



The Social Admission Pathway: A Multidisciplinary Strategy for Medically Unnecessary but Socially Complex Hospitalizations

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Abstract

Background: A significant portion of acute hospitalizations among older adults and marginalized populations is often prolonged by social complexities rather than medical necessity, a phenomenon known as "social admission." Patients experiencing homelessness, unsafe living conditions, caregiver shortages, or severe functional decline frequently occupy hospital beds for extended periods while waiting for social placements, leading to high costs and potential harm. This highlights a critical failure within the integration of clinical care and social infrastructure. **Aim:** This narrative review aims to identify, manage, and prevent socially complex hospitalizations by addressing non-medical barriers to discharge and community living. **Methods:** A comprehensive search of PubMed, Scopus, CINAHL, and social science databases was conducted. **Results:** Effective interventions in healthcare necessitate early identification by medical staff, thorough assessments by social workers, simplified medication access, support from health assistants, and strategic planning based on health security principles. Models like complex discharge teams and hospital-hotels have been shown to reduce length of stay by 20-40% and lower emergency department recidivism by integrating social care within clinical workflows and dismantling barriers between clinical and social services. **Conclusion:** The "social admission" highlights issues within a fragmented health and social care system. Addressing this requires redefining hospital responsibilities and investing in interdisciplinary teams equipped to tackle social problems, ensuring that hospital beds are used for medically necessary purposes.

Keywords: social determinants of health, hospital discharge planning, length of stay, interdisciplinary health team, medically complex patients

Introduction

The modern acute care hospital, engineered for diagnostic precision and technological intervention, has inadvertently become a default shelter and holding facility for some of society's most vulnerable individuals (Farooq et al., 2020). These patients, often older adults with frailty, individuals experiencing homelessness, or those with severe psychiatric and social comorbidities, are admitted through the emergency department (ED) for minor, transient medical issues but remain hospitalized for

weeks or even months (Murty et al., 2018). Their primary barrier to discharge is not an unresolved pneumonia or decompensated heart failure, but a profound social predicament: they have no safe home to return to, no capable caregiver, insufficient funds for medications, or require a long-term care bed that does not exist (Gonçalves-Bradley et al., 2022; Dynan et al., 2013). This phenomenon, variably termed a "social admission," "administrative admission," or "bed-blocking," represents one of the most inefficient

and ethically fraught failures of contemporary healthcare systems (Powell et al., 2022).

The scale and cost of this problem are staggering. Studies estimate that between 5% and 20% of acute hospital bed-days are occupied by patients who are medically fit for discharge but remain due to non-medical reasons (Ravaghi et al., 2020). These extended stays incur enormous direct financial costs—often exceeding \$1,000 per day—while exposing patients to significant risks, including hospital-acquired infections, functional deconditioning, delirium, and loss of community ties (Smith et al., 2022). Furthermore, they contribute to ED boarding, ambulance diversion, and surgical cancellations, impairing the hospital's ability to fulfill its core mission of treating acute illness (Peng et al., 2020). From a patient perspective, a prolonged hospitalization for social reasons is a demoralizing experience that medicalizes social need and can accelerate dependency (Khanna et al., 2016).

The root cause is a profound systems pathology: the artificial and rigid bifurcation of "healthcare" and "social care." Hospitals are funded and staffed to diagnose and treat disease, while solutions for homelessness, caregiver support, and functional disability reside in underfunded, fragmented community agencies and social services (Pellico-López et al., 2019). The discharge process often becomes a high-stakes game of "hot potato," where hospital teams, under pressure to free beds, attempt to offload patients into an unprepared or non-existent community safety net (Zychlinski et al., 2020). This process is not merely a logistical challenge; it is a clinical and ethical imperative that demands a coordinated, multidisciplinary response.

This narrative review synthesizes the evolving evidence (2010-2024) to argue that managing social admissions requires a fundamental re-engineering of hospital workflow and philosophy. It must move from seeing social complexity as an external nuisance to recognizing it as a core determinant of health outcomes that requires integrated, in-house expertise. This review analyzes the essential, synergistic roles of seven disciplines: General Physicians and Nurses (as frontline identifiers and medical managers); Social Workers (as experts in assessment and system navigation); Pharmacists (as enablers of medication access and adherence); Health Assistants/Community Health Workers (as logistical bridges to community resources); Health Security Planners (as architects of resilient systems for vulnerable populations); and Radiographers/Radiologists (as stewards of appropriate diagnostic resource use). The central thesis is that reducing avoidable hospital days for social reasons is not about discharging patients faster, but about discharging them *better*—with a viable, sustainable plan that actively addresses the social determinants of health that precipitated the admission. This requires a dedicated "social admission pathway"

managed by an interdisciplinary team with the time, resources, and mandate to solve social problems as a legitimate and vital component of hospital care.

The Roles and Interventions of the Multidisciplinary Social Admission Team

The pathway begins with accurate and early identification. General physicians (hospitalists, internists, geriatricians) and nursing staff are the first to recognize the disconnect between a patient's improving medical status and their looming discharge crisis (Table 1).

The physician's role extends beyond establishing medical stability ("medically fit for discharge"). It involves conducting a proactive, holistic assessment that explicitly screens for social risk factors (Arina et al., 2023). This includes asking standardized questions upon admission or early in the stay about housing stability, availability of caregivers, ability to perform activities of daily living (ADLs), financial resources for medications and food, and history of health service utilization (Gokhale et al., 2023). Nurses, through their continuous contact, gather crucial contextual data—observing a patient's functional capacity, hearing concerns from family members, and identifying unstated anxieties about returning home. Tools like the Score for Vulnerability and Coordination of Care (SVACC) or the INTERACT Stop and Watch tool can help standardize this early warning process (O'Brien, 2019). The key shift is for the clinical team to document "socially unfit for discharge" with the same gravity as "medically unstable," triggering an immediate referral to the interdisciplinary team rather than allowing days of unnecessary medical testing to pass (Yang et al., 2022).

Social Work as System Navigator and Advocate

Once identified, the patient becomes the primary responsibility of the hospital social work team, whose expertise is critical in untangling complex social needs.

Social workers conduct in-depth biopsychosocial assessments to understand the full scope of barriers. This involves evaluating mental capacity, assessing caregiver burnout, negotiating with reluctant family members, and navigating Byzantine application processes for public housing, Medicaid, long-term care facilities, and home care services (Dimla et al., 2023). Their work is one of intense advocacy and negotiation, often requiring them to bridge the gap between hospital urgency and community agency timelines. For patients requiring long-term care (LTC) placement, social workers manage the arduous process of identifying available beds, completing lengthy applications, and arranging pre-admission assessments—a process that can take weeks even under ideal circumstances (Fu et al., 2023). Their role is not clerical but clinical, requiring sophisticated therapeutic skills to manage patient and family anxiety, grief, and resistance (Allen et al., 2023).

The Supporting Roles of Pharmacy, Health Assistants, and Health Security

A viable discharge plan requires more than a bed; it requires the practical means to sustain health in the community. This is where supporting disciplines provide essential enabling functions.

For patients with limited health literacy or financial constraints, a complex medication regimen is a primary cause of readmission. Clinical pharmacists intervene by conducting discharge medication reconciliation, simplifying regimens (e.g., aligning dosing times, deprescribing non-essential drugs), and switching to lower-cost therapeutic alternatives or generic drugs (Nuckols et al., 2023). Crucially, they work to ensure the patient leaves the hospital with medications in hand or with a confirmed, affordable plan to obtain them, often collaborating with patient assistance programs. This prevents the common scenario where a patient is discharged with a prescription they cannot fill, leading to rapid clinical deterioration and ED return (Mabire et al., 2018).

Health assistants or dedicated discharge coordinators provide the logistical "muscle" for the plan developed by social work and medicine. They make dozens of phone calls to arrange home health services, procure durable medical equipment (DME) like walkers or hospital beds, schedule follow-up transportation, and confirm that utilities are on in a patient's apartment (Bonetti et al., 2020). For patients transitioning to shelters or temporary housing, they act as a liaison, communicating medical needs and ensuring a warm handoff. They are the operational engine that translates a plan on paper into reality (Becker et al., 2021).

The health security perspective elevates the issue from individual cases to a systems-level concern.

Planners analyze data on social admissions to identify high-risk populations (the elderly homeless, patients with severe mental illness) and design proactive interventions (Lee et al., 2023). This includes developing memoranda of understanding with community shelters and housing agencies, creating "step-down" or medical respite care beds for patients who no longer need acute care but cannot go to a shelter, and ensuring crisis continuity of care plans for vulnerable populations during disasters like pandemics or extreme weather events (Khan et al., 2018). Health security ensures the hospital's response is strategic and resilient, not just reactive.

The Role of Diagnostic Stewardship

A subtler but important aspect of managing social admissions is avoiding iatrogenic harm and resource waste through low-value diagnostic testing. Patients with social complaints (e.g., "weakness," "found down") may undergo extensive imaging in the ED to rule out organic pathology. Radiographers and radiologists play a key role in diagnostic stewardship (Lange et al., 2023). By advocating for appropriate use criteria and questioning the clinical utility of repeated imaging in a patient whose primary issue is clearly social, they can prevent unnecessary radiation exposure, incidental findings that lead to further anxiety and testing, and the misallocation of valuable imaging resources (Rao & Levin, 2012). Their input helps the team maintain focus on the social diagnosis. Figure 1 illustrates the Social Admission Pathway within the acute hospital setting. It depicts early identification of socially complex patients by physicians and nurses, followed by coordinated interventions from social workers, pharmacists, health assistants, health security planners, and radiology services.

Table 1: The Multidisciplinary Social Admission Team: Roles and Interventions

Discipline	Core Functions in the Pathway	Key Interventions	Desired Outcome
General Physician & Nursing	Early identification of social risk; Declaration of "medically fit for discharge"; Ongoing medical management to prevent deconditioning.	Standardized social screening on admission; Daily multidisciplinary rounds focusing on discharge barriers; "Medically fit" flag in EHR.	Accurate, early triage of social admissions; Cessation of unnecessary medical workups.
Social Work	Comprehensive biopsychosocial assessment; Securing placements (LTC, shelter, housing); Family mediation & advocacy; Managing legal/guardianship issues.	Intensive case management; Applications for public benefits & housing; Coordination with external agencies (APS, Area Agency on Aging).	A viable, safe discharge destination identified and secured.
Pharmacy	Discharge medication reconciliation & simplification; Affordability assurance; Patient/caregiver medication education.	Deprescribing; Therapeutic substitution to low-cost options; Arranging for discharge medications to be dispensed on-site.	Patient leaves with understandable, affordable medications, reducing readmission risk.

Health Assistant / Discharge Coordinator	Logistical execution of the discharge plan; Communication with community providers; Arranging DME & transport.	Pre-discharge home safety checks (if applicable); Confirmation of service start dates; Warm handoff calls to post-acute providers.	Seamless transition; All practical elements of the discharge plan are in place at the time of discharge.
Health Security	Population-level risk analysis; Development of system partnerships & backup pathways; Crisis planning for vulnerable groups.	Creating medical respite care options; Formalizing partnerships with housing-first agencies; Data tracking of social admission metrics.	A resilient system with alternative pathways, reducing reliance on acute beds for social care.
Radiographer / Radiologist	Promoting appropriate imaging; Avoiding low-yield tests for clearly social presentations.	Consultation on imaging necessity; Use of clinical decision support for ordering.	Prevention of unnecessary radiation, cost, and diagnostic odysseys that delay social planning.

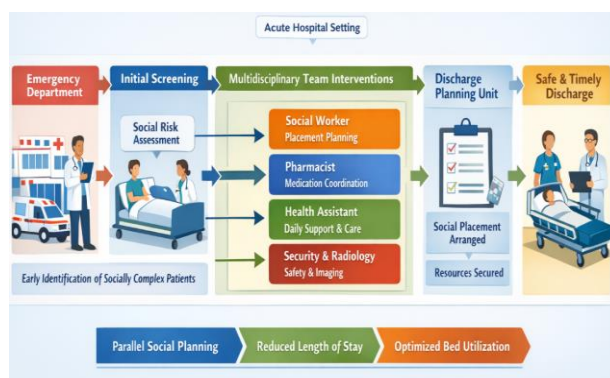


Figure 1. The Social Admission Pathway: Multidisciplinary Hospital-Based Identification and Management

Synthesis of Integrated Models and Their Impact

Evidence supports specific organizational models that successfully integrate these roles to manage social admissions.

Complex Discharge Planning Teams

These are dedicated, interdisciplinary teams (IDT) comprising social work, nursing, pharmacy, and therapy who meet daily or weekly to review patients with prolonged lengths of stay (Rostagno et al., 2016). Their focused authority and regular communication break down silos and accelerate problem-solving. Studies show such teams can reduce average length of stay (ALOS) for complex patients by 2-5 days (Ireland et al., 2019).

Hospital-Hotel or Medical Respite Models

For patients who are medically stable but homeless or in unsafe housing, alternative facilities provide a bridge (Bring et al., 2020). These "step-down" units, often in repurposed motels or dedicated facilities with minimal nursing support, provide free acute beds while providing a safe environment where social workers can secure permanent housing. This model is highly effective for reducing ED use and hospitalizations among the homeless (Gazey et al., 2019).

Geriatric Emergency Department (GED) Initiatives

GEDs embed social workers and pharmacists in the ED to conduct rapid assessments and initiate community referrals for older adults presenting with social frailty, preventing an admission altogether (Lucke et al., 2022). The outcomes of these integrated approaches are significant. They consistently demonstrate reductions in length of stay by 20-40% for the target population, decreased 30-day readmission and ED recidivism rates, improved patient and staff satisfaction, and substantial cost savings for the hospital system, often with a strong return on investment for the added team resources (Gonçalves-Bradley et al., 2022; Hunt-O'Connor et al., 2021). Figure 2 presents an integrated hospital-community care model addressing social determinants of health. It highlights transitional solutions such as medical respite care and hospital-hotel models, partnerships with housing and social service agencies, and feedback loops that reduce emergency department recidivism and rehospitalization.



Figure 2. Integrated Hospital-Community Model for Reducing Socially Driven Hospitalizations Barriers and Future Directions

Despite proven effectiveness, implementation faces deep structural barriers (see Table 2). Funding misalignment is primary: hospitals bear the cost of interdisciplinary teams, while the savings (fewer bed-days) accrue to the hospital, but the long-term benefits (stable housing, fewer ED visits) benefit payers and community budgets—a classic case

of "wrong-pocket" incentives. Workforce shortages in social work and community health are acute. Information silos between hospital EHRs and community service databases hinder

coordination. Legal and regulatory hurdles, such as Medicaid's "institution for mental disease" (IMD) exclusion or strict eligibility criteria for benefits, can create insurmountable delays.

Table 2: Barriers and Enablers for Implementing a Social Admission Pathway

Domain		Critical Barriers	Essential Enablers & Solutions
Financial Payment	&	Fee-for-service rewards bed-days, not coordination; Hospital funds the team, community/society reaps long-term savings; Underfunding of community social services.	Capitated/global budget models that incentivize keeping patients out of hospital; State Medicaid waivers to fund medical respite care; Pay-for-performance metrics tied to reducing socially-driven length of stay.
Workforce Culture	&	Severe shortage of hospital social workers; Clinical culture that devalues "social" work; Burnout among discharge planners.	Investing in training & competitive salaries for social workers; Leadership mandate establishing social care as a core hospital function; Integrating IDT rounds into mandatory daily workflow.
Systems Interoperability	&	Hospital EHRs not linked to community housing/social service databases; Privacy laws (HIPAA) perceived as barriers to sharing information with community partners.	Developing shared information platforms with community agencies (with patient consent); Creating formal data-sharing agreements ; Designing simple, cross-system referral forms .
Policy & Regulation		Medicaid IMD exclusion limits psychiatric care options; Lengthy guardianship processes; Eligibility cliffs for benefits that discourage discharge planning.	Policy advocacy for regulatory reform (e.g., expanding IMD exemptions); Supporting expedited court processes for guardianship; Braiding funding across health, housing, and social service agencies.
Community Capacity		Critical shortage of LTC beds, affordable housing, and home care workers; Fragmented, under-resourced community service landscape.	Hospital investment in or partnership with community housing developments; Advocacy for increased public funding for social infrastructure; Developing hospital-based medical respite as a stopgap.

Conclusion

The "social admission" is not an anomaly; it is a logical consequence of a society that treats healthcare and social care as separate, unequal enterprises. Hospitals have become the catchment basin for failures in housing policy, social safety nets, and community support systems. Continuing to manage these cases through ad-hoc, crisis-driven discharge planning is economically unsustainable and clinically unethical.

This review argues that hospitals must proactively develop and resource dedicated Social Admission Pathways. This is not an expansion of the hospital's mandate, but a necessary contraction of its inappropriate role as a warehouse. By investing in interdisciplinary teams that include social work, pharmacy, and community navigation as core clinical services, hospitals can shorten stays, improve outcomes, and reduce suffering. The ultimate goal is to restore the acute care bed to its intended purpose while building dignified, effective bridges back to community life for our most vulnerable patients. This requires a fundamental rethinking: solving social

problems is not a distraction from medical care; for a growing proportion of the population, it is the necessary treatment.

References

1. Allen, J., Woolford, M., Livingston, P. M., Lobchuk, M., Muldowney, A., & Hutchinson, A. M. (2023). Informal carer support needs, facilitators and barriers in transitional care for older adults from hospital to home: A scoping review. *Journal of Clinical Nursing*, 32(19-20), 6773-6795. <https://doi.org/10.1111/jocn.16767>
2. Arina, P., Kaczorek, M. R., Hofmaenner, D. A., Pisciotto, W., Refinetti, P., Singer, M., ... & Whittle, J. (2023). Prediction of complications and prognostication in perioperative medicine: a systematic review and PROBAST assessment of machine learning tools. *Anesthesiology*, 140(1), 85. <https://doi.org/10.1097/ALN.0000000000004764>
3. Becker, C., Zumbrunn, S., Beck, K., Vincent, A., Loretz, N., Müller, J., ... & Hunziker, S.

- (2021). Interventions to improve communication at hospital discharge and rates of readmission: a systematic review and meta-analysis. *JAMA Network Open*, 4(8), e2119346-e2119346. doi:10.1001/jamanetworkopen.2021.19346
4. Bonetti, A. F., Reis, W. C., Mendes, A. M., Rotta, I., Tonin, F. S., Fernandez-Llimos, F., & Pontarolo, R. (2020). Impact of pharmacist-led discharge counseling on hospital readmission and emergency department visits: A systematic review and meta-analysis. *Journal of Hospital Medicine*, 15(1), 52-59. <https://doi.org/10.12788/jhm.3182>
 5. Bring, C., Kruse, M., Ankarfeldt, M. Z., Brünés, N., Pedersen, M., Petersen, J., & Andersen, O. (2020). Post-hospital medical respite care for homeless people in Denmark: a randomized controlled trial and cost-utility analysis. *BMC health services research*, 20(1), 508. <https://doi.org/10.1186/s12913-020-05358-4>
 6. Dimla, B., Parkinson, L., Wood, D., & Powell, Z. (2023). Hospital discharge planning: A systematic literature review on the support measures that social workers undertake to facilitate older patients' transition from hospital admission back to the community. *Australasian Journal on Ageing*, 42(1), 20-33. <https://doi.org/10.1111/ajag.13138>
 7. Dynan, L., Goudie, A., Smith, R. B., Fairbrother, G., & Simpson, L. A. (2013). Differences in quality of care among non-safety-net, safety-net, and children's hospitals. *Pediatrics*, 131(2), 304-311. <https://doi.org/10.1542/peds.2012-1089>
 8. Farooq, A., Paredes, A. Z., Merath, K., Hyer, J. M., Mehta, R., Sahara, K., ... & Pawlik, T. M. (2020). How safe are safety-net hospitals? Opportunities to improve outcomes for vulnerable patients undergoing hepatopancreaticobiliary surgery. *Journal of Gastrointestinal Surgery*, 24(11), 2570-2578. <https://doi.org/10.1007/s11605-019-04428-1>
 9. Gazey, A., Vallesi, S., Martin, K., Cumming, C., & Wood, L. (2019). The cottage: providing medical respite care in a home-like environment for people experiencing homelessness. *Housing, Care and Support*, 22(1), 54-64. <https://doi.org/10.1108/HCS-08-2018-0020>
 10. Gokhale, S., Taylor, D., Gill, J., Hu, Y., Zeps, N., Lequertier, V., ... & Enticott, J. (2023). Hospital length of stay prediction tools for all hospital admissions and general medicine populations: systematic review and meta-analysis. *Frontiers in Medicine*, 10, 1192969. <https://doi.org/10.3389/fmed.2023.1192969>
 11. Gonçalves-Bradley, D. C., Lannin, N. A., Clemson, L., Cameron, I. D., & Shepperd, S. (2022). Discharge planning from hospital. *Cochrane database of systematic reviews*, (2). <https://doi.org/10.1002/14651858.CD000313.pub6>
 12. Hunt-O'Connor, C., Moore, Z., Patton, D., Nugent, L., Avsar, P., & O'Connor, T. (2021). The effect of discharge planning on length of stay and readmission rates of older adults in acute hospitals: A systematic review and Meta-Analysis of systematic reviews. *Journal of Nursing Management*, 29(8), 2697-2706. <https://doi.org/10.1111/jonm.13409>
 13. Ireland, P. J., Francis, A., Jackman, S., & McLennan, K. (2019). Exploring functional outcomes and allied health staffing levels in an inpatient paediatric rehabilitation unit. *Disability and rehabilitation*, 41(3), 293-298. <https://doi.org/10.1080/09638288.2017.1387293>
 14. Khan, Y., O'Sullivan, T., Brown, A., Tracey, S., Gibson, J., Génereux, M., ... & Schwartz, B. (2018). Public health emergency preparedness: a framework to promote resilience. *BMC public health*, 18(1), 1344. <https://doi.org/10.1186/s12889-018-6250-7>
 15. Khanna, S., Sier, D., Boyle, J., & Zeitz, K. (2016). Discharge timeliness and its impact on hospital crowding and emergency department flow performance. *Emergency Medicine Australasia*, 28(2), 164-170. <https://doi.org/10.1111/1742-6723.12543>
 16. Lange, S. M., Choudry, M. M., Hunt, T. C., Ambrose, J. P., Haaland, B. A., Lowrance, W. T., ... & O'Neil, B. B. (2023, January). Impact of choosing wisely on imaging in men with newly diagnosed prostate cancer. In *Urologic Oncology: Seminars and Original Investigations* (Vol. 41, No. 1, pp. 48-e19). Elsevier. <https://doi.org/10.1016/j.urolonc.2022.09.007>
 17. Lee, J. M., Jansen, R., Sanderson, K. E., Guerra, F., Keller-Olaman, S., Murti, M., ... & Khan, Y. (2023). Public health emergency preparedness for infectious disease emergencies: a scoping review of recent evidence. *BMC Public Health*, 23(1), 420. <https://doi.org/10.1186/s12889-023-15313-7>
 18. Lucke, J. A., Mooijaart, S. P., Heeren, P., Singler, K., McNamara, R., Gilbert, T., ... & Conroy, S. (2022). Providing care for older adults in the Emergency Department: expert clinical recommendations from the European

- Task Force on Geriatric Emergency Medicine. *European geriatric medicine*, 13(2), 309-317. <https://doi.org/10.1007/s41999-021-00578-1>
19. Mabire, C., Dwyer, A., Garnier, A., & Pellet, J. (2018). Meta-analysis of the effectiveness of nursing discharge planning interventions for older inpatients discharged home. *Journal of advanced nursing*, 74(4), 788-799. <https://doi.org/10.1111/jan.13475>
 20. Murty, S., Begley, C. E., Franzini, L., & Swint, J. M. (2016). Primary care availability, safety net clinics, and health insurance coverage: the association of these access factors with preventable hospitalizations. *The Journal of Ambulatory Care Management*, 39(3), 253-263. DOI: 10.1097/JAC.0000000000000115
 21. Nuckols, T. K., Berdahl, C. T., Henreid, A. J., Schnipper, J. L., Rauf, A., Ko, E. M., ... & Pevnick, J. M. (2023). Comprehensive Pharmacist-led Transitions-of-care Medication Management around Hospital Discharge Adds Modest Cost Relative to Usual Care: Time-and-Motion Cost Analysis. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 60, 00469580231218625. <https://doi.org/10.1177/00469580231218625>
 22. O'Brien, K. H. (2019). Social determinants of health: the how, who, and where screenings are occurring; a systematic review. *Social work in health care*, 58(8), 719-745. <https://doi.org/10.1080/00981389.2019.1645795>
 23. Pellico-López, A., Cantarero, D., Fernández-Feito, A., Parás-Bravo, P., Cayón de las Cuevas, J., & Paz-Zulueta, M. (2019). Factors associated with bed-blocking at a university hospital (Cantabria, Spain) between 2007 and 2015: A retrospective observational study. *International Journal of Environmental Research and Public Health*, 16(18), 3304. <https://doi.org/10.3390/ijerph16183304>
 24. Peng, Q., Yang, J., Strome, T., Weldon, E., & Chochinov, A. (2020). Evaluation of physician in triage impact on overcrowding in emergency department using discrete-event simulation. *J. Proj. Manag*, 5, 211-226. doi: 10.5267/j.jpm.2020.8.002
 25. Powell, W. R., Hansmann, K. J., Carlson, A., & Kind, A. J. (2022). Evaluating how safety-net hospitals are identified: systematic review and recommendations. *Health Equity*, 6(1), 298-306. <https://doi.org/10.1089/heq.2021.0076>
 26. Rao, V. M., & Levin, D. C. (2012). The overuse of diagnostic imaging and the Choosing Wisely initiative. *Annals of internal medicine*, 157(8), 574-576. <https://doi.org/10.7326/0003-4819-157-8-201210160-00535>
 27. Ravaghi, H., Alidoost, S., Mannion, R., & Bélorgeot, V. D. (2020). Models and methods for determining the optimal number of beds in hospitals and regions: a systematic scoping review. *BMC health services research*, 20(1), 186. <https://doi.org/10.1186/s12913-020-5023-z>
 28. Rostagno, C., Buzzi, R., Campanacci, D., Boccacini, A., Cartei, A., Virgili, G., ... & Marchionni, N. (2016). In hospital and 3-month mortality and functional recovery rate in patients treated for hip fracture by a multidisciplinary team. *PloS one*, 11(7), e0158607. <https://doi.org/10.1371/journal.pone.0158607>
 29. Smith, H., Grindey, C., Hague, I., Newbould, L., Brown, L., Clegg, A., ... & Lawton, R. (2022). Reducing delayed transfer of care in older people: A qualitative study of barriers and facilitators to shorter hospital stays. *Health Expectations*, 25(6), 2628-2644. <https://doi.org/10.1111/hex.13588>
 30. Yang, C. C., Bamodu, O. A., Chan, L., Chen, J. H., Hong, C. T., Huang, Y. T., & Chung, C. C. (2023). Risk factor identification and prediction models for prolonged length of stay in hospital after acute ischemic stroke using artificial neural networks. *Frontiers in neurology*, 14, 1085178. <https://doi.org/10.3389/fneur.2023.1085178>
 31. Zychlinski, N., Mandelbaum, A., Momčilović, P., & Cohen, I. (2020). Bed blocking in hospitals due to scarce capacity in geriatric institutions—cost minimization via fluid models. *Manufacturing & Service Operations Management*, 22(2), 396-411. <https://doi.org/10.1287/msom.2018.0745>