and Readmission Rate in Pediatric Hospital. Annals of Healthcare Systems Engineering. 2024 Apr 24;1(1):1-5.
- 8. Chu EC, Trager RJ, Lee LY, Niazi IK. A retrospective analysis of the incidence of severe adverse events among recipients of chiropractic spinal manipulative therapy. Scientific reports. 2023 Jan 23;13(1):1254.
- Howlett NC, Cameron JA, Wood RM. Delayrelated harm: direct and indirect impacts of boarding medical patients in the Emergency Department on the urgent and emergency care pathway. A retrospective observational cohort study. medRxiv. 2025 Feb 25:2025-02.
- 10. Bütün A. Causes and Solutions for Emergency Department crowding: a qualitative study of Healthcare Staff perspectives. Sürekli Tıp Eğitimi Dergisi. 2024;32(5):391-400.

- 11. Kelen GD, Wolfe R, D'Onofrio G, Mills AM, Diercks D, Stern SA, Wadman MC, Sokolove PE. Emergency department crowding: the canary in the health care system. NEJM Catalyst Innovations in Care Delivery. 2021 Sep 28;2(5).
- 12. Madigan S, Korczak DJ, Vaillancourt T, Racine N, Hopkins WG, Pador P, Hewitt JM, AlMousawi B, McDonald S, Neville RD. Comparison of paediatric emergency department visits for attempted suicide, self-harm, and suicidal ideation before and during the COVID-19 pandemic: a systematic review and meta-analysis. The Lancet Psychiatry. 2023 May 1;10(5):342-51.
- 13. Shanafelt T, Trockel M, Wang H, Mayer T, Athey L. Assessing professional fulfillment and burnout among CEOs and other healthcare administrative leaders in the United States. Journal of Healthcare Management. 2022 Sep 1:67(5):317-38.
- 14. Hafiz O, Yin X, Sun S, Yang J, Liu H. Examining the use and application of the WHO integrated people-centred health services framework in research globally—a systematic scoping review. International Journal of Integrated Care. 2024 Apr 25;24(2):9.
- 15. Noor F, Gulis G, Karlsson LE. Exploration of understanding of integrated care from a public health perspective: A scoping review. Journal of Public Health Research. 2023 Jul;12(3):22799036231181210.
- 16. Nundy S, Cooper LA, Mate KS. The quintuple aim for health care improvement: a new imperative to advance health equity. Jama. 2022 Feb 8;327(6):521-2.
- 17. Sinsky CA, Shanafelt TD, Dyrbye LN, Sabety AH, Carlasare LE, West CP. Health care expenditures attributable to primary care physician overall and burnout-related turnover: a cross-sectional analysis. In Mayo Clinic Proceedings 2022 Apr 1 (Vol. 97, No. 4, pp. 693-702). Elsevier.

- 18. Traylor DO, Anderson EE, Etsey M, Fenton B, Cheema N, McCampbell D, Patel D, Clark B. Practical Care Coordination for Primary Care Providers: Bridging the Gap between Clinical Practice and Patient Outcomes. 2025.
- 19. Williams D, Fredendall LD, Hair G, Kilton J, Mueller C, Gray JD, Graver C, Kim J. Quality improvement: implementing nurse standard work in Emergency Department fast-track area to reduce patient length of stay. Journal of Emergency Nursing. 2022 Nov 1;48(6):666-77.
- 20. Wireklint SC, Elmqvist C, Göransson KE. An updated national survey of triage and triage related work in Sweden: a cross-sectional descriptive and comparative study. Scandinavian journal of trauma, resuscitation and emergency medicine. 2021 Jul 3;29(1):89.
- 21. Goodridge D, Stempien J. Understanding why older adults choose to seek non-urgent care in the emergency department: the patient's perspective. Canadian Journal of Emergency Medicine. 2019 Mar;21(2):243-8.
- 22. Alvarez R, Ginsburg J, Grabowski J, Post S, Rosenberg W. The social work role in reducing 30-day readmissions: the effectiveness of the bridge model of transitional care. Journal of Gerontological Social Work. 2016 Apr 2;59(3):222-7.
- 23. Iglesias K, Baggio S, Moschetti K, Wasserfallen JB, Hugli O, Daeppen JB, Burnand B, Bodenmann P. Using case management in a universal health coverage system to improve quality of life of frequent emergency department users: a randomized controlled trial. Quality of Life Research. 2018 Feb;27(2):503-13.
- 24. Wechsler LR, Demaerschalk BM, Schwamm LH, Adeoye OM, Audebert HJ, Fanale CV, Hess DC, Majersik JJ, Nystrom KV, Reeves MJ, Rosamond WD. Telemedicine quality and outcomes in stroke: a scientific statement for healthcare professionals from the American Heart Association/American Stroke Association. Stroke. 2017 Jan;48(1):e3-25.

- 25. Afable MK, Gupte G, Simon SR, Shanahan J, Vimalananda V, Kim EJ, Strymish J, Orlander JD. Innovative use of electronic consultations in preoperative anesthesiology evaluation at VA Medical Centers in New England. Health Affairs. 2018 Feb 1;37(2):275-82.
- 26. Schieber LZ, Dunphy C, Schieber RA, Lopes-Cardozo B, Moonesinghe R, Guy GP. Hospitalization associated with comorbid psychiatric and substance use disorders among adults with COVID-19 treated in US emergency departments from April 2020 to August 2021. JAMA Psychiatry. 2023 Apr 1;80(4):331-41.
- 27. Hwang U, Dresden SM, Rosenberg MS, Garrido MM, Loo G, Sze J, Gravenor S, Courtney DM, Kang R, Zhu CW, Vargas-Torres C. Geriatric emergency department innovations: transitional care nurses and hospital use. Journal of the American Geriatrics Society. 2018 Mar;66(3):459-66.
- 28. Sum G, Nicholas SO, Nai ZL, Ding YY, Tan WS. Health outcomes and implementation barriers and facilitators of comprehensive geriatric assessment in community settings: a systematic integrative review [PROSPERO registration no.: CRD42021229953]. BMC Geriatrics. 2022 Apr 29;22(1):379.
- 29. Pevnick JM, Nguyen C, Jackevicius CA, Palmer KA, Shane R, Cook-Wiens G, Rogatko A, Bear M, Rosen O, Seki D, Doyle B. Improving admission medication reconciliation with pharmacists or pharmacy technicians in the emergency department: a randomised controlled trial. BMJ quality & safety. 2018 Jul 1;27(7):512-20.
- 30. Vest JR. Geography of community health information organization activity in the United States: Implications for the effectiveness of health information exchange. Health Care Management Review. 2017 Apr 1;42(2):132-41.
- 31. Darragh PJ, Bodley T, Orchanian-Cheff A, Shojania KG, Kwan JL, Cram P. A systematic review of interventions to follow-up test results

- pending at discharge. Journal of General Internal Medicine. 2018 May;33(5):750-8.
- 32. Moe J, Kirkland SW, Rawe E, Ospina MB, Vandermeer B, Campbell S, Rowe BH. Effectiveness of interventions to decrease emergency department visits by adult frequent users: a systematic review. Academic Emergency Medicine. 2017 Jan;24(1):40-52.
- 33. Schmidt M, Ekstrand J, Tops AB. Self-reported needs for care, support, and treatment of persons who frequently visit psychiatric emergency rooms in Sweden. Issues in mental health nursing. 2018 Sep 2;39(9):738-45.
- 34. Edgren G, Anderson J, Dolk A, Torgerson J, Nyberg S, Skau T, Forsberg BC, Werr J, Öhlen G. A case management intervention targeted to reduce healthcare consumption for frequent Emergency Department visitors: results from an adaptive randomized trial. European Journal of Emergency Medicine. 2016 Oct 1;23(5):344-50.
- 35. Liu J, Palmgren T, Ponzer S, Masiello I, Farrokhnia N. Can dedicated emergency team and area for older people reduce the hospital admission rate?-An observational pre-and post-intervention study. BMC Geriatrics. 2021 Feb 10;21(1):115.
- 36. Yameny, A. Diabetes Mellitus: A Comprehensive Review of Types, Pathophysiology, Complications, and Standards of Care in Diabetes 2025. *Journal of Medical and Life Science*, 2025; 7(1): 134-141. doi: 10.21608/jmals.2025.424001
- 37. Freund Y, Cachanado M, Delannoy Q, Laribi S, Yordanov Y, Gorlicki J, Chouihed T, Féral-Pierssens AL, Truchot J, Desmettre T, Occelli C. Effect of an emergency department care bundle on 30-day hospital discharge and survival among elderly patients with acute heart failure: the ELISABETH randomized clinical trial. Jama. 2020 Nov 17;324(19):1948-56.
- 38. Jiang LG, Zhang Y, Greca E, Bodnar D, Gogia K, Wang Y, Peretz P, Steel PA. Emergency department patient navigator program

- demonstrates reduction in emergency department return visits and increase in follow-up appointment adherence. The American Journal of Emergency Medicine. 2022 Mar 1;53:173-9.
- 39. Luo N, Lippmann SJ, Mentz RJ, Greiner MA, Hammill BG, Hardy NC, Laskey WK, Heidenreich PA, Chang CL, Hernandez AF, Curtis LH. Relationship Between Hospital Characteristics and Early Adoption of Angiotensin-Receptor/Neprilysin Inhibitor Among Eligible Patients Hospitalized for Heart Failure. Journal of the American Heart Association. 2019 Feb 5;8(3):e010484.
- 40. Abdulwahid MA, Booth A, Kuczawski M, Mason SM. The impact of senior doctor assessment at triage on emergency department performance measures: systematic review and meta-analysis of comparative studies. Emergency Medicine Journal. 2016 Jul 1;33(7):504-13.
- 41. Kuo YH, Leung JM, Graham CA, Tsoi KK, Meng HM. Using simulation to assess the impacts of the adoption of a fast-track system for hospital emergency services. Journal of

- Advanced Mechanical Design, Systems, and Manufacturing. 2018;12(3):JAMDSM0073-.
- 42. Dryden EM, Kennedy MA, Conti J, Boudreau JH, Anwar CP, Nearing K, Pimentel CB, Hung WW, Moo LR. Perceived benefits of geriatric specialty telemedicine among rural patients and caregivers. Health services research. 2023 Feb;58:26-35.
- 43. Moreno G, Fu JY, Chon JS, Bell DS, Grotts J, Tseng CH, Maranon R, Skootsky SS, Mangione CM. Reducing emergency department visits among patients with diabetes by embedding clinical pharmacists in the primary care teams. Medical care. 2021 Apr 1;59(4):348-53.
- 44. Misky GJ, Burke RE, Johnson T, del Pino Jones A, Hanson JL, Reid MB. Hospital readmission from the perspective of Medicaid and uninsured patients. The Journal for Healthcare Quality (JHQ). 2018 Jan 1;40(1):44-50.
- 45. Bodenheimer T, Willard-Grace R. The chronic care model and the transformation of primary care. In Lifestyle Medicine: A manual for clinical practice, 2016 Mar 19 (pp. 89-96). Cham: Springer International Publishing.

## الحاجة إلى دمج استمرارية الرعاية: نهج متعدد التخصصات لدمج خدمات قسم الطوارئ مع الرعاية الأولية والطب التخصصي الملخص

الخلفية: يُعد الانفصال بين أقسام الطوارئ وشبكات الرعاية الخارجية سببًا كبيرًا للازدحام في أقسام الطوارئ، وانتقالات الرعاية غير الكافية، وزيادة الإنفاق الصحي في الولايات المتحدة. لذا، ونظرًا لاهتمام العديد من الأطراف المعنية، ناقشت عدة دراسات التكامل الاستراتيجي لهذه المنتخذلة كحل محتمل لهذه المشكلات النظامية .الهدف: تهدف هذه المراجعة المنهجية إلى تلخيص الأدبيات المتعلقة بنماذج الدمج، والتتاتج المقاسة، والعوامل المرتبطة بتنفيذ دمج رعاية الطوارئ مع شبكات الرعاية الأولية والتخصصية .المنهجية: تم تحديد الأدبيات ذات الصلة من خلال بحث منهجي في الدراسات المحكمة من عام 2000 حتى 2025 في قواعد بيانات PubMed و Scopus و Scopus و PubMed المستخدام، التكلفة، رضا الصلة من خلال بحث منهجي في الدراسات المحكمة من عام 2000 حتى 2025 في قواعد بيانات PubMed و الاستخدام، التكلفة، رضا المرضى). تم استخراج تصميم الدراسة، السكان، التدخل، والنتائج وتحليلها سردياً .النتائج: حددت هذه المراجعة نماذج دمج فقالة مثل عيادات المرضى). تم استخراج تصميم الدراسة، المرضى، الاستشارات التخصصية عن بعد، وأقسام الطوارئ الخاصة بكبار السن. بالإضافة إلى ذلك، هناك أدلة قوية تدعم أن هذه النماذج تحقق تحسنًا. تعد مواءمة الحوافق التشغيلي تشكل حواجز .الخلاصة: يُعد دمج رعاية الطوارئ مع شبكة رعاية أوسع بشكل تعاوني استراتيجية فعالة وضرورية لتحسين نتائج المرضى، وتحسين كفاءة النظام، وتقليل التكاليف. ويتطلب تحقيق ذلك على نطاق واسع دعم السياسات لوضع نماذج تعويض مستدامة والتزام مؤسسي لإعادة تصميم الرعاية المرتكزة على المريض.