



Care Coordination

A golden thread to transform healthcare



pwc



Introduction

The GCC today is widely regarded as a “moonshot” region, fuelled by rapid transformation and guided by ambitious national visions. To accelerate innovation and support the health of future generations, governments across our region are prioritising accessible, affordable, and high-quality healthcare services as part of their national agendas.

Healthcare transformation in the region is driving sustainable solutions to future-proof nations, creating healthcare models that are preventive and tailored for the patient, lessening the economic burden of healthcare costs through population health programmes, expanding the nation’s digital health footprint, and advancing targeted therapies towards rare and chronic diseases.

In healthcare, traditional organisational structures with siloed operating models lead to higher costs, suboptimal patient outcomes and a lack of value. Care coordination provides an opportunity to offer clarity and order within the healthcare ecosystem. It is a requirement for any health system that is on the journey towards achieving a sustainable, value-based future through the Quadruple Aim¹ of:

01

Improved patient experience



02

Better outcomes



03

Improved clinical experience



04

Lower costs



The benefits and opportunities of effective and at-scale care coordination are experienced by multiple stakeholders within the health ecosystem including regulators, providers, payers, healthcare professionals and patients.

Adopting and implementing effective care coordination can support and enhance healthcare transformation strategies and programmes, including payment reforms, models of care, population health management, patient-centric care, and precision medicine.

This is ultimately underpinned by technology, as digital solutions are required to provide timely, sufficient, accurate data to those involved in delivering care and support the transition from care coordination to care orchestration.

What do we mean by care coordination

Care coordination is intentionally and constructively organising a patient's care activities to offer the best outcomes at appropriate costs. The World Health Organisation (WHO) defines care coordination as a proactive approach to bringing together care coordination and providers to meet the needs of service users or patients to ensure that they receive integrated, person-focused care across various settings².

Care coordination is an essential enabler for any healthcare system to achieve a sustainable, patient-centric, and value-based future. Despite this, there is often an isolated focus on each component of the healthcare delivery models, strategies and programmes; each developed with good intention and stand-alone results, but without offering the maximum opportunity for patients and the health system as a whole, primarily due to poor coordination of the patient care between different healthcare providers.

As the health system shifts from the traditional “fee-for-service” model to “value-based” payments, there is an increased interest in reshaping the way care is delivered, and keeping people as healthy as possible, with a focus on sub-groups of populations living with complex and chronic health conditions.

The ideal dynamic to deliver value-based care is an improvement in outcomes, while at the same time reducing costs. Effective care coordination supports both these drivers of value.

The growing need for care coordination

Models of care coordination are not new. The principles of the “medical home,” which included aspects of care coordination, were first proposed by the American Academy of Pediatrics in 1967 for the care of special needs children³. The chronic care model has been developed and tested over the past 15 years. Since the 1980s, studies such as the Programme of All-Inclusive Care for the Elderly have provided important lessons about linking medical and social models to achieve care coordination⁴.

With the increase in the burden of non-communicable diseases (NCDs) and the ageing population, the focus on care coordination has intensified. WHO reported that the increasing toll of NCDs meant that if the trend were to continue, by around 2050 chronic diseases such as cardiovascular diseases, cancer, diabetes and respiratory illnesses would account for 86% of the 90 million deaths each year: a staggering 90% increase in absolute numbers, since 2019⁵.

In the USA, 27% of American adults have two or more chronic diseases⁶ while in the GCC the burden of noncommunicable diseases has increased exponentially over the last five decades. In the UAE, chronic diseases are the leading cause of mortality and economic burden of health⁷.

Once diagnosed, people with NCDs require continuous care over the long term and implementation of an integrated approach such as care coordination has grown to demonstrate improvement in the management of NCDs⁸.

When appropriately implemented, the care coordination programmes can offset pressure on institutionalised care, optimise healthcare system costs, and promote ageing in place^{9,10}.



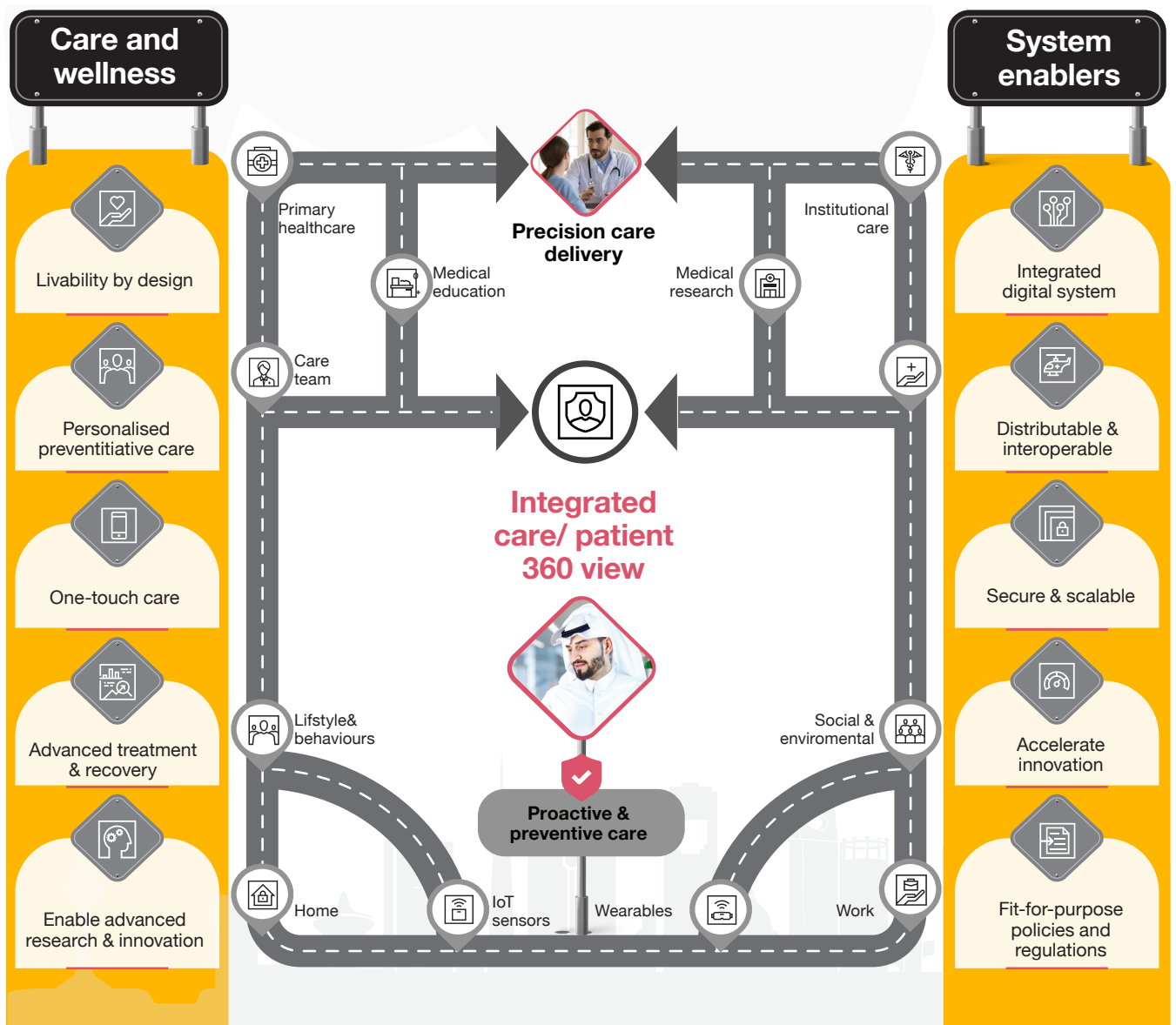
Core concept and components

Healthcare is becoming increasingly complex and fragmented, as more healthcare organisations prefer to operate within independent silos because of funding conflicts, laws and guidelines, and different specialisations. Fragmented care can lead to inequities in healthcare, negatively affecting patients and health systems and posing a threat to public and economic health. Care coordination is an opportunity to offer clarity and order within this ecosystem.

Various comprehensive care models have been piloted for patients with chronic care conditions, who are high users of the health system¹¹. The care models with evidence of positive impact on patient quality of life (QoL) and cost share common traits, such as:

- Comprehensive assessment of the patient’s health, including both physical and cognitive resources and preferences.
- Co-development of an evidence-based care plan with patients and caregivers.
- Active engagement of patients and caregivers in self-care.
- Orchestrating patient transition and communication among all professionals.

Healthcare ecosystems are complex and care coordination is required to align them to the central needs of the individual patient



Aligning care coordination with the Quadruple Aim



1. Lower costs

Higher levels of care coordination are linked to lower costs. These cost reductions are generated by multiple factors such as lower hospital admissions,¹² and lower emergency department use¹³, among others. JAMA estimated the cost of the total failures in care coordination account for \$27.2 billion to \$78.2 billion per year in the USA alone¹⁴.

As we will explore later, technology adoption in care coordination is key to drive cost savings and reduce utilisation of services through early stage interventions. It is critical to evaluate and adopt key technologies to support a comprehensive and coordinated care model for patients with chronic conditions (such as type 1 diabetes or respiratory conditions) where predictive models and analytics can identify risks and trigger early-stage interventions to avoid frequent and unnecessary hospitalisation and re-admissions. Technology investments in care coordination can improve health system efficiency and respond to patient needs, thereby reducing the burden of healthcare.¹⁵



2. Improved outcomes: PROMS and PREMS

Patient-reported measures, including Patient Reported Outcomes (PROMS) and Patient Reported Experience (PREMS), can be enhanced by effective care coordination. But equally, the reverse is also true that PROMS data can improve care coordination as demonstrated in health systems such as the University of Pittsburgh Medical Center (UPMC). In the UPMC model, through utilisation of multidisciplinary care coordination, the readmission and emergency department visits for the elderly were shown to drop significantly¹⁶. Other outcome metrics include technical or clinical care outcomes, such as monitoring HbA1C levels and post operative infection rates, often considered higher quality care.

Evidence shows that patients who received higher levels of care coordination report higher levels of satisfaction and perceived outcomes; these patients said improvements are supported by higher Healthcare Effectiveness Data and Information Set (HEDIS) scores¹⁷.



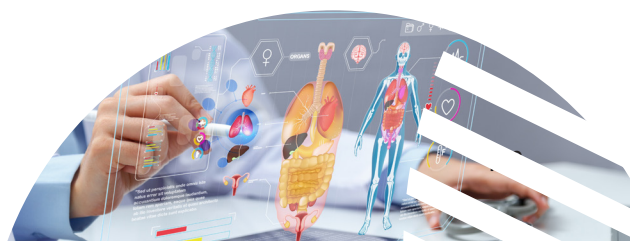
3. Improved patient satisfaction

At the heart of patient experience lies care coordination, particularly in those patients with chronic diseases. When care professionals work well together to meet the needs and personal goals of people for whom they care and support, providers have greater evidence of patient satisfaction with their services¹⁸. Corresponding improvements in patient experience aligned with higher levels of care coordination are also seen in primary care settings¹⁹.



4. Improved health professional wellbeing

Healthcare team burnout is a global problem, and evidence shows that stress and burnout are reduced in primary care teams that operate in a system of well coordinated care. Primary care physicians were more likely to be burned out overall if they reported more than average challenges with coordinating care for their patients²⁰.



Overcoming the challenges to achieve care coordination

Despite clear benefits in both outcomes and costs, care coordination is not being implemented consistently across health systems and providers. The key challenges include:

- **Traditional organisational structures and operating models hinder effective care coordination²¹.** Poorly designed care coordination programmes lack training and implementation support, including proper leadership, properly defined roles and responsibilities, accountability, and resource allocation²².



- **Lack of interoperability of health information systems (HIS) and electronic medical records.** Globally, a lack of interoperability has reduced the opportunity to deliver coordinated care, leading to waste, reduced quality and safety and increased costs. Sub-optimal utilisation of data, due to poor quality, low volume, and insufficient data, limits the insight to inform the system and the patient. Data must effectively be shared or utilised to derive critical insights and opportunities²³.



- **Overwhelmed healthcare professionals who are disease-focused, embedded in a traditional medical model of care from their previous experience and training, and hindered by technology.**

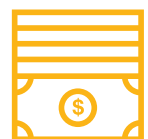
Cultural and communication challenges between primary care and specialist services and between physicians and other care coordination team members are common²⁴, contributing to a lack of clarity on ownership and agreement on who is responsible for coordinating and sharing quality information through effective communication channels²⁵.



- **A lack of patient-centric care created by health systems continuing to adopt generic, inflexible approaches to care without a focus on the patient.** Not understanding the patient's requirements and developing management plans to meet patients' needs damages the ability to deliver the benefits of coordinated care. Despite positive intentions, such as the UK NHS mandate where each person with a long-term condition would be involved in a personalised care planning process²⁶, the progress towards care coordination has been slow, with relatively few patients experiencing proactive, well-coordinated, systematic support²⁷.



- **Payment systems that do not incentivise coordinated care.** Fee-for-service reimbursement models that do not focus on the patient or outcomes continue to be widespread. The New England Journal of Medicine cited fee for service as the most significant barrier preventing complex care management (CCM) in the healthcare industry²⁸.



Technology: supercharging the journey from care coordination to care orchestration

The current lack of interoperability and information exchange across existing healthcare infrastructures creates significant challenges when faced with the requirement for information to follow the patient throughout their care journey. Driving technological change and transformation will, therefore, offer significant opportunities to enable and empower improved care coordination.

The care coordination information technology market has been estimated at \$12.6B in 2021 with a growth rate of 11.4% towards a value of \$21.6B by 2026.²⁹ Technology will be required to give timely, sufficient, accurate data available to all while supporting clear and inclusive communication to reduce the risks of transitions of care. This will provide actionable insight to all involved in the care, and along with assistive technology and care coordination tools offer solutions and opportunities to improve the success and impact of care coordination.

Technology can also allow the move from care coordination to care orchestration through the design and delivery of orchestration platforms. These care orchestration platforms offer a technology solution to the disparate, non-personalised, non-integrated systems in most of healthcare today.

Specifically, technology will enable:

► Automation

Automate to reduce the administrative burden of healthcare professionals and patients and improve reliability.

► Unification

Bring together the multiple pieces of the care management puzzle to one unified approach, reducing waste, improving the flow of information and allowing actionable insight for all.

► Personalisation

Know what is best for each participant in the coordination programme, understand differences and ensure each participant has the best design and delivery for their needs and situation.

► Prioritisation

Use all available data to understand the risks and which situations to prioritise, to ensure resources are best utilised and any risks identified and managed early to reduce their impact on patients and the system.

Care Coordination: digital considerations



Reimagining healthcare: the GCC in focus

The Gulf Cooperation Council (GCC) countries are reimagining their healthcare sectors through the introduction of mandatory health insurance, action-driven and meaningful public-private partnerships, and an ongoing infrastructure boom resulting in high healthcare spending, especially in the United Arab Emirates (UAE) and Kingdom of Saudi Arabia (KSA).

By championing large-scale population health programmes, advancing targeted therapies towards chronic diseases, taking timely decisions based on AI technologies and big data, governments in this region are aiming to offer cost-effective methods of diagnosing and treating diseases, thereby enabling health systems to implement better and cost-effective health strategies.

As these countries shift to an outcome-based payment, and patient-centric models of care, they are well positioned to adapt care coordination as a key component in their healthcare strategy.

KSA



KSA's **Health Sector Transformation Programme** is one of the catalysts to **Vision 2030**. It aims to restructure Saudi's healthcare system into a comprehensive and integrated health system based on the individual's health³⁰. The transformation programme, which includes a value-based care model, population health management, patient centricity and the need to harmonise and coordinate between all health sector entities, resonates with the requirements for high-impact care coordination.

UAE



The 2022 Open Data Watch shows that the UAE has earned the second global and top regional spot in the Health Outcomes Index³¹. UAE's **National Strategy for Wellbeing 2031** aims to make the UAE a world leader in quality of life based on a national framework of individuals, society, and the country. It includes 14 components and nine strategic objectives of enhancing people's wellbeing by promoting healthy and active lifestyles, promoting good mental health, and adopting positive thinking. A flourishing healthcare model will require care coordinators to support a holistic approach to improve the health and wellbeing of individuals.

Qatar



The **Qatar National Vision 2030** aims to improve the quality of life for citizens and residents by focusing on human, social, environmental, and economic developments. Specifically, under the human development pillar, the country is inspired to implement an integrated healthcare system while bearing the costs. Care coordination offers personalised physical and mental care for preventive and curative healthcare³².

Oman



The **Oman Vision 2040** and **Health Vision 2050** align the ambitious transformation of the health system with a health insurance scheme to promote healthy living and reduce the burden of diseases. With an increased focus on primary health care and investment in health promotion and inter-sectoral collaboration, Oman's healthcare planning can decrease the need for expensive tertiary and quaternary care establishments³³. Integrating care coordination within primary care settings can ensure a future sustainable health system for Oman.

Bahrain



The **Bahrain Economic Vision 2030** aims to utilise technology and health system improvements to reduce the burden of chronic diseases on the population and allow for financial sustainability within the health ecosystem³⁴. Implementing the **National Health Information System** (I-Seha) provides a unique opportunity for the country to adopt care coordination and enhance community partnerships.

Care coordination: supporting national transformation

The various national visions, strategies, and programmes in progress across the GCC are catalysing the rapid transformation of our region. Crucially, these national ambitions require innovation and improvement within the healthcare systems to allow for a financially sustainable future with improved health and longevity for citizens and residents.

Across the GCC there are common themes to empower and enable this transformation, and all are impacted by the level of care coordination that supports them. These include:

► Value-based care

Care coordination has been demonstrated to support both improvement in outcome and reduction in cost enabling improved value within the system. A study by the Institute of Medicine estimates care coordination efforts could save as much as \$240 billion annually³⁵. Quality metrics such as 30 day hospital readmission rates have been demonstrated to be significantly improved by effective care coordination³⁶.

► Payment reforms

Care coordination supports the transition from fee-for-service to alternative, outcome-focused payment models, including bundle-based payments, diagnosis-related groups, and payment for performance. A change in payment towards outcome and value drives the need for greater care coordination through a reciprocal relationship. Payment reform options increase investment in care coordination efforts³⁷, and increasingly private and government payers are incentivising care coordination efforts through such payment methods.

► Population health management

Care coordination is fundamental to chronic disease management and addressing the burden of high-risk populations and segments. Through the identification, segmentation, and understanding of a population, insight will drive interventions and these interventions will demand the support of high-quality care coordination to succeed.

► Models of care

Care coordination supports models of care across the spectrum, allowing smooth transitions and maximising outcomes. For example, the model of care adopted by KSA consists of six components:

Keep Well	Planned Care	Safe Birth
Urgent Care	Chronic Care	Palliative Care

Each of these demand pathways and patient journeys intersect multiple aspects of the health ecosystem, and will require effective coordination to allow them to deliver their planned outcomes.

► Patient-centric care

Care coordination ensures a focus on the patient, their journey and their requirements and objectives. Patient-centric care coordination has been shown to improve outcomes and patient satisfaction, and ensures the patient is considered as a whole person in a time and place rather than as a disease or intervention, as is common in current medical practice³⁸. To succeed in chronic disease management, a greater focus on the patient and their care is required³⁹.

► Personalised medicine

Care coordination will be required to support the multiple variations in care and management pathways that will emerge through the advent of personalised medicine. As healthcare improves its ability to determine which treatment and management options, including targeted therapies, work best for individuals based on genetics and other molecular diagnostic factors, the complexity of care increases significantly. Care coordination is a fundamental part of precision medicine and will be required from the beginning to ensure its success⁴⁰.

It's time to take action: recommendations and next steps

The GCC is progressing through ambitious and world-leading programmes of health transformation. Throughout these transformative journeys, multiple opportunities exist to design, implement, and deliver care coordination strategies that maximise the potential outcomes of change. Care coordination must be recognised as a necessary enabler that requires investment and focus to be achieved. Therefore, is it important to:

► Be strategic:

- Whenever healthcare strategies are being considered or designed, be aware of the impact of care coordination in the implementation and delivery.
- Consider key partnerships and agree on the necessity of coordinated pathways and models of care to deliver the required outcomes.
- Understand the entire patient journey, focus on ease of access, reducing the friction of points of care transition and collaboration and coordination of clinical and operational services.

► Be outcome focussed:

- A move away from activity and towards outcomes is necessary for value and sustainability.
- Technical outcomes and Patient Reported Outcomes are both synergistically linked to quality care coordination.

► Be patient focussed:

- Have the patient at the centre of design and understand the patient's longitudinal journey through the health system.
- Design based on patient needs and preferences to support patient-centric care and care coordination that helps and allows for individual patient's needs and contexts.

► Think holistically:

- Be aware of the social determinants of health and the wider aspects of government and society that will impact care and outcomes.
- Effective care coordination requires a complete understanding of all the factors that will positively or negatively affect a patient's ability to seek and receive the best care and achieve the best outcomes.

► **Consider your workforce:**

- Ensure the right workforce is available, trained, and competent.
- Care coordination is not a natural process in healthcare, and healthcare professionals often require training and support to understand and contribute to it effectively.
- Professional care coordinators contribute to the workforce if they have the necessary skills and training and are fully embedded in the care systems. Understanding their role and place in the health system is critical to allow them to be purposeful and productive.

► **Maximise interprofessional collaboration:**

- Longitudinal patient journeys, particularly with chronic conditions and comorbidities, mean they see many healthcare professionals contributing to their care. Unfortunately, healthcare has failed to work collaboratively and designing strategies, models, and interventions to achieve this deliberately are often necessary.
- Interprofessional collaboration within care coordination has been shown to support all four components of the Quadruple Aim.
- Care coordination requires support and training in clinical leadership, understanding and developing the internal operating models of healthcare providers and systems, promoting and enabling clear communication and collaboration, and often highlighting and challenging cultural aspects of care delivery.

► **Provide team-based care using interdisciplinary care teams:**

- Team-based care supports care coordination by allowing teams to collaborate for a shared purpose and help patients in their care journeys.
- Effective team-based care aligns and maximises the efficiency and effectiveness of care coordination through deliberate structures, processes, and approaches.
- Teams require training and support to be effective.

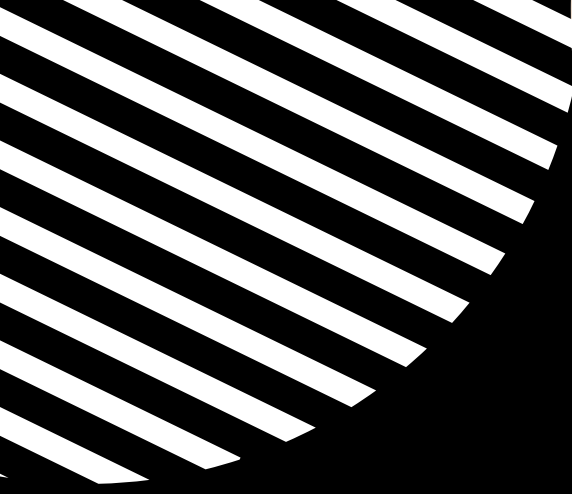
► **Provide capable primary care at scale:**

- Primary care is the foundation of effective care coordination and sustainable care systems. Quality, capable primary care at scale allows for out-of-hospital management of most chronic conditions and is at the core of the care coordination efforts.
- In the GCC, empowering primary care to deliver the care coordination requirements will require investment, culture change and upskilling to maximise this potential opportunity.

► **Invest in data insights:**

- Provide accurate data on time, and available to all involved in the care journey.
- Integrated and interoperable systems allow the sharing of data and information to ensure all necessary information is available to everyone at all times.
- Utilise data from multiple sources, including sources outside of the typical health system sets, to enrich understanding and insight. These include social determinants of health, the Internet of Things (IoT) and other data sources which contribute to and impact care and care coordination.
- Predictive and simulation technologies, including digital twins, can support modelling and ensure operational and clinical care and coordination are aligned, synergistic, and balanced.





► **Utilise technology solutions to support care coordination and care orchestration:**

- Use technology to automate care coordination activities, support patients in navigating the healthcare system, and ensure aligned communication between all involved in the care process.
- Automation of care pathways with real-time tracking with a focus on reducing the risks around transitions of care.
- Reporting capabilities to allow insight into the reliability and performance of care coordination programs and support continual improvement cycles.

► **Consider payment reforms:**

- Maximise the bidirectional benefits of care coordination and payment value as the GCC moves towards value-based care payment reforms.
- Outcomes are improved with quality care coordination and should be a focus for both clinical and patient-reported outcome activities.
- Costs are reduced with quality care coordination, so cost efficiency and cost reduction programmes will benefit if they align and promote care coordination.
- Payment reform options, including DRGs, bundled payments, and pay-for-performance, will benefit from care coordination implementation.

Care coordination is a golden thread that offers opportunities throughout healthcare transformation, but requires careful consideration and implementation. When done well, it provides a foundation for delivering the Quadruple Aim, and its benefits to health systems. Conversely, when care coordination is not properly considered and integrated into the transformation journey of a health system, it may fail to deliver the desired opportunities and required outcomes. The above steps will help on the journey to care coordination and orchestration: transforming healthcare ecosystems, and society at large, to be fit for the future.



Appendix 1:

Successful Care Coordination Models (Ref 39)

Exhibit 1. Comprehensive Care Models: Typology and Evidence of Impact

Categories	Models or Examples*	Evidence of Positive Impact**					
		QoC	QoL	FA	Surv	Use	Cost
1. Interdisciplinary primary care	Guided Care, GRACE,IMPACT,PACE	X	X	X	X	X	M
2. Enhancements to primary care	Care and case management	X	X			M	
	Disease management		X			X	
	Preventive home visits			X	X	X	
	Geriatric evaluation and management	X	X			M	
	Pharmaceutical care	X				X	
	Chronic disease self- imanament		X	X		X	
	Proactive rehabilitation		X	X			
	Cargiver education and support		X			X	
3.Transitional care	Hospital to home		X			X	X
4.Acute care in patients homes	Substitutive hospital-at- home		X			LOS	X
	Early-dischargehospital-at- home					X	
5.Team care in nursing homes	Minnesota Senior Health Options, Evercare	X				M	
6. Comprehensive care in hospitals	Prevention/managment of delirium		X			LOS	
	Comprehensive inpatient care		X	X	X		

* Examples GRACE = Geritric Resouces for Assessment and Care of Elders, IMPACT = Improving Mood: Promoting Access to Collaborative Treatment,PACE = Program of All-Inclusive Care for the Elderly.

** Impat: QoC = Quality of care, QoL = Quality of Life, FA = Functional autonomy, Surv = survival, LOS = Length of stay; M = mixed evidence.

Source; Adapted from C. Boulton et al., Journal of the American Geriatrics Society, Dec. 2009 57(12):2328-37



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