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EXPLORING PRE-HOSPITAL EMERGENCY CARE CHALLENGES AND INTERVENTIONS TO REDUCE EMERGENCY DEPARTMENT OVERCROWDING: A QUALITATIVE META-SYNTHESIS

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Aim / Objectives

Pre-hospital Emergency Care (PEC) lacks strong evidence and is hard to scale. Recent quantitative reviews were inconclusive. This qualitative meta-synthesis aims to pool qualitative studies internationally to understand the types of PEC interventions and the challenges to implementation. The goal was to inform right-siting and ED demand management strategies through Alternative Care Service Pathways (ACSPs) as care increasingly move from physical traditional care settings to community-based non-traditional care settings.

Background

Emergency Departments (EDs) remain the front door of healthcare in many countries, including Singapore. As care increasingly shifts from hospitals to the community, Pre-hospital Emergency Care (PEC) redesign is timely to ensure patients are directed to the most appropriate care setting. Globally, EDs face high demand, driven in part by ageing populations with complex chronic illnesses[1], while a significant proportion of attendances are non-emergent and may not require hospital-based emergency care[2].

Interventions / Implementation (Method)

A comprehensive search of PubMed, Embase, CINAHL Complete, PsychINFO, Web of Science, and Scopus was conducted to identify qualitative studies. Searches were restricted to research articles written in English and published from the inception of each database until 18 July 2024 using Sandelowski and Barroso's approach to data meta-synthesis (2003)[5]. Following quality appraisal using the Critical Appraisal Skills Programme (CASP) tool, data from included studies were extracted and meta-synthesised.

Studies were included if they (1) had any qualitative data, including mixed-method studies, where findings were obtained through focus group discussions, open-ended surveys or interviews, (2) analysed the perceptions of healthcare professionals and policymakers on benefits, challenges, enablers or implementation of innovations, (3) focused on PEC innovations. They were excluded if they (1) were not written in English, (2) did not have a qualitative study design or (3) focused on hospital throughput and output interventions, or were restricted to medical treatment or emergent care (eg, prehospital medical interventions for emergent cases or medication reviews).

Results & Outcomes / Discussion (Findings)

From 15,776 records, 21 qualitative studies were included. 12 in Europe (UK, Sweden, Denmark, Ireland, and Czech Republic), 4 in North America (USA, Canada), 2 in Asia (Iran, India), 2 in Australia, 1 in Africa (Rwanda), mostly through semi-structured interviews. 4 themes derived: (a) technology-driven, specialized units, and community-based interventions, (b) perceived benefits of PEC interventions, (c) challenges in PEC implementation, and (d) key drivers for successful PEC innovations. CASP score of the included studies ranged from 27 to 30, with an average of 28.0 points.

Qualitative meta-synthesis of PEC interventions to right-site patients and reduce ED overcrowding, covering virtual consultations, tele-triage, non-conveyance protocols, and community-based solutions, with findings on barriers, enablers, and the need for culturally adapted, locally tailored implementation. Findings highlight promising diversion rates but persistent barriers around risk aversion, cultural expectations, and fragmented community pathways, underscoring the need for robust ACSP linkages, workforce training, liability protections, and culturally tailored patient education for effective implementation.

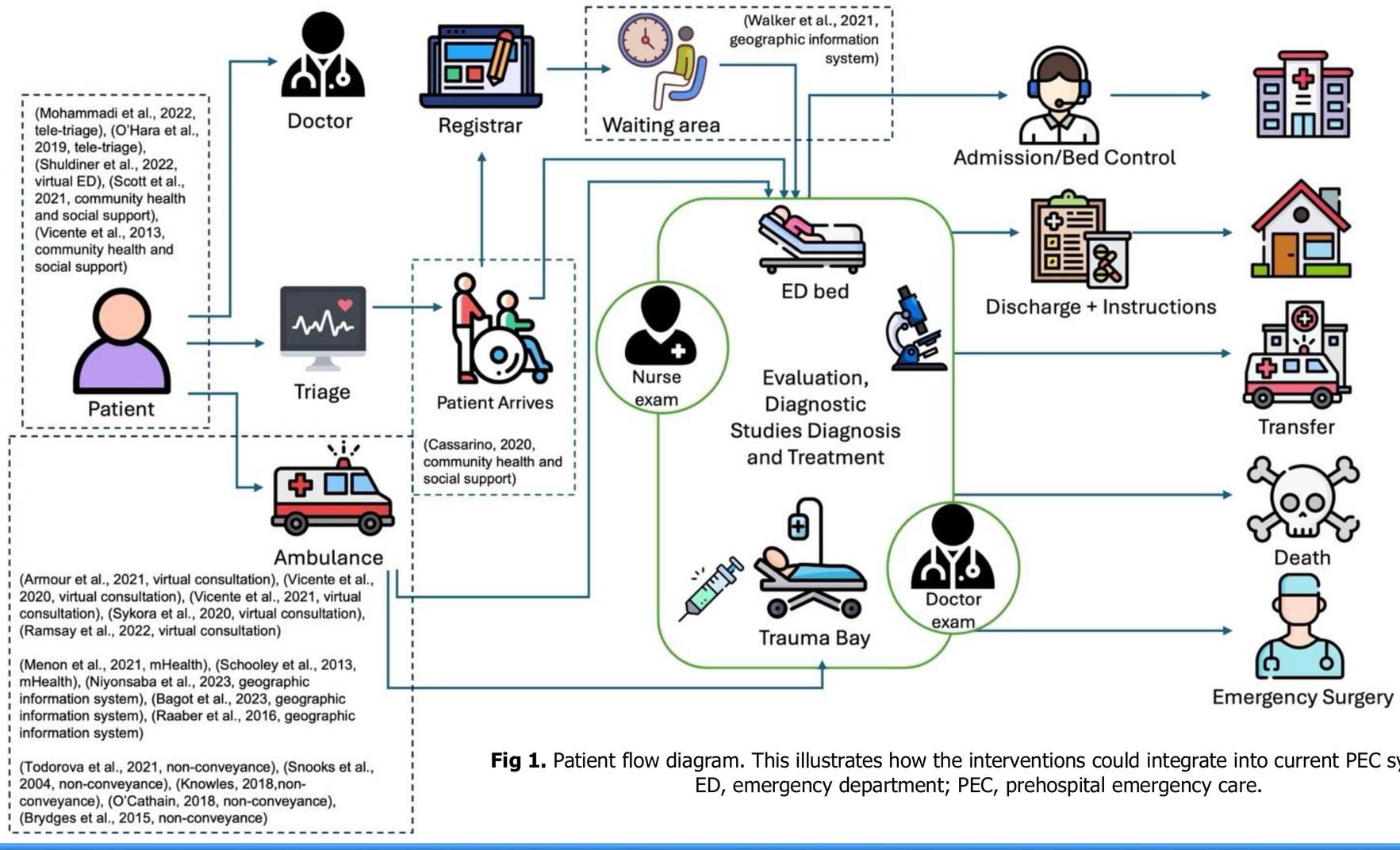


Fig 1. Patient flow diagram. This illustrates how the interventions could integrate into current PEC systems. ED, emergency department; PEC, prehospital emergency care.

Conclusion

This review highlights the multifaceted nature of PEC interventions and their dependence not only on technological efficacy or system integration, but also on the sociocultural environments in which they operate. Trust, education, expectations of care, and accessibility all play critical roles. Each intervention needs to be complemented by enablers to optimise their benefits. Future research could consider several of these PEC interventions to support early identification of clinically stable patients to Hospital-at-Home (HaH), positioning PEC as an upstream enabler bypassing ED visits. Strong community partnerships and real-time data sharing, integrating PEC and HaH can enhance appropriate management of stable patients outside hospitals.

References

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