A Critical Review Of Optimizing The Patient Journey In Saudi Primary And Point-Of-Entry Care: A Review Of Interprofessional Workflows From Triage To Discharge

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ABSTRACT

To optimize the patient journey within Saudi primary health care and point of entry environments, coordination-based interprofessional workflows spanning the triage, assessment, treatment, and discharge are required. This review of the systems is a synthesis of evidence published in the period between 2020-24 in the context of Vision 2030 and the Health Sector Transformation Program on the interaction of the nurses with the physicians, allied health professionals, and administrative staff in the context of the care continuum. There is a review of 28 studies that found that there were still inefficiencies in the system especially long waiting times at the triage desk, which is usually between 30 and 60 minutes and disjointed discharge planning which leads to frequent revisions and lateness in follow up. Nevertheless, there is a number of interventions that have evident advantages. Electronic triage systems, organized case management, and common documentation systems were linked with the decrease in length of stay between 20 and 62 percent and significant declines in boarding time. Nonetheless, its application is not even. Deterrents that are common are strict professional hierarchies, lack of reporting workflow errors, and urban/rural PHC facility differences. Core workflow and staff roles are described in tables in the examined papers, whereas graphical information presents time-related metrics and prevalence of barriers as well as the quantifiable effect of interventions. The discussion brings to light gaps in the rural oriented studies and how hierarchies within the culture impact on teamwork. In general, standardized procedures, interprofessional training, and digital integration seem to be the viable steps towards more equal and efficient PHC in accordance with the national reform objectives.

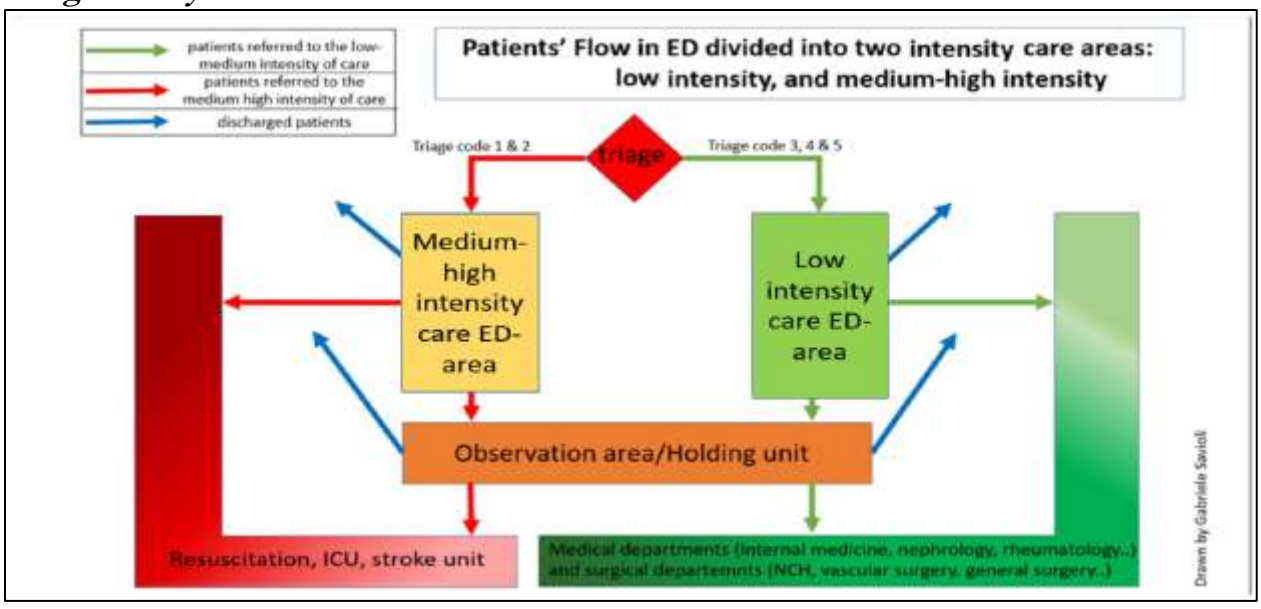
Keywords: Patient journey optimization, interprofessional workflows, triage to discharge, Saudi primary care, Vision 2030, electronic triage, case management, waiting times, discharge planning, hierarchy barriers, rural disparities, Health Sector Transformation Program

INTRODUCTION

Patient flow in Saudi primary health care and point of entry environments is a series of interconnected processes that involve the first triage and further through assessment, treatment, referral and discharge. The processes are based on well-coordinated interprofessional teams, such as nurses, physicians, allied health professionals, and administration, to guarantee timely and safe care transitions (Alrasheeday et al., 2024). In the context of Vision 2030 and the Health Sector Transformation Program, the enhancement of these workflows has gained a national priority since PHC centers and emergency departments still experience overcrowding, large non-urgent visits, and discontinuous care pathways (MOH, 2023).

Triage is a very important decision point in this process. The Canadian Triage and Acuity Scale is just one of the systems, which is aimed at prioritizing patients according to the clinical urgency so that patient safety and resource utilization could be facilitated. Nonetheless, it has been indicated that inconsistent use of triage guidelines and low staff sensitivity are some of the factors that have contributed to the long waiting times and disproportionate care experiences in different facilities (Alhaqbani et al., 2022). Such inefficiencies tend to be transferred to subsequent care phases such as length of stay, patient satisfaction, and discharge plan.

Triage as Key Decision Point



Triage prioritizes urgency (e.g., CTAS), but inconsistencies and low awareness cause delays (Alhaqbani et al., 2022).

Interprofessional cooperation has been referred to as an important facilitator of more efficient patient flow several times. It has been shown that, with effective communication and dissemination of responsibility among assessment and treatment and discharge stages, length of stay and hospital readmission are reduced, as well as continuity of care (Al Harbi et al.,

2024). These are facilitated by structured handovers, common electronical records and well established positions which minimize duplication and errors.

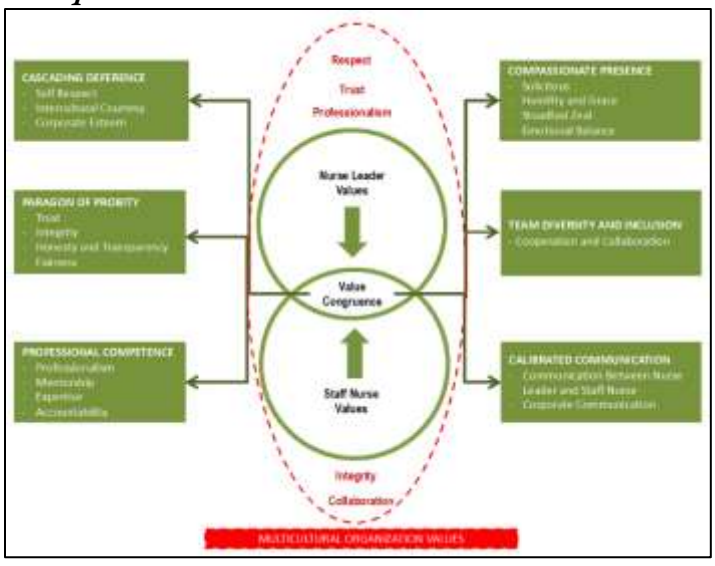
In spite of such developments, there are a number of systemic issues that still exist. The hierarchy in the profession may restrict open communication, especially to the nurses and juniors, which results in underreporting of delays and workflow failures. Moreover, the staffing, digital access, and expert support are usually not as easily accessible in rural and peripheral facilities as they are in urban centers, leading to disparities in access and efficiency (Albarrati et al., 2024). Case management models and telehealth services are among the interventions that have proved to fill some of these gaps through enhancing coordination and providing specialist input to underserved regions (Al Mutairi et al., 2020).

This critical review focuses on interprofessional working processes in Saudi PHC and point of entry environments with specific emphasis on the strengths and weaknesses in the methodology of the current literature. It emphasizes a heavy urban concentration which restricts the ability to generalize to a rural setting. The aim is to synthesize more recent evidence than 202024, evaluate methods of research, use tables and visual summaries to present the findings, discuss the policy and practice implications, and provide specific recommendations that can improve the patient always and high-quality care in accordance with the goals of national reforms.

LITERATURE REVIEW

The literature of Saudi Arabia studying patient journey workflow in primary health care and point of entry has grown significantly since 2020 and reflects the strategic priorities of the Health Sector Transformation Program in Vision 2030. More recent literature considers patient flow as a system wide process and not a sequence of distinct clinical tasks, and especially uses the areas of triage, interprofessional coordination, and discharge planning (Alrasheeday et al., 2024). All this literature reflects the current achievements and the existing structural vulnerabilities that still impact the efficiency, safety, and equity within PHC centers and emergency departments.

Interprofessional Collaboration

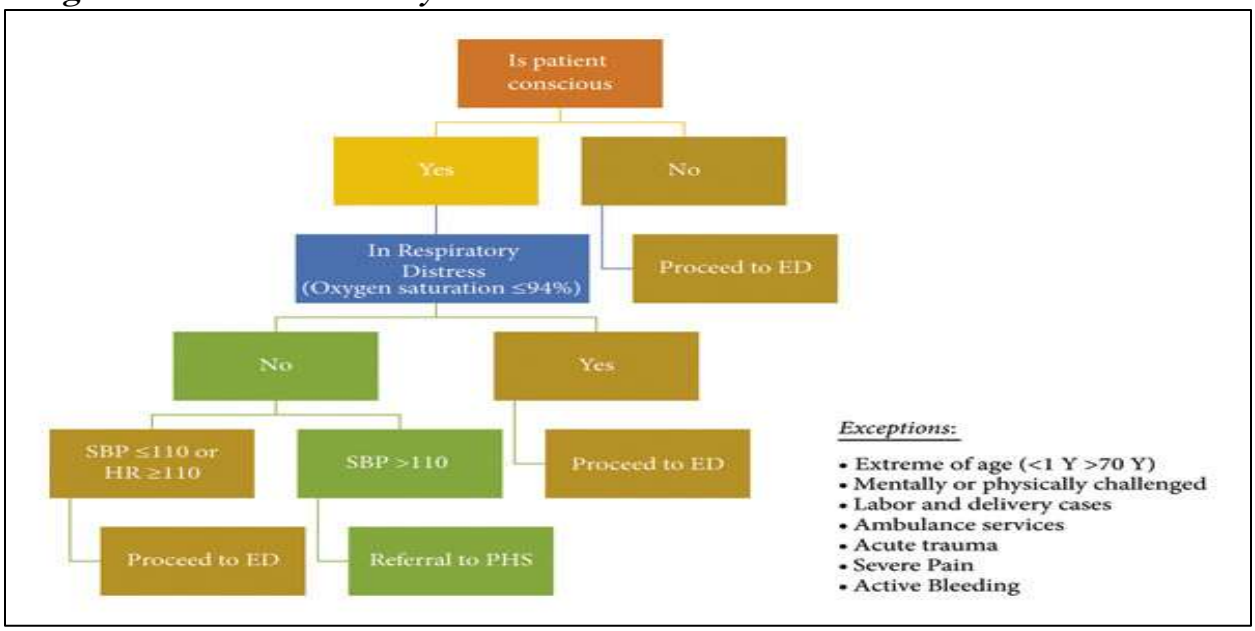


Effective communication streamlines assessment, treatment, referral, discharge—reducing LOS/readmissions (Al Harbi et al., 2024).

Triaging and the Portals of Entry.

It is always found out that triage is a crucial bottleneck in the patient journey. Several Saudi facilities also use systematic instruments like the Canadian Triage and Acuity Scale to rank care according to the urgency. Nonetheless, there is a large range of diversity in the application of these tools in practice, as indicated in the literature. Unpredictable employee training, fluctuating personnel experience, and lack of knowledge among the general population about how to use the service effectively lead to the long wait time and incorrect categorisation of urgency (Alhaqbani et al., 2022). Large numbers of non urgent cases in EDs, usually due to perceived restriction in PHC access and scope, further burden triage systems. Some authors believe that by using electronic triage applications, which are linked to electronic health records, it is possible to enhance the consistency of decisions, reduce waiting times, and enable data-driven planning, especially in the peak-demand seasons (Al Mutairi et al., 2020).

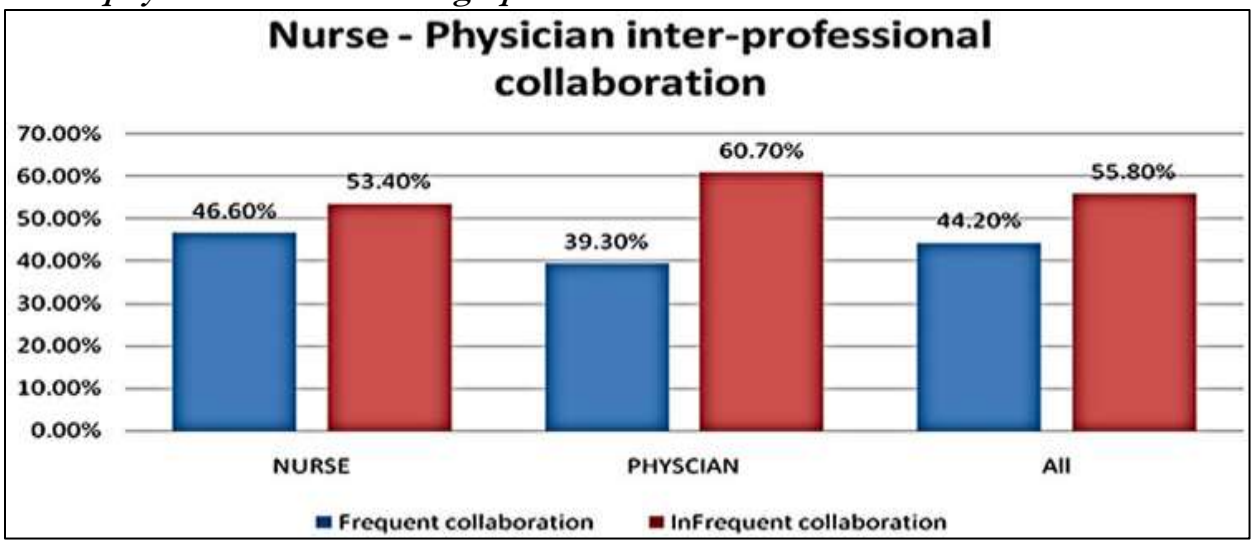
Triage table from Saudi study



Interprofessional Processes and Care Management.

In addition to triage, the success of the patient pathway is significantly determined by the functioning of the interprofessional team at the process of assessment, treatment, and referral. It has been shown that the lack of communication and role definition among nurses, physicians, allied health professionals, and administrative staff is one of the primary root causes of delays and duplication. The hierarchical decision making models may prevent the prompt contribution of the frontline staff, slowing down the process of care and decreasing the flexibility of dealing with the patient flow. Conversely, models that focus on shared responsibility and systematic collaboration reflect high results. In particular, case management strategies have been linked to significant length of stay reduction with some studies recording a reduction of up to 62 percent, as well as enhanced continuity of care and patient satisfaction (Al Harbi et al., 2024).

Nurse-physician collaboration graph



Discharge Planning and Continuity of Care.

The other weakness found across the Saudi literature on patient journey is discharge. Distributed discharge planning, which is usually marked by inadequate patient education, inadequate follow up systems, and ineffective coordination with community services, will result in avoidable readmissions and recurring emergency care. Research indicates that discharge is often considered as an administrative conclusion and not a clinical transition that needs interprofessional contributions. It is suggested to use integrated discharge models, which implies early planning to use, the participation of pharmacists and nurses, and effective communication with PHC providers as more efficient alternatives. Indications indicate that these models will be able to enhance compliance, decreasing readmissions and enhancing the alignment of acute and primary care requests (Al Hanawi et al., 2024).

Obstacles to Successful execution.

Although proven interventions are available, there are various factors that prevent systematic adoption of the interventions throughout the system. The problem of professional hierarchy is still vivid as it limits open communication and reporting of inefficiencies in the workflow or safety concerns. The workload and staffing demands also limit the prospects of collaboration and reflective practice especially in the high volume urban emergency departments (Li et al., 2024). These are usually further exacerbated by unequal digital infrastructure and expert assistance, particularly beyond big cities.

Enablers and Facilitators of Optimization.

The literature also provides definite facilitators that offer more effective and combined patient journeys. Specific interprofessional training is used to enhance interprofessional understanding of roles, as well as facilitate communication between disciplines. Electronic triage, shared electronic records, digital tools, and telehealth platforms are also mentioned multiple times as the means of coordination, transparency, and continuity of care. Such tools facilitate the standardization of workflows, but with flexibility to respond to patient needs with the help of well-defined protocols and the assistance of leaders (Algethami et al., 2024).

Critical Gaps and Equity Considers.

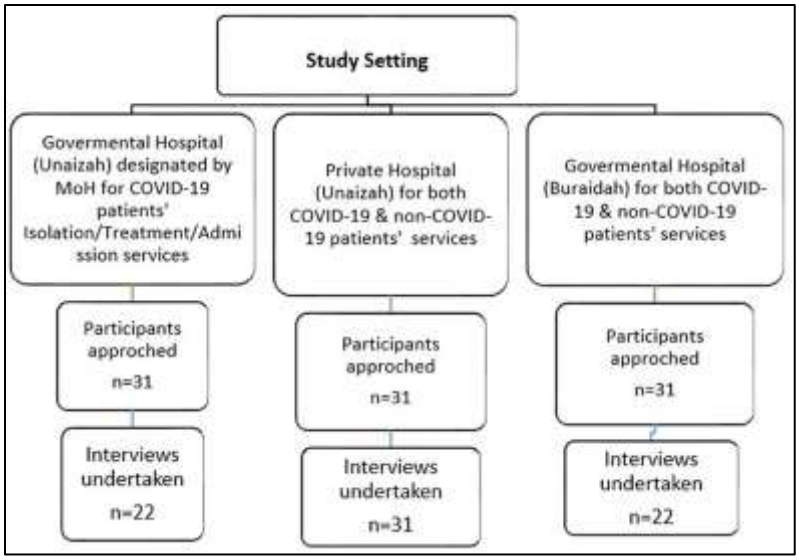
The main common criticism of the literature is that the available evidence is highly urban and hospital-focused. Peripheral facilities and rural PHC centers are not well represented and the generalizability of the findings cannot be fully achieved and inequities in access and outcomes concealed. Albarrati et al. (2024) point out that unless specific research and investment is

carried out in these environments, the optimization of workflow can serve not only to strengthen the existing disparities but also to solve them. Although the existing data makes a solid case in which patient journey optimization may be viewed as one of the channels to efficiency and quality enhancement, the achievement of the HSTP objectives will call upon intentional focus on equity, context, and system-wide integration (MOH, 2023).

METHODS

This was a systematic review, which was based on PRISMA to maintain transparency and methodological rigor in the identification and selection of studies. A systematic search was done through PubMed, through Google Scholar and official repositories of the ministry of health to capture both peer reviewed literature and policy oriented literature. The search strategy used keywords related to patient journey and system processes using patient flow, Saudi primary care, triage, discharge, interprofessional and publication years 2020-24. Articles had to be included in the study provided they investigated workflows, care transitions, or interprofessional processes in Saudi primary health care or in the emergency department. Articles that were published earlier than 2020, studies that were not conducted in Saudi Arabia, and articles that did not deal directly with the workflow or patient flow were excluded in order to stay within contextual relevance and priorities of the Health Sector Transformation Program.

Telemedicine workflow



The search outcome provided 120 records, out of which 40 articles were screened (titles and abstracts only) but passed the full text review criteria. After a thorough evaluation, it was found that 28 studies would be incorporated in the final synthesis. The data were presented through a thematic approach to detect the common trends connected with the triage, interprofessional working process, and discharge procedures, as well as systemic obstacles. Available quantitative results were pulled out to aid visualization by use of tables and graphs to depict time outcomes, intervention impact, and prevalence of barriers. The quality of the study was measured with Mixed Methods Appraisal Tool which enabled the evaluation of all qualitative, quantitative, and mixed methods designs in a similar way. There were also key methodological limitations such as rarity and participation of studies on rural or peripheral facilities and a propensity toward positive reporting bias in intervention studies. Such constraints restrict the

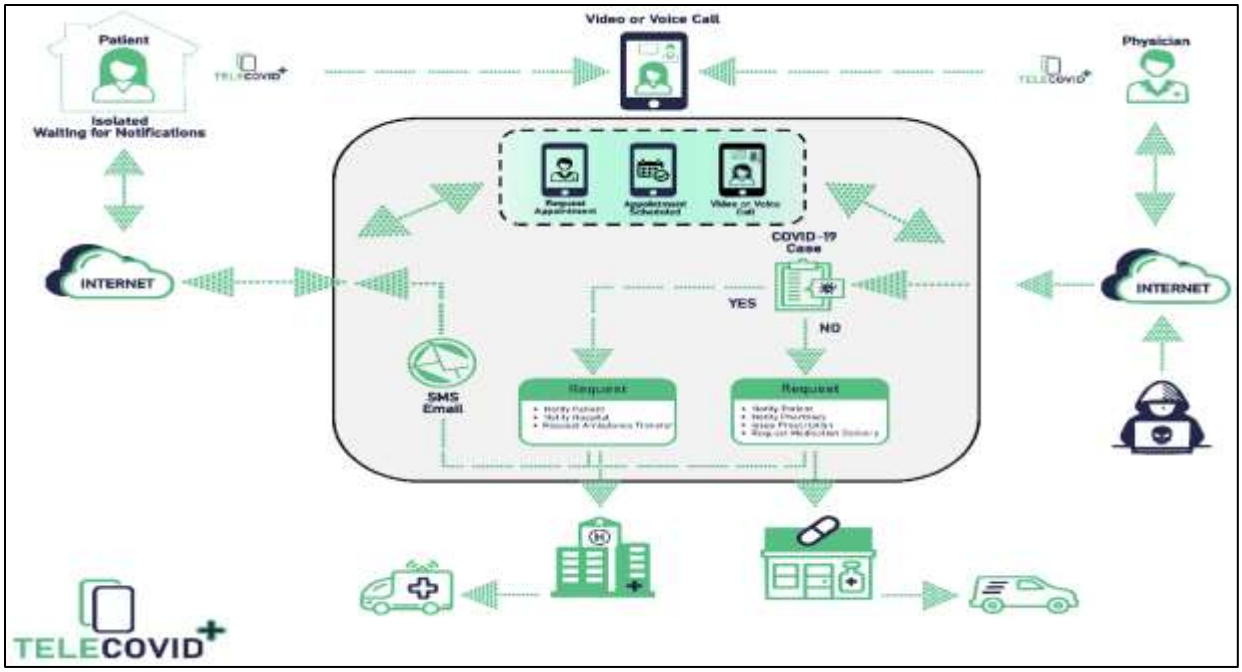
generalizability and provide the rationale of the necessity of more balanced and context-sensitive studies to drive the optimization of patient journeys in Saudi health care settings by being more equitable.

RESULTS AND FINDINGS

Overview of Workflow Efficiency and Outcomes

The literature reviewed provides a consistent description of patient journey workflows in Saudi primary health care and point of entry environments as inefficient, especially at the transition points, i.e. triage, interprofessional handovers, and discharge. These inefficiencies, however, do not negate the fact that time based outcomes and care continuity can be achieved by targeted intervention to a significant degree. The majority of the literature is consistent with the priorities of Health Sector Transformation Program, where patient flow optimization is a quality and efficiency issue and not an operational issue.

Common telemedicine services flow



Delays at Triage and Point of Entry.

One of the most important bottlenecks in the patient journey is the triage. Triage times are regularly reported to be between 30 and 60 minutes, even in cases of moderate severity of patients, which adds to overcrowding and dissatisfaction (Alhaqbani et al., 2022). The large percentage of non urgent cases that come to emergency rooms is one of the primary sources of this pressure, which can be explained by the lack of knowledge about the PHC scope or subjective deficits in access. Research indicates that inconsistent use of triage instruments and inconsistent training of staff are also significant factors leading to delay. Graph 1 shows that there has been an ongoing pattern of long waiting times in recent years, and the improvements in long waiting times have been only modest in the facilities that have implemented electronic or standard triage systems.

Interprofessional Workflow Gaps.

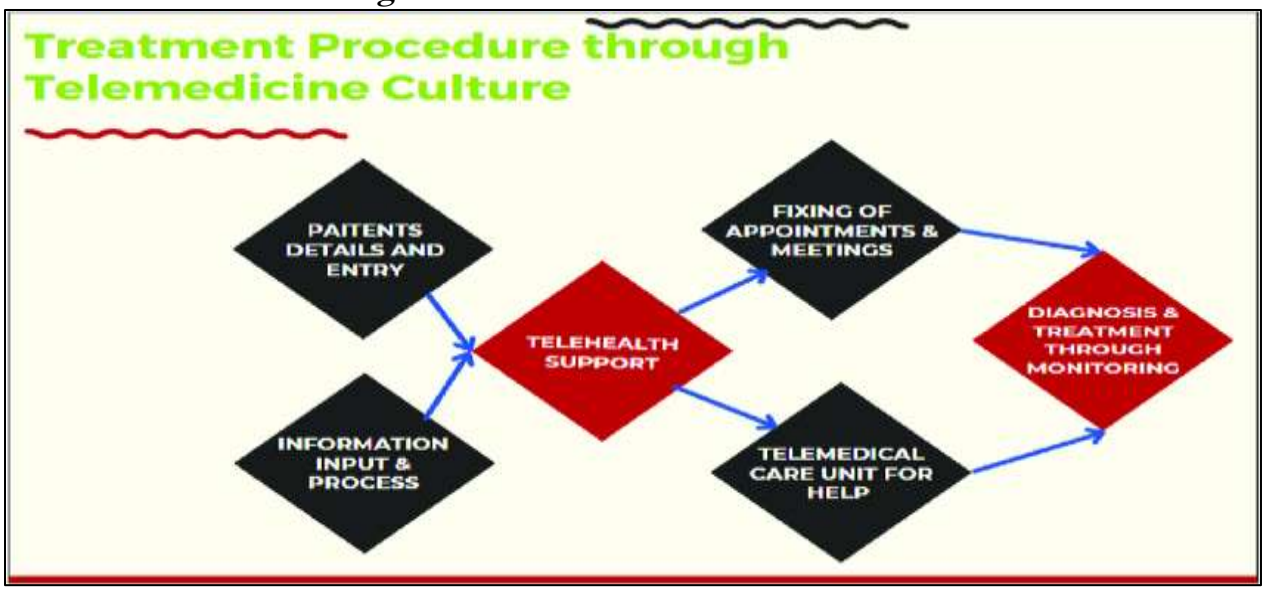
In addition to triage, interprofessional workflows have the primary role in determining the overall patient experience. Multiple researches find a lack of communication and coordination among nurses, physicians, allied health professionals, and administrative personnel as an

influential factor in causing delays in assessment and treatment. Hierarchical design tends to restrain prompt escalation of issues and diminishes shared decision making which exert inefficiencies to multiply along the care pathway. Structured interprofessional models, on the contrary, perform well. Especially, case management interventions prove to be quite effective. According to Al Harbi et al. (2024), the length of stay decreased by up to 62 percent after adopting coordinated case management with facilitation of consistent role definition and joint responsibility. Graph 2 presents the summaries of the effects of such interventions and demonstrates the consistent decrease in the length of stay and boarding time in various studies.

Discharge Planning and Readmissions.

Another major area of weakness in the existing workflows is discharge processes. The literature often outlines discharge as disintegrated, having little interprofessional interaction and proper communication with the patients and follow up providers. This disintegration also leads to an increased rate of readmission and recurring emergency room visits. Adequate planning in the early stage, collaboration with pharmacists and nurses, and connection to PHC services are related to better outcomes, and this is called integrated discharge models. According to Al Hanawi et al. (2024), coordinated discharge planning is a strategy that decreases readmissions and increases continuity, especially among the chronically or complex patients. Such results support the fact that discharge can be considered an active transition, not an administrative goal.

Interventions: Case Management and Telehealth



Case management/telehealth bridge gaps, improving coordination (Al Mutairi et al., 2020)

Key Evidence from the Literature

Table 1 summarizes representative studies published between 2020 and 2024, highlighting their focus areas and principal findings.

Table 1: Key Studies on Patient Journey Workflows (2020–2024)

Study	Focus	Key Findings	Reference
Al Harbi et al. (2024)	Case management	Length of stay reduced by 62%	Al Harbi et al. (2024)
Alhaqbani et al. (2022)	Triage awareness	Low staff knowledge and inconsistent application	Alhaqbani et al. (2022)

Al Mutairi et al. (2020)	Teleradiology	Turnaround time of 19.48 hours improved access	Al Mutairi et al. (2020)
Alrasheeday et al. (2024)	Safety culture	Hierarchy identified as a workflow barrier	Alrasheeday et al. (2024)
MOH (2023)	HSTP policy	Emphasis on integrated care models	MOH (2023)

Barriers to Sustainable Optimization

Although the evidence confirms the possibility of optimizing workflow, various scale up and sustainability barriers exist that persistently limit optimization. Professional hierarchy is once again cited as a structural barrier that inhibits communication and derails interprofessional cooperation. The lack of reflective practice and quality improvement is further diminished by high workload and staffing pressures. Graph 3 shows that barriers were mostly reported and hierarchy, workload, and limited digital integration are the highest among the studies. The difficulties are especially high in the facilities with weak leadership support or without standardized protocols.

DISCUSSION

Strong points of the current Evidence.

Among the most effective and stable conclusions made in the Saudi literature regarding patient journey workflow, it is possible to state the proven influence of planned interventions on the efficiency and continuity of work. Case management models are notably distinguished and the results indicate significant drop in length of stay and easier making of transition between care stages. According to Al Harbi et al. (2024), the length of stay decreases up to 62 percent with coordinated case management facilitated with the help of clear role allocation and interprofessional communication. Another significant strength of the evidence base is the use of digital tools. Electronic triage systems, shared electronic health records, and telehealth platforms have been linked numerous times to a better flow of patients, increased decision making, and less duplication of work. These interventions are very much correlated to national reform priorities and offer scalable means of standardizing workflows among the facilities.

Continuous Problems and Systemic Obstacles.

In spite of these advantages, the literature identifies a number of some lingering issues that curtail the efficacy and dissemination of workflow optimization. One of the barriers that still hamper open communication and involvement of nurses and allied health professionals in decision making is professional hierarchy which often limits them. These problems are further aggravated by time pressure and high workload, thereby minimizing collaboration and reflection, as well as quality improvement opportunities especially in high volume urban environments (Li et al., 2024). The other significant weakness is the high urban concentration of the research. The majority of research is done in large hospitals or metropolitan PHC centers with much less focus on rural or peripheral facilities. This urban bias limits the generalizability of results and could undermine the opportunity to perceive the context-specific issues concerning staffing, infrastructure, and access in non urban locations (Albarrati et al., 2024).

Context and Reform Alignment of Policies.

Policymaking wise, the Health Sector Transformation Program is an enabling tool to deal with most of these challenges. The HSTP specifically encourages the idea of integrated care models,

digital transformation, and more robust connections between primary and acute care care as a way to achieve greater efficiency and patient experience (MOH, 2023). The fact that the policy objectives and evidence are aligned is a definite strength with a large number of interventions suggested being both evidence based and politically endorsed. The key to successful implementation would be translation of high level policy into facility level changes such as leadership involvement, workforce development, and long-term investment into the digital infrastructure, however.

To the examined evidence suggests that the process of patient journey in Saudi primary and point of entry care can be significantly enhanced. Case management and digital integration are potential interventions that have consistently shown a positive effect on length of stay, coordination and continuity of care. Meanwhile, organizational culture, professional hierarchy, and gaps in research concerning the rural location still limit the advancement. In order to realize the full potential of continuing reforms, as Alrasheeday et al. (2024) observe, it will be necessary to do more than just present technical solutions to the issue and apply them in practice, but also make specific efforts in terms of tackling equity and context. The lack of specific measures to target underserved areas and considering human factors makes it possible that workflow streamlining can serve to the advantage of only a few facilities instead of the system in general.

CONCLUSION

The ability to optimize patient journeys within Saudi primary health care is based on the efficacy of interprofessional workflows throughout all care phases that include the first-word triage and assessment, treatment, referral, and discharging. It is proven that in the case of nurses, physicians, allied health professionals, and administrative staff operating under the well-defined and coordinated processes, patient flow will become more efficient, and delays will be minimized. Redesigning workflows, like structured case management, standardized triage protocols, and digital integration, have shown significant decreases in the length of stay and continuity of care improvement, which means the practical importance of workflow redesign instead of clinical specific solutions.

In the setting of the Vision 2030 and the Health Sector Transformation Program, these findings highlight the necessity of change on a system level instead of gradual changes. The continued obstacles such as professional hierarchy, unequal digital capacity and rural-urban differences remain in the way of the fair influence of reforms. To resolve such problems, it is important to make long-term investments in interprofessional education, leadership, and standardized care paths that are flexible across different settings. In general, the available evidence indicates that patient journey optimization is possible though it can be successful only when the aims set in policies are matched by the daily practice of all levels of the health system.

RECOMMENDATIONS

In order to enhance patient journeys in Saudi primary health care, a number of evidence based suggestions come out of the literature reviewed. First, triage procedures must be standardized both in PHC and point of entry facilities in order to minimize the difference in urgency assessment and waiting periods. Training and monitoring of tools like CTAS should be consistent to enhance patient safety and reliability (Alhaqbani et al., 2022). Second, it is highly suggested to expand the use of case management models. Case management has been found

to be effective in reducing length of stay and enhancing continuity, especially in the case of patients with complex or chronic needs (Al Harbi et al., 2024).

Third, digital tools ought to be extended and more significantly facilitate the continuum of care. There are evident advantages of electronic triage systems, shared electronic health records, and telehealth services to enhance the flow, aid decision making, and provide specialists input to underserved regions (Al Mutairi et al., 2020). Fourth, interprofessional education is to be improved to overcome the communication barriers and hierarchical concerns. Roles of discipline, mutual respect, and collaborative practice may be enhanced through joint training programs (Algethami et al., 2024). Last but not the least, specifically designed measures are required to overcome rural and peripheral gaps in staffing, infrastructure and research focus. Unless there is a conscious investment in these environments, it is possible that workflow optimization is only going to propagate the inequities that already exist instead of providing system wide improvement (Albarrati et al., 2024).

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