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FROM DIAGNOSIS TO RECOVERY: THE PATIENT JOURNEY AND THE ROLE OF ALL HEALTHCARE DISCIPLINES

Yasir Mofareh Alonaydhil¹, Muteb Majed Fahad Albaqami², Mohammed Mubarak f Alkahtani³, Faraj Hamoud Faraj Alqahtani⁴, Abdullah Mahmes A Alkhatni⁵, Khaled Ahmed Mohammed Hazazi⁶, Hani Hamed Ayed Alyahiwi⁷, Abdulaziz Mahal Rakkad Alanazi⁸, Faisal Bader m Alruwaily⁹, Abdulrahman Rashid Alanazi¹⁰, Meshal Faihan Ateeq Alharbi¹¹, Mohammed Ali Rashed Al-Harbi¹², Omair Jazi Amer Alnefaie¹³, Nasser Mansour Alarjani¹⁴

¹Emergency Medical Services

²Emergency Medical Services

³Emergency Medical Services

⁴Medical Device Technician

⁵Paramedic Technician

⁶Medical Assistant

⁷BIOMED TECHNICIAN

⁸Technician-Emergency Medical Services

⁹Psychologist

¹⁰Pharmacy Technician

¹¹Paramedic Technician

¹²Paramedic Technician

¹³Medical Assistant

¹⁴Health Assistant

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ABSTRACT

The patient journey – spanning the moment of first clinical encounter through diagnosis, active treatment, and eventual recovery or rehabilitation – represents one of the most consequential and complex sequences of coordinated human activity in any healthcare system. Achieving excellence at every stage of this journey demands not the isolated brilliance of individual professionals, but the synchronized contributions of a diverse ensemble of healthcare disciplines, each deploying specialized expertise in service of a unified therapeutic objective. This paper maps the patient journey across its principal phases and systematically examines the roles, responsibilities, and collaborative interfaces of all major healthcare disciplines – including medicine, nursing, clinical pharmacy, medical laboratory science, radiology, physiotherapy, nutrition, social work, and emergency medical services – at each stage. Drawing on current evidence, international best practice, and the regulatory and policy context of the Kingdom of Saudi Arabia under Vision 2030, the paper argues that patient outcomes are fundamentally determined not by the quality of any single discipline's contribution, but by the quality of integration across the entire disciplinary ensemble. A phase-aligned Collaborative Care Continuum (CCC) model is proposed as a structural framework for operationalizing disciplinary integration throughout the patient journey. Policy implications for SCFHS curriculum reform, CBAHI accreditation standards, and Nphies digital health infrastructure are discussed.

KEYWORDS: Patient Journey, Care Continuum, Healthcare Disciplines, Diagnosis, Recovery, Interprofessional Collaboration, Vision 2030, SCFHS, CBAHI, Saudi Arabia.

1. INTRODUCTION

The concept of the patient journey has emerged as a foundational organizing principle in contemporary healthcare quality improvement and service design. Rather than viewing clinical care as a collection of discrete, discipline-specific interventions, the patient journey framework positions the patient's lived experience of illness, diagnosis, treatment, and recovery as the central narrative through which the performance of all contributing healthcare functions must be evaluated and coordinated.

This perspective reveals a fundamental truth that fragmented, siloed clinical practice systematically obscures: the patient does not experience healthcare as separate medical encounters with separate professionals in separate departments. The patient experiences a single, continuous journey – and the quality of that journey is determined by how seamlessly each transitional handover, each exchange of clinical information, and each shift in professional responsibility is managed across the disciplines involved in their care.

The stakes of this integration challenge are significant. Evidence from patient safety research consistently demonstrates that adverse events cluster not within disciplines, but at the interfaces between them: during ward transfers, shift handovers, referral processes, and discharge transitions (Reason,

2000; Vincent *et al.*, 2001). It is at these disciplinary boundaries that information is lost, assumptions are made, and continuity is fractured – with potentially life-altering consequences for the patient.

This paper maps the patient journey through its principal phases and examines, at each stage, the specific contributions of all major healthcare disciplines and the collaborative interfaces through which those contributions must be integrated. The analysis is contextualized within the Kingdom of Saudi Arabia, where Vision 2030's Health Sector Transformation Program is driving simultaneous improvements in quality, efficiency, and workforce capability that make disciplinary integration both an immediate clinical priority and a long-term strategic investment.

2. MAPPING THE PATIENT JOURNEY: A PHASE FRAMEWORK

For analytical clarity, the patient journey may be conceptualized as comprising seven interconnected phases, each characterized by distinct clinical objectives, primary disciplinary actors, and critical collaborative interfaces. These phases are not rigidly sequential – in complex or chronic cases they overlap, iterate, and cycle – but their delineation provides a useful scaffold for understanding disciplinary integration requirements.

Table 1: Phase

PhPhasease	Primary Objective	Lead Disciplines	Critical Interface
Phase 1: Pre-hospital & First Contact	Stabilization, triage, initial assessment	Emergency Medical Services (SRCA), Emergency Nursing	EMS → Emergency Department handover
Phase 2: Diagnosis & Investigation	Accurate, timely diagnosis	Medicine, Medical Laboratory, Radiology	Clinician → Laboratory → Radiologist communication
Phase 3: Treatment Planning	Evidence-based, personalized care plan	Medicine, Pharmacy, Nursing, Nutrition	Multidisciplinary team conference
Phase 4: Active Treatment	Therapeutic intervention delivery	All disciplines concurrently	Real-time communication and coordination
Phase 5: Monitoring & Adjustment	Response assessment, complication prevention	Nursing, Pharmacy, Laboratory, Medicine	Continuous data integration and escalation
Phase 6: Rehabilitation & Recovery	Functional restoration, self-management support	Physiotherapy, Occupational Therapy, Psychology, Nutrition	Rehab team coordination and patient engagement
Phase 7: Discharge & Continuity	Safe transition to community or ongoing care	Social Work, Primary Care, Pharmacy, Nursing	Hospital → Community care handover

3. PHASE 1 – PRE-HOSPITAL AND FIRST CONTACT

3.1 The Emergency Medical Services Gateway

For a substantial proportion of patients, the healthcare journey begins not within hospital walls

but in the community, where emergency medical services represent the first professional encounter. In the Kingdom of Saudi Arabia, the Saudi Red Crescent Authority (SRCA) deploys paramedic teams as the primary pre-hospital response force. These professionals perform the critical functions of scene assessment, patient stabilization, vital sign acquisition, initial pharmacological intervention, and – crucially – clinical information collection that will condition all subsequent in-hospital decision-making.

The quality of the pre-hospital clinical record is frequently underestimated as a determinant of downstream diagnostic and therapeutic accuracy. Paramedic-documented vital sign trends, mechanism of injury details, witness accounts of acute events such as seizures or cardiac arrests, and initial Glasgow Coma Scale assessments constitute irreplaceable clinical data that cannot be retrospectively reconstructed once the patient arrives in the emergency department. Systematic training in structured documentation and adoption of electronic patient care reporting tools within the SRCA are therefore not merely administrative improvements but patient safety imperatives.

3.2 The EMS-to-Emergency Department Interface

The handover from pre-hospital to in-hospital care represents one of the highest-risk transitions in the entire patient journey. Time pressure, environmental noise, team unfamiliarity, and information asymmetry between paramedic and emergency nurse or physician all contribute to the vulnerability of this interface. The SBAR (Situation, Background, Assessment, Recommendation) communication tool, when systematically applied to pre-hospital to emergency department handovers, has demonstrated significant reductions in information loss and associated adverse events (Haig et al., 2006). Formalizing SBAR as a standard handover protocol across Saudi emergency services and emergency departments represents a high-leverage, low-cost safety intervention.

4. PHASE 2 – DIAGNOSIS AND INVESTIGATION

4.1 The Diagnostic Team

Accurate and timely diagnosis is the pivotal gateway through which the patient journey transitions from uncertainty to directed treatment. Far from being a purely medical function, diagnosis in contemporary clinical practice is inherently a

collaborative achievement. The physician's clinical reasoning – integrating history, examination findings, and pretest probability – is inseparably dependent upon the analytical outputs of the medical laboratory scientist and the imaging interpretation of the radiologist.

4.2 Medical Laboratory Science: The Diagnostic Engine

Medical laboratory scientists generate the biological data upon which the majority of clinical diagnoses are confirmed or excluded. Haematology, biochemistry, microbiology, histopathology, immunology, and molecular diagnostics each contribute unique diagnostic insights that no clinical examination can replicate. The quality of laboratory output is determined not only by analytical accuracy – the precision and reliability of the assay itself – but by pre-analytical factors including specimen collection, transport, and processing; and post-analytical factors including result communication, critical value notification, and interpretive consultation.

The laboratory-clinician interface is most consequential when time is critical. In sepsis management, for example, the interval between blood culture collection, organism identification, and sensitivity reporting directly determines antibiotic optimization timelines and, consequently, patient survival (Kumar et al., 2006). Integrating laboratory scientists into clinical rounds, establishing direct consultation channels, and implementing automated critical value notification systems – enabled by the Nphies national health information exchange platform – are evidence-based strategies for compressing diagnostic delay.

4.3 Radiology: Visual Diagnosis

Radiologists and radiographers collaborate with clinical teams to generate anatomical and functional diagnostic intelligence that is unavailable to non-imaging methods. From plain radiography to computed tomography, magnetic resonance imaging, nuclear medicine, and interventional radiology, the imaging disciplines extend the diagnostic gaze into dimensions inaccessible to physical examination. The quality of the radiologist's contribution is amplified by access to rich clinical context: a radiologist who understands the clinical question being asked, the pre-test probability of specific diagnoses, and the patient's clinical trajectory generates more clinically useful reports than one interpreting images in contextual isolation. Structured reporting templates, co-developed by

radiologists and referring clinicians, represent an institutional investment in this collaborative interface.

5. PHASE 3 – TREATMENT PLANNING

5.1 *The Multidisciplinary Team Conference*

The transition from diagnosis to treatment planning represents the moment at which interprofessional collaboration becomes most visibly and explicitly structured. The multidisciplinary team (MDT) conference – convening the physician, nurse, clinical pharmacist, dietitian, social worker, and relevant specialists around a shared clinical formulation – is the institutional mechanism through which the patient's complexity is translated into a coordinated, personalized care plan that no single discipline could generate alone.

Evidence from oncology, cardiology, stroke, and intensive care settings consistently demonstrates that MDT-derived treatment plans differ meaningfully from those generated through unidisciplinary consultation, with differences most frequently emerging in medication selection, nutritional intervention, rehabilitation planning, and social support coordination (Taylor et al., 2010). The MDT conference is therefore not a bureaucratic formality but a clinical process with demonstrable impact on the appropriateness and comprehensiveness of patient care.

5.2 *Clinical Pharmacy in Treatment Planning*

The clinical pharmacist's contribution to the treatment planning phase encompasses medication reconciliation – identifying and resolving discrepancies between pre-admission medications and proposed treatment regimens – drug interaction screening, renal and hepatic dose adjustment calculations, and antimicrobial stewardship recommendations. In the Saudi healthcare context, where SFDA pharmaceutical regulations govern prescribing practice and NUPCO manages national pharmaceutical procurement, the pharmacist serves as the critical bridge between regulatory compliance and individualized patient care. The pharmacist's participation in MDT conferences has been demonstrated to reduce prescribing errors, optimize drug selection, and generate cost savings without compromising therapeutic efficacy (Kaboli et al., 2006).

5.3 *Nutrition in Treatment Planning*

Malnutrition is prevalent among hospitalized patients across all diagnostic categories and is independently associated with prolonged length of

stay, impaired wound healing, increased infection susceptibility, and higher mortality (Stratton et al., 2003). Nutritional assessment at the treatment planning stage – using validated tools such as the Malnutrition Universal Screening Tool (MUST) or the Nutritional Risk Screening (NRS-2002) – identifies patients requiring targeted nutritional intervention. The dietitian's integration into the MDT conference ensures that nutritional requirements are incorporated into the treatment plan from its inception rather than addressed reactively when complications arise.

6. PHASE 4 – ACTIVE TREATMENT

6.1 *The Nursing Axis of Continuous Care*

Nurses constitute the continuous clinical presence throughout the active treatment phase – present at the bedside across all shifts, across all days of admission, in a manner that no other healthcare discipline replicates. This continuous presence positions nursing as the primary monitor, safety net, and communication hub of the active treatment phase. The nurse's observational function – tracking vital sign trends, identifying subtle deterioration signals, recognizing medication side effects, and maintaining awareness of the patient's psychological state – generates the real-time clinical intelligence upon which treatment adjustments are based.

The implementation of Early Warning Score (EWS) systems – standardized physiological scoring tools that trigger escalation responses when patient parameters deteriorate – represents a structured mechanism for translating nursing observation into multi-disciplinary clinical response. Saudi MOH's National Early Warning Score protocols embed the nurse's role as the primary detector and escalation initiator, affirming nursing's centrality to patient safety during the active treatment phase.

6.2 *Pharmacy During Active Treatment*

The active treatment phase is characterized by continuous pharmacotherapeutic complexity. Clinical pharmacists contributing to active treatment phases manage therapeutic drug monitoring – ensuring that drug concentrations remain within therapeutic windows; monitor for adverse drug reactions and interactions as the treatment regimen evolves; educate patients regarding their medications; and conduct regular medication reviews that identify opportunities for de-escalation, substitution, or discontinuation. In intensive care and high-dependency settings, the pharmacist's round participation has been specifically associated with reductions in adverse drug events, length of ICU

stay, and total medication costs (Leape et al., 1999).

6.3 Infection Control: A Cross-Cutting Function

Infection prevention and control (IPC) professionals — operating across the active treatment phase in all ward environments — represent a cross-cutting disciplinary function whose contribution to patient outcomes is most apparent in its absence. Healthcare-associated infections (HAIs) remain a leading source of preventable patient harm globally and within Saudi Arabia. IPC nurses and specialists, collaborating with clinical microbiologists, clinical pharmacists, and clinical teams, implement bundle-based interventions — including central line associated bloodstream infection (CLABSI) prevention bundles, catheter-associated urinary tract infection (CAUTI) reduction protocols, and surgical site infection prevention programs — that have demonstrated substantial and sustained reductions in HAI rates (Pronovost et al., 2006).

7. PHASE 5 — MONITORING AND ADJUSTMENT

The monitoring and adjustment phase is characterized by continuous clinical reassessment: evaluating the patient's response to treatment, detecting emerging complications, and modifying the care plan accordingly. This phase demands the most intensive real-time integration of information from multiple disciplinary sources — laboratory results, nursing observations, pharmacy reviews, imaging reports, and specialist consultations — into a coherent clinical picture that guides decision-making.

7.1 Laboratory Monitoring Loops

Serial laboratory investigations during the monitoring phase serve as objective biomarkers of treatment response and early complication detection. Serum creatinine trajectories signal nephrotoxicity from antibiotics or contrast agents; haemoglobin trends indicate occult bleeding or haematological toxicity; C-reactive protein or procalcitonin trends reflect inflammatory response to infection treatment. The clinical value of these investigations is maximized when laboratory scientists, clinical pharmacists, and physicians engage in structured review of serial results — identifying clinically meaningful trends that individual point-in-time values may obscure.

7.2 Escalation and Rapid Response Systems

Structured escalation systems — including Rapid Response Teams (RRT) or Medical Emergency Teams

(MET) — represent the institutional operationalization of interprofessional monitoring. When nursing assessment, supported by EWS data, identifies a deteriorating patient, the RRT activates a cross-disciplinary response that brings senior physician, specialist nurse, and pharmacist expertise to the bedside within minutes. The RRT model embeds interprofessional collaboration as the institutional response to clinical emergency — not as an optional enhancement but as a designed system feature (Devita et al., 2006).

8. PHASE 6 — REHABILITATION AND RECOVERY

8.1 Physiotherapy: Restoring Function

The transition from active treatment to rehabilitation marks a fundamental shift in the therapeutic orientation of the patient journey — from disease suppression to functional restoration. Physiotherapists lead this transition, designing and implementing individualized exercise programs, mobility protocols, and pulmonary rehabilitation regimens tailored to the patient's residual functional capacity, comorbidity profile, and recovery goals. Early mobilization — the systematic initiation of physiotherapy within 24–48 hours of admission or surgical intervention — has accumulated compelling evidence of benefit, including reductions in ICU-acquired weakness, delirium incidence, duration of mechanical ventilation, and length of stay (Morris et al., 2008).

8.2 Occupational Therapy and Psychological Support

Occupational therapists focus on restoring the patient's capacity to perform the activities of daily living that define functional independence. Their assessment — encompassing cognitive function, fine motor skills, environmental adaptation, and assistive technology requirements — generates a restoration roadmap that complements the physical mobility goals of physiotherapy. In parallel, clinical psychologists and counsellors address the psychological sequelae of serious illness: anxiety, depression, post-traumatic stress, and adjustment disorders that, if unaddressed, significantly impair physical rehabilitation outcomes and quality of life (Davydow et al., 2008).

8.3 Nutrition in Recovery

Nutritional support during the recovery phase addresses the hypermetabolic demands of tissue repair, immune reconstitution, and muscle

rebuilding. The dietitian's ongoing involvement – adjusting macronutrient and micronutrient prescriptions as the patient's clinical status evolves – is particularly consequential for patients recovering from surgery, critical illness, burns, cancer treatment, or conditions associated with profound muscle catabolism. Nutritional rehabilitation is inseparable from physical rehabilitation: patients cannot rebuild functional capacity on a substrate of nutritional deprivation.

9. PHASE 7 – DISCHARGE AND CARE CONTINUITY

9.1 *The Discharge Interface: Highest-Risk Transition*

Hospital discharge represents the most complex and highest-risk care transition in the patient journey. Research consistently identifies the post-discharge period – particularly the first 30 days following hospital discharge – as a time of heightened vulnerability to adverse events, medication errors, unplanned readmissions, and deterioration in chronic conditions (Forster et al., 2003). The factors generating this vulnerability are well understood: the patient transitions from a high-surveillance, multi-professional clinical environment to a low-surveillance home or community setting, frequently in a state of residual illness, functional limitation, and health literacy deficit.

9.2 *Medication Reconciliation at Discharge*

Discharge medication reconciliation – the systematic review and reconciliation of the patient's pre-admission medications, in-hospital changes, and discharge prescription – is one of the most evidence-supported interventions for reducing post-discharge adverse events. Clinical pharmacists leading discharge medication reconciliation processes, combined with structured patient medication education, have demonstrated reductions in medication discrepancies of 50–70% (Schnipper et al., 2006). In the Saudi context, where Nphies enables access to complete medication history across providers, pharmacist-led discharge reconciliation is a scalable, high-impact safety intervention.

9.3 *Social Work and Community Continuity*

Medical social workers play an irreplaceable role in ensuring that discharge plans are matched to patients' actual social circumstances – family support availability, home environment accessibility, financial capacity, and community care service access. For elderly patients, those with disabilities,

and patients requiring ongoing rehabilitation, the social worker's community network knowledge and care coordination skills are as clinically consequential as any pharmacological or procedural intervention. Without adequate social work involvement in discharge planning, clinically excellent in-hospital care is systematically undermined by preventable post-discharge deterioration.

9.4 *Primary Care and Outpatient Follow-Up*

The hospital-to-primary care interface constitutes the final major disciplinary handover of the acute patient journey. The quality of the discharge summary – its completeness, timeliness, and clinical specificity – directly determines the capacity of primary care physicians to provide safe, informed follow-up. Structured discharge summaries, generated through multidisciplinary contribution and electronically transmitted to primary care providers via Nphies, represent the informational infrastructure of care continuity.

10. THE COLLABORATIVE CARE CONTINUUM (CCC) MODEL

Drawing on the phase-specific analysis presented in preceding sections, this paper proposes the Collaborative Care Continuum (CCC) model as a structural framework for operationalizing disciplinary integration throughout the patient journey. The CCC model is built upon five design principles:

1.Phase-Aligned Role Activation: Each discipline's contribution should be explicitly activated at the phase of the patient journey where its impact is greatest. Role activation protocols, embedded in clinical information systems, ensure that no disciplinary contribution is delayed, omitted, or duplicated.

2.Interface-Specific Communication Protocols: Every major disciplinary interface in the patient journey – EMS-to-ED, diagnosis-to-treatment planning, treatment-to-monitoring, active treatment-to-rehabilitation, hospital-to-community – should have a standardized communication protocol (SBAR, structured handover, electronic discharge summary) that minimizes information loss at transitions.

3.Patient as Active Collaborator: The patient and, where appropriate, their family must be understood as active participants in the care team at every phase, not passive recipients of professional decisions. Shared decision-making, health literacy support, and culturally sensitive communication – particularly important in the Saudi cultural context – are not peripheral enhancements but core clinical functions.

4.Digital Integration Through Nphies: The Nphies platform, as the national health information exchange infrastructure, should be configured to support real-time, role-appropriate data access across all disciplines at every phase of the patient journey, enabling the distributed cognition upon which collaborative excellence depends.

5.Continuous Outcome Evaluation: Each phase of the patient journey should generate measurable outcome data – diagnostic accuracy rates, time-to-treatment intervals, medication error rates, rehabilitation milestones, readmission rates – that feed back into continuous quality improvement cycles aligned with CBAHI accreditation standards and Vision 2030 health performance indicators.

2. 11. VISION 2030 AND THE PATIENT JOURNEY: STRATEGIC IMPLICATIONS

Saudi Vision 2030's health transformation agenda is fundamentally a journey transformation agenda: it aims to shift the patient experience from one of fragmented, reactive, institution-centric care to one of integrated, preventive, patient-centric care. The seven-phase patient journey framework and the CCC model proposed in this paper are structurally aligned with this ambition across four strategic dimensions:

◆**Prevention Integration:** Phase 1 (pre-hospital) and Phase 7 (discharge and community continuity) are the primary touchpoints for preventive intervention. Embedding preventive counselling, chronic disease screening, and risk factor modification into these phases – through collaborative action by emergency medical services, social workers, dietitians, and primary care physicians – directly advances Vision 2030's prevention objectives.

◆**Quality and Safety:** The CCC model's emphasis on interface-specific communication protocols and phase-aligned outcome measurement directly supports CBAHI accreditation requirements and contributes to Vision 2030's quality indicator targets, including reductions in hospital-acquired complications, medication errors, and unplanned readmissions.

◆**Digital Transformation:** The CCC model's Nphies integration principle aligns directly with Vision 2030's digital health strategy, which positions electronic health information exchange as a foundational enabler of integrated, efficient, and high-quality care across the patient journey continuum.

◆**Workforce Excellence:** The SCFHS's evolving competency frameworks for all health professions

must incorporate patient journey orientation and interprofessional collaboration competencies as core professional standards. Healthcare professionals who understand their role within the full patient journey context – not merely their disciplinary segment of it – are better equipped to deliver the seamless, integrated care that Vision 2030 demands.

12. DISCUSSION

The patient journey framework reveals a profound structural insight that discipline-centric analysis systematically obscures: the quality of patient outcomes is determined more by the quality of integration across disciplinary interfaces than by the quality of any individual discipline's contribution. The most technically proficient surgeon cannot compensate for inadequate pre-operative laboratory assessment; the most skilled clinical pharmacist cannot correct the therapeutic consequences of a poorly communicated discharge medication plan; the most dedicated physiotherapist cannot restore function in a patient who is simultaneously malnourished and psychologically disengaged from rehabilitation.

This insight has radical implications for how healthcare institutions invest in quality improvement. Incremental, discipline-specific training programs and quality metrics that assess each profession in isolation are necessary but insufficient responses to the integration challenge. Institutional quality improvement strategies must be reoriented toward the interfaces: the handover moments, communication protocols, shared decision-making processes, and information exchange mechanisms that determine whether disciplinary excellence translates into patient outcome excellence.

For Saudi healthcare institutions, the simultaneous pressures of Vision 2030 transformation, CBAHI accreditation, workforce Saudization, and Nphies implementation create a unique window of opportunity for patient journey redesign. These structural changes require new process designs, new information architectures, and new professional competencies – all of which can be configured, from their inception, to optimize disciplinary integration across every phase of the patient journey.

The CCC model proposed in this paper provides a phase-structured, interface-specific framework for this redesign.

It does not propose the addition of new resources or disciplines to the Saudi health system, but the deliberate reorganization of existing disciplinary

contributions into a more coherent, coordinated, and patient-centered sequence that maximizes the collective clinical intelligence available to each patient at each stage of their journey.

13. CONCLUSION

The patient journey — from the moment of pre-hospital emergency response through diagnosis, treatment, monitoring, rehabilitation, and community reintegration — constitutes the most consequential sequence of collaborative action in modern healthcare. At every phase of this journey, the patient's outcomes depend upon the quality of information exchange, role coordination, and shared decision-making among a diverse ensemble of healthcare professionals whose individual contributions are inseparably interdependent.

This paper has mapped the patient journey across seven phases, examined the specific disciplinary contributions and collaborative interfaces critical to

each phase, and proposed the Collaborative Care Continuum model as a practical framework for operationalizing integration. The analysis consistently affirms a central finding: no phase of the patient journey is the exclusive domain of a single discipline; every phase is a collaborative achievement — or a collaborative failure.

For the Kingdom of Saudi Arabia, advancing phase-aligned disciplinary integration throughout the patient journey is simultaneously the most clinically impactful and most strategically aligned quality improvement investment available. It demands educational reform through SCFHS, structural redesign through CBAHI-aligned accreditation processes, digital enablement through Nphies, and the genuine commitment of clinical leaders to a culture in which the patient's seamless journey — from first contact to final recovery — is understood as the shared responsibility and shared achievement of every discipline involved

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