

In collaboration with
Department of Health – Abu Dhabi

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A New Era for Digital Health: Abu Dhabi's Leap to Health Intelligence

WHITE PAPER
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Foreword



Shyam Bishen
Head, Centre for
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Committee

In this age of artificial intelligence (AI), digital transformation and disruption, it is often tempting to focus efforts on optimizing existing healthcare models rather than reimagining them. Taking this approach may lead to increased levels of early investment, but all too often it falls short in delivering sustained and valued returns.

At the World Economic Forum's Centre for Health and Healthcare, through its Digital Healthcare Transformation initiative, we are committed to improving health outcomes, access and efficiencies through the adoption and use of digital tools and data-driven solutions that reimagine health. We are proud that this initiative serves as a global platform for public-private collaboration on digital health, AI and data, helping leaders navigate health transformation and supporting their focus on patients, providers and population health enabled by technology.

This white paper is intended to support the initiative's goal of identifying exemplars of promising digital health transformations that are taking place around the world. These profiles are being

assembled and shared to inspire and guide other leading practitioners pursuing similar goals and to strengthen the network and community of digital health practitioners from both the public and private sectors.

In the case of Abu Dhabi, we were particularly inspired by the completeness of vision, the preference for platform-driven solutions and the firm commitment to laying a strong foundation of health data and synthesis to build actionable intelligence that informs decision-making at the individual, organizational and regional levels.

The World Economic Forum is pleased to have collaborated with the Department of Health – Abu Dhabi (DoH), Mansoor Ibrahim Al Mansoori and his team to bring forward their vision and this “pathfinder” journey in using digital health to build intelligence, inform decision-making and improve lives.

Foreword



Mansoor Ibrahim Al Mansoori
Chairman, Department of Health – Abu Dhabi



Noura Al Ghaithi
Undersecretary, Department of Health – Abu Dhabi

“ Abu Dhabi is building an intelligent health system designed to deliver prevention and personalization at a population scale.

Health is the hidden engine of every thriving economy. It fuels productivity, drives innovation and builds resilience. When health is strong, societies grow, businesses prosper and economies thrive. Yet health systems worldwide remain under strain, overburdened by chronic disease, ageing populations and rising costs. Too much of our effort is still spent treating illness instead of keeping people healthy. The question we must now ask is simple but urgent: what is preventing prevention?

Fragmented systems, limited resources and isolated adoption of innovation continue to hold us back. Yet the tools to change this are already in our hands. With AI as the “engine”, data as the “fuel” and policy as the “platform”, we can turn insights into life-changing action.

As we look to the future, governments must act as platform-builders for health, creating environments where innovation can be scaled responsibly and equitably. Abu Dhabi is building an intelligent health system designed to deliver prevention and personalization at a population scale – a system that can “Predict–Prevent–Act to Cure and to Restore”, the official framework of the Department of Health – Abu Dhabi’s [intelligent health system](#).

At the core of Abu Dhabi’s intelligent health system is the integration of a wide variety of datasets, including health, genotype, phenotype, lifestyle and environmental. The system then turns these into real-time insights and life-changing actions for the population of Abu Dhabi.

As a result, we are already seeing measurable impact. For example, through predictive modelling we have lowered the breast-cancer screening age and significantly increased early detection rates, while AI-driven insurance-claim monitoring has reduced waste and fraud, freeing resources.

Today, Abu Dhabi is a living lab for the world, providing a platform to build, test and scale the next generation of health solutions. By aligning innovation with system-wide integration, it ensures that breakthroughs move beyond pilots and into practice, improving lives at scale.

True transformation happens when innovation meets scale. Health system intelligence is about laying infrastructure that enables system-wide improvements at every level. Looking ahead, it becomes the foundation on which future digital health innovations can integrate and scale faster than ever before. It is making prevention and personalized health a reality in Abu Dhabi, and is a replicable model for health systems worldwide.

Executive summary

The true potential of digital health innovation is intelligence.



Despite unprecedented investment in digital health, from electronic health records to AI-driven diagnostics, global health outcomes have barely shifted. Healthcare systems remain fragmented, costs continue to rise and inequities persist. The problem is not innovation – it is implementation, integration and intelligence at scale.

An intelligent health system is the next foundational infrastructure. Just as electricity grids, telecommunications and cloud computing became the backbone of economic progress, intelligent and interoperable systems must now become a core service for public health. Integrating diverse data streams into a health system, and translating them into real-time intelligence can guide policy-makers, support providers and enable individuals to make better decisions.

The business case is urgent. Health systems are facing converging pressures:

Rising non-communicable diseases, antimicrobial resistance, climate-sensitive health shocks, stalled maternal health, persistent mental health burden, chronic workforce shortages: this non-exhaustive list of risks carries severe fiscal consequences. Chronic non-communicable diseases are creating immense economic strain; for example, globally,

diabetes already costs more than \$1 trillion annually, while cancer-related losses are projected to exceed \$25 trillion in total between 2020 and 2050, alongside other major costs arising from conditions such as cardiometabolic disease and obesity. At the same time, one-fifth of health spending in the Organisation for Economic Co-operation and Development (OECD) systems is ineffective or wasteful. Without a new model, the status quo is fiscally unsustainable.

Intelligent health systems have the potential to deliver three primary outcomes:

- **Personalization at scale:** Enabling interventions tailored to individuals at population scale
- **Access and equity:** Increasing access to care, extending care to underserved groups, ensuring better and more inclusive outcomes
- **Efficiency and resilience:** Reducing waste, duplication and cost drivers through integrated, real-time intelligence

Abu Dhabi's journey illustrates what happens when innovation is scaled into intelligence. Like many systems, Abu Dhabi faces high obesity and diabetes prevalence, significant cardiovascular

mortality and rising health expenditure. In response, the Department of Health – Abu Dhabi (DoH) committed to building network-wide data architecture, resisting the temptation to pursue piecemeal pilots and creating the foundation for an intelligent system.

Guided by three strategic pillars – healthy population, best-in-class care and resilience through innovation – Abu Dhabi has invested in a system designed to “Predict–Prevent–Act to Cure and to Restore”. More than 100,000 integrated data streams feed Abu Dhabi’s intelligent health system across clinical, financial, genomic and environmental domains. This integration is already translating into measurable results:

- **Faster emergency care:** The Unified Medical Operations Centre (UMOC) has reduced average heart attack response times by 30%, well below the global 90-minute benchmark
- **Healthier populations:** Insights from the Healthy Living Strategy, powered by Population Health Intelligence, have informed new fitness infrastructure and localized prevention programmes

- **Earlier detection:** Predictive modelling informed the move to lower the breast-cancer screening age and improved early diagnosis, while also enabling the redesign of the colorectal screening programme, resulting in increased participation and early detection
- **Fiscal efficiency:** AI-driven monitoring of insurance claims has reduced waste and fraud, creating fiscal space for reinvestment in prevention and innovation

The next decade of health will not be defined by the invention of new tools, but by full-scale systems that seamlessly integrate them. This white paper presents Abu Dhabi’s experience in a global context and outlines a playbook for policy-makers, payers, providers, researchers and industry on how to move from digital health innovation to intelligence at scale. It demonstrates what is possible, defines the opportunity and extends an invitation to scale this progress for the good of global health.



Healthcare is entering a new era, one built on precision, speed and better access to care. In Abu Dhabi, AI is helping clinicians diagnose faster and giving policy-makers real-time insights so they can act sooner and communities can stay healthier. But these advances aren’t just about technology, they’re about responsibility, helping doctors make informed decisions and ensuring every patient receives the care they need.

Brad Smith, Vice Chair and President, Microsoft



Introduction

Global health is under increasing strain. Intelligent health systems offer a pathway to unlock prevention and personalization at scale.

“ Without a new model, health systems will remain locked in cycles of crisis response instead of transformation.

Around the world, health systems are facing mounting pressure. Rising chronic disease, ageing populations and growing health inequities are converging with new global threats, from climate shocks to antimicrobial resistance. Non-communicable diseases now account for 74% of global deaths,¹ while mental health disorders remain among the top 10 causes of health loss worldwide.² At the same time, health workforces are shrinking, and progress on key indicators such as maternal and child mortality has stalled.³

The economic toll is immense; for example, diabetes costs more than \$1 trillion each year, and cancer-related losses are projected to exceed \$25 trillion in total between 2020 and 2050, while other conditions such as cardiovascular disease and obesity are also generating costs at a similar scale.^{4,5} Fiscal pressures are mounting, with health spending already surpassing \$9.8 trillion annually – over 10% of global GDP – and continuing to rise faster than government revenues.⁶ Yet as much as one-fifth of this spending in OECD countries remains ineffective or wasteful.⁷ The cost of this imbalance is measured not only in lives, but in lost productivity, opportunity and resilience.

These challenges are well known, but their convergence has created a new kind of systemic strain. Despite unprecedented advances in science and technology, the gap between what is possible and what is practised continues to widen. Without a new model, health systems will remain locked in cycles of crisis response instead of transformation.

The ‘intelligence’ opportunity

Over the past decade, health systems have made major progress in digitization. Hospitals and payers are digitizing records, expanding telehealth and deploying AI tools. These efforts are essential, yet digitization alone is not transformation. True progress depends on turning data into intelligence.

Intelligent health systems represent a system-level leap, integrating multimodal data across clinical, genomic, behavioural and environmental domains into a unified infrastructure that transforms fragmented information into actionable insights. They enable continuous, real-time decision-making across the ecosystem, helping:

- **Governments** shape adaptive policy
- **Providers** improve access, quality and outcomes
- **Payers** target resources efficiently
- **Individuals** receive personalized, preventive care

Where early digital initiatives built tools, intelligent systems build transformation. Through AI and multimodal data integration, it is possible to detect risks earlier, predict outbreaks faster and design more precise interventions. An intelligent health system amplifies the value of existing digital investments while laying the foundation for the next era of prevention, resilience and innovation, ultimately enabling:

- **Healthier societies:** Earlier and more widespread prevention, and detailed population health intelligence (PHI)
- **Stronger economies:** Healthier populations with greater productivity potential
- **Scalable innovation:** Providing a platform to scale digital health from pilot to population
- **Personalized care:** Shifting from the traditional “one size fits all” approach

An intelligent health system reframes innovation as infrastructure, acting as the backbone of a system that is capable of moving from fragmented, reactive care to insight-driven, preventive and personalized health at scale.

1

Innovation vs. intelligence

True health transformation demands a system-level leap – from innovation to intelligence, from pilots to impact at scale.

1.1 The innovation paradox

“ Health systems today are data-rich but insight-poor.

Over the past decade, digital health innovation has surged. New tools, platforms and technologies enter the system every year, promising to extend lives, improve outcomes and increase efficiency. Investment is strong, pipelines are full and momentum is accelerating. Yet the returns remain limited.

Despite billions having been spent, global health outcomes have not improved in proportion to investment;⁸ for example, one study found that \$100 billion in venture funding into digital health solutions had failed to measurably improve the healthcare system – not because the solutions were fundamentally ineffective but because an ecosystem had not been created to drive value at scale from digital innovation and data. Many solutions remain confined to pilot stages, adoption is inconsistent and systems continue to operate in isolation. In short, health systems today are data-rich but insight-poor.

The paradox is that while the volume of health data has never been greater – spanning clinical records, phenotypic data, genomic data, imaging, insurance claims and biometric streams from wearables – its value remains largely unrealized. These vast “healthcare data lakes” promise prediction and prevention but rarely deliver because integration is missing. Information sits fragmented across providers, insurers and sectors, preventing a holistic view of populations or individuals.

Digitization alone does not equal transformation. Like treating symptoms without addressing the cause, innovation in isolation will fail to shift the system. The next leap requires connecting these data sources into intelligence, so that insight becomes action across the entire health ecosystem.

1.2 Why innovation fails to scale

The barriers to scaling innovation are structural, not technological. Most health systems remain designed for episodic care rather than continuous learning and adaptation. As a result, promising innovations often fail to translate into measurable impact. Key constraints include:

- **Fragmented governance** across ministries, hospitals, payers and digital platforms
- **Limited interoperability** between datasets and institutions
- **Inconsistent data quality** and validation standards
- **Retrospective information** that prevents real-time response

- **Equity gaps** that exclude under-represented populations
- **Short-term or isolated funding** that stalls scale-up and sustainability

The result is waste across multiple layers, including duplicated infrastructure, inefficiency and lost opportunities, as seen in Figure 1. According to the OECD, up to 20% of all health spending in advanced economies delivers limited or no value.⁹ Overcoming these constraints demands a shift from fragmented innovation to integrated intelligence, from projects that prove what’s possible, to systems that make it sustainable and scalable.

FIGURE 1 | Categories of waste across the healthcare ecosystem



Source: OECD. (2017). *Tackling wasteful spending on health*. https://www.oecd.org/content/dam/oecd/en/publications/reports/2017/01/tackling-wasteful-spending-on-health_g1g72f29/9789264266414-en.pdf

1.3 The intelligence connection

“ In this intelligent system, data becomes a strategic asset – the ‘fuel’, not a by-product.”

If innovation represents the tools, intelligence represents the system that connects them, turning data into actionable insights, and insights into measurable impact. An intelligent health system provides this connection. It integrates data from across the ecosystem – clinical, genomic, behavioural, social, environmental and financial – to create a real-time, 360-degree view of population health and achievable insights.

This closed-loop system mirrors a “learning health system”, where each action generates new data, feeding insights back into policy, care and prevention. Over time, the system becomes more intelligent, equitable and efficient.

In this intelligent system, data becomes a strategic asset – the “fuel”, not a by-product. The result is a system capable of continuous improvement, where every dataset, decision and dollar invested strengthens the next cycle of innovation.

BOX 1 Definition: Intelligent health system

An intelligent health system is a connected, learning ecosystem that transforms data into real-time insight and coordinated action. By integrating clinical, financial, genomic, behavioural and environmental data, it creates shared intelligence that can be applied across government and society. Ultimately, it enables prevention, resilience and personalized health at scale.

It is not another digital platform, but rather a unifying architecture. It is the infrastructure that links people, providers and policy-makers around shared insight. When intelligence is embedded into daily operations, decisions become proactive rather than reactive, and resources can be directed where they create the most value and better outcomes.

TABLE 1 | The health ecosystem intelligence loop

This intelligence loop delivers value at every level of the health ecosystem:

Level	Actors	Enables
Macro (national/policy)	Governments and regulators	Real-time visibility to allocate resources efficiently, monitor outcomes and respond rapidly to emerging threats
Meso (system/provider)	Hospitals, insurers and care networks	Risk stratification, demand forecasting and adaptive service delivery based on population needs
Micro (individual/citizen)	Patients and families	Personalized prevention, early warnings and self-management tools that support proactive health



1.4 | From ‘one size fits all’ to ‘personalized at scale’

For decades, health systems have been designed around population averages. Guidelines, prevention campaigns and treatment protocols were built for the “typical patient”. This is an approach that has delivered progress but with limited precision and vast amounts of waste. In reality, no population is homogenous; genetics, lifestyle and environment all shape individual health trajectories in profoundly different ways.

This reliance on averages creates inefficiency and inequity. Interventions often miss the highest-risk groups while overserving those who benefit least. Complications are detected late, costs rise and outcomes diverge.

Intelligent health systems change this dynamic by linking biology, behaviour and context into a unified picture. Using integrated datasets – clinical, genomic, lifestyle, financial and environmental – populations can be segmented and stratified by real risk and need. Practical examples include:

- **Prevention:** Combining lab data, prescription records and body mass indexes (BMIs) to identify individuals at highest risk of diabetes, enabling lifestyle or pharmacological interventions before disease onset

- **Treatment:** Matching cancer patients to the most effective therapies using real-world genomic and clinical registry data, ensuring personalized medicine at population scale
- **Planning:** Using social and environmental data to predict community-level vulnerabilities, such as heat-related illness or asthma triggers, allowing resources to be deployed pre-emptively

Evidence from learning–health system studies shows that feedback loops tied to risk stratification improve quality and efficiency simultaneously, reducing avoidable usage and closing equity gaps.

Without intelligence, personalization remains boutique, confined to small, high-cost programmes. With intelligence, it becomes scalable, extending the benefits of precision medicine and preventive care to entire populations.

The outcome is a system that adapts in real time, one that anticipates not just what people need, but when and why, enabling truly personalized health at scale.



1.5 Taking a system-level leap

Every major industry has faced a moment when incremental change was no longer enough – when transformation required a system-level leap. Health now stands at that same threshold.

Other sectors have shown what is possible when data, infrastructure and policy converge to create shared systems:

- **Banking:** Fragmented institutions became interoperable through systems such as SWIFT, open banking and mobile payments, creating digital ecosystems that drive trust, transparency and inclusion
- **Cloud computing:** Isolated servers evolved into global infrastructure, enabled by regulatory frameworks that support data exchange, privacy and security, while unlocking innovation and scale
- **Energy systems:** National grids transformed into smart networks, integrating renewable sources and real-time analytics to balance supply and demand efficiently

Each leap shared the same ingredients: interoperability, data as infrastructure, enabling policy and collective investment in shared platforms.

These shifts did not simply improve efficiency; they created the foundation for new industries, services and markets. The proliferation of AI is a great example of an innovation that emerged from a connected system and shared infrastructure.

Health must now make its equivalent leap, and intelligent health systems are the enabling infrastructure – an intelligent layer that unites fragmented data, connects innovation to implementation and turns individual interventions into system-wide outcomes. As in other sectors, however, this convergence depends on policy and regulatory environments that encourage openness, interoperability and trust.

When intelligence is embedded at the core, every advancement, from genomics to AI to digital therapeutics, compounds in value. The result is not just better healthcare but a smarter, more resilient economy, where prevention, personalization and productivity reinforce one another.

Abu Dhabi's model demonstrates that this transformation is both possible and practical. By investing in intelligence as infrastructure, health systems can move beyond pilots to platforms and from innovation in isolation to innovation at scale.

2

Abu Dhabi's intelligent health system

From local challenges to global lessons, Abu Dhabi demonstrates how an intelligent health system can be built, scaled and sustained.

🎯 The goal: a system that predicts health risks, intervenes early and delivers precision care to enable people to live longer, healthier lives, while sustaining economic resilience.

Like many health systems worldwide, Abu Dhabi faces converging pressures – high rates of non-communicable diseases, rising fiscal demands, workforce shortages and the growing threat of antimicrobial resistance. With a population of 4.1 million, adult obesity stands at 22.3% (exceeding the global average of 16%),¹⁰ diabetes (types 1 and 2) prevalence at 13.6% (vs. 11% globally)¹¹ and cardiovascular disease accounts for roughly 25% of deaths (compared with one-third worldwide).¹²

The Department of Health – Abu Dhabi (DoH) set out not only to manage these challenges but to reimagine the system itself – moving beyond reactive treatment towards proactive prevention. The goal: a system that predicts health risks, intervenes early and delivers precision care to enable people to live longer, healthier lives, while sustaining economic resilience.

At the centre of this strategy is Abu Dhabi's intelligent health system, linking data from every part of the ecosystem. It allows the system to anticipate needs, prevent avoidable illness and act in real time, embedding intelligence into every level of decision-making, from clinical encounters to population-wide planning, through to personalized preventive care on an individual level.

Built on this operational intelligence foundation is Abu Dhabi's Population Health Intelligence (PHI) platform. Unveiled in October 2025 and built in partnership with Microsoft, this first-of-its-kind platform sits at the pinnacle of Abu Dhabi's intelligent health system.¹³ It creates a digital twin with the capability to aggregate and analyse de-identified data from across the ecosystem to identify trends, detect emerging risk clusters and guide proactive prevention and planning across the emirate.

Abu Dhabi's investment in AI has been instrumental in enhancing decision-making, detecting fraud and enabling personalized care at scale. Flagship initiatives are already operational, including predictive modelling for major diseases, AI-assisted diagnostics and near real-time claims analytics that safeguard fiscal integrity.

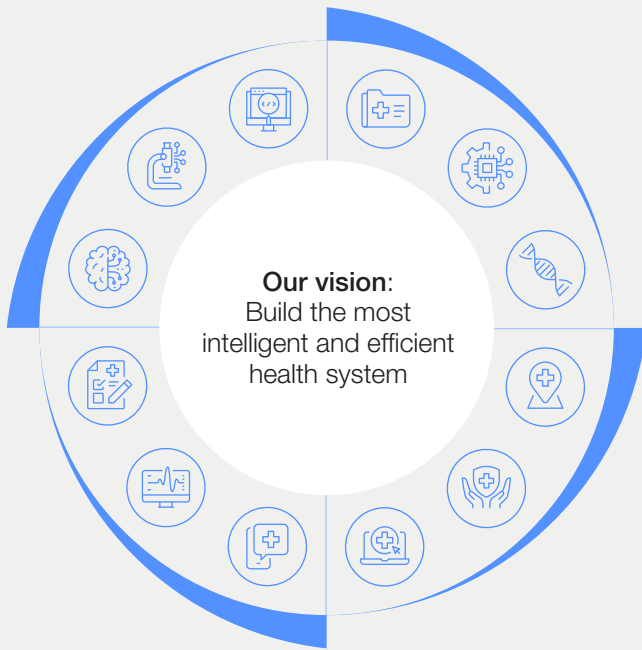
To achieve this, Abu Dhabi developed a technology and governance framework underpinned by interoperability, privacy and ethical-AI safeguards, ensuring that the resulting intelligence is both powerful and trusted. This framework forms the foundation of Abu Dhabi's intelligent health system today and is a global model for intelligent, preventive and personalized health.

2.1 Abu Dhabi's intelligent health system framework

At the heart of Abu Dhabi's intelligent health system is a framework that makes intelligence-gathering achievable at every level of the health ecosystem and beyond. Its purpose is to transform data into foresight – anticipating risks, guiding timely intervention and continuously refining performance as new evidence emerges.

The framework operates through the **Predict-Prevent-Act to Cure and to Restore model**, a continuous cycle that turns integrated information into decisions:

- **Predict:** Analyses trends and risks before they manifest
- **Prevent:** Designs targeted actions that reduce exposure and disease burden
- **Act (to Cure and to Restore):** Applies insights across clinical, operational and policy settings, then feeds outcomes back into the system for learning



Predict

Leverage **billions of health data points** to predict **diseases and unfavourable outcomes**

Prevent

Drive **preventative measures** to improve **health outcomes and ecosystem efficiencies**

Act

Execute **as quickly as possible on actions** “to Cure and to Restore” across the health system

Source: Department of Health – Abu Dhabi

Structurally, the framework rests on two interlinked layers:

1. Data integration and interoperability: The foundation that consolidates data across clinical, financial, genomic, lifestyle and environmental domains

2. The intelligence layer: The analytical engine that generates insight, forecasts demand and supports decision-making in real time

These layers are powered by a unified data foundation, ensuring that information from across the health ecosystem can be connected, trusted and transformed into insight for the right audiences.

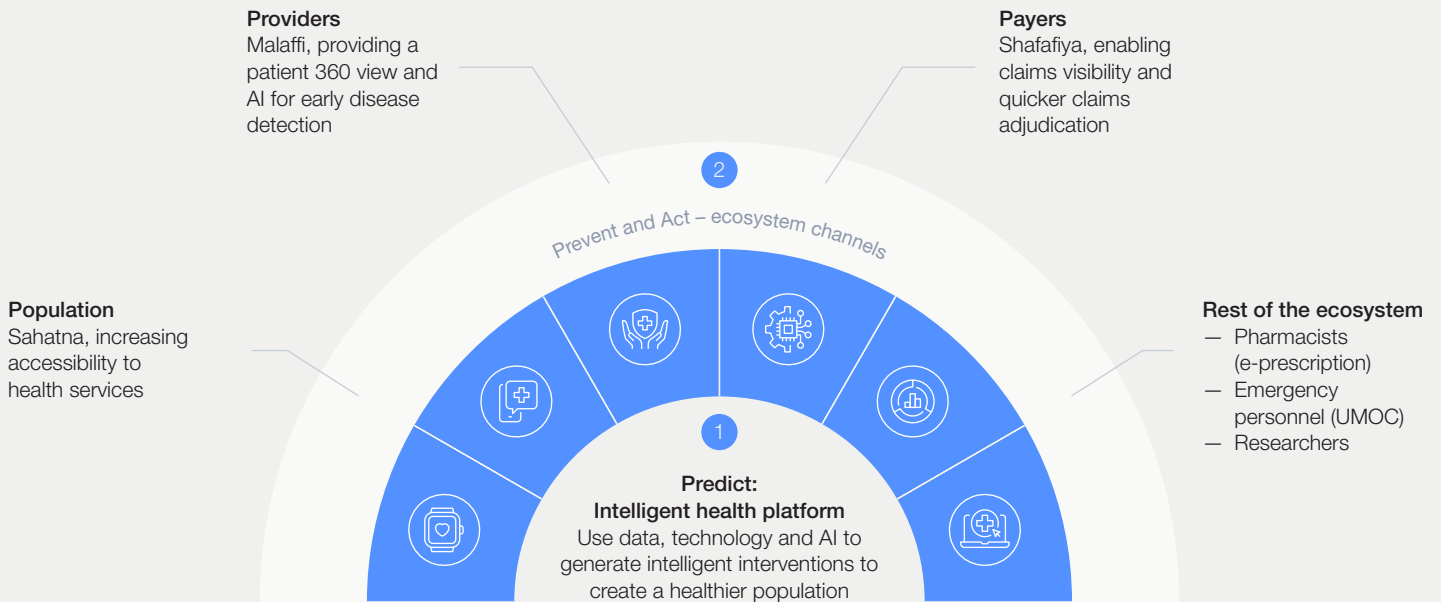


2.2 | Predict-Prevent-Act in practice

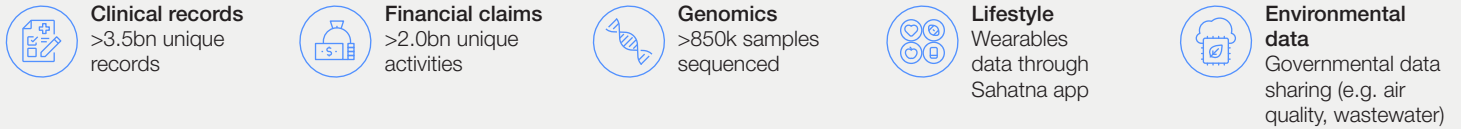
The intelligence layer translates Abu Dhabi's framework into daily functions. It connects patients, providers, payers and regulators through a continuous exchange of clinical, financial and

behavioural data, enabling real-time insight, coordinated decision-making and adaptive system management.

FIGURE 3 | System-wide insights from Abu Dhabi's intelligent health platform



Powered by Abu Dhabi's uniquely consolidated data streams – integrating billions of data records



Source: Department of Health – Abu Dhabi



Predict

Predict uses integrated data from across Abu Dhabi's health ecosystem to generate system-wide foresight. It consolidates clinical, financial, genomic, behavioural and environmental information into continuous analytics that identify risk, anticipate demand and guide early decision-making.

Curation and integration transform this information into a reliable, interoperable resource, where data is standardized, cleaned and validated through automated and human quality-assurance

processes. Consistent formatting, redundancy removal and continuous completeness checks ensure that datasets from different domains can be linked without loss of accuracy.

Machine learning (ML) and statistical models scan these linked datasets for anomalies and trends. They detect, for example, spikes in respiratory illness, shifts in prescribing behaviour or facilities nearing capacity.

BOX 2 Abu Dhabi's data sources and contributors

More than 100,000 integrated data streams feed Abu Dhabi's system, including:

- **Medical records** – Malaffi¹⁴ – Health Information Exchange: 3.5 billion unique clinical records, more than 3,000 connected facilities
- **Claims** – Shafafiya¹⁵ – Health Financial Exchange: 2 billion activities, over 10 million unique individuals
- **Genomics** – Emirati Genome Programme¹⁶ – 850,000 samples sequenced, more than 110 petabytes of data, 1.2 million-plus biobank samples
- **Lifestyle and wellness** – data from Sahatna¹⁷ – wearables and preventive initiatives
- **Environmental signals** – air quality, heat, pollutants, Rasid Laboratory wastewater surveillance¹⁸

Prevent

Once predictive models identify emerging risks, the signals are distributed to providers, payers and planners. Each uses defined response protocols to adjust care delivery, resource allocation or oversight measures before service impact occurs.

The "Prevent" strand applies predictive signals across the ecosystem, and even across government entities, to reduce avoidable risk before it becomes visible in clinical or operational outcomes:

- **Individuals** receive personalized recommendations and screening prompts through Sahatna, guiding lifestyle choices and adherence to treatment plans.
- **Providers** act on early warnings generated by predictive models – adjusting staffing, scheduling and infection-control measures in response to projected demand.
- **Payers and regulators** use usage forecasts and anomaly detection to refine authorization criteria and monitor high-risk patterns before costs escalate.
- **System planners** apply predictive maintenance schedules and procurement triggers that secure stock levels and keep essential infrastructure running.
- **Other government entities**, including education, environment and social policy departments, draw on shared intelligence to design preventive actions beyond the health sector, from school-based well-being initiatives to environmental risk mitigation and urban planning decisions.

These actions occur upstream of pressure points, allowing the health system to prevent disease progression, maintain service quality and sustain fiscal and operational resilience.

Act

The “Act” strand applies intelligence in real time, coordinating clinical, financial and operational responses across the health ecosystem. This can be thought of as “Act to Cure” (improvement of health state) or “Act to Restore”, where prevention of deterioration (financial/health) is the focus.

Each of these actions is executed and recorded in short time frames, creating a direct feedback loop between intervention and evidence. Data from clinical outcomes, financial controls and operational performance automatically updates the analytical layer, allowing predictive models to recalibrate within hours rather than cycles varying from days to weeks of analysis. The result is a continuous learning system that improves precision and response speed with each iteration.

Act to Cure – in action

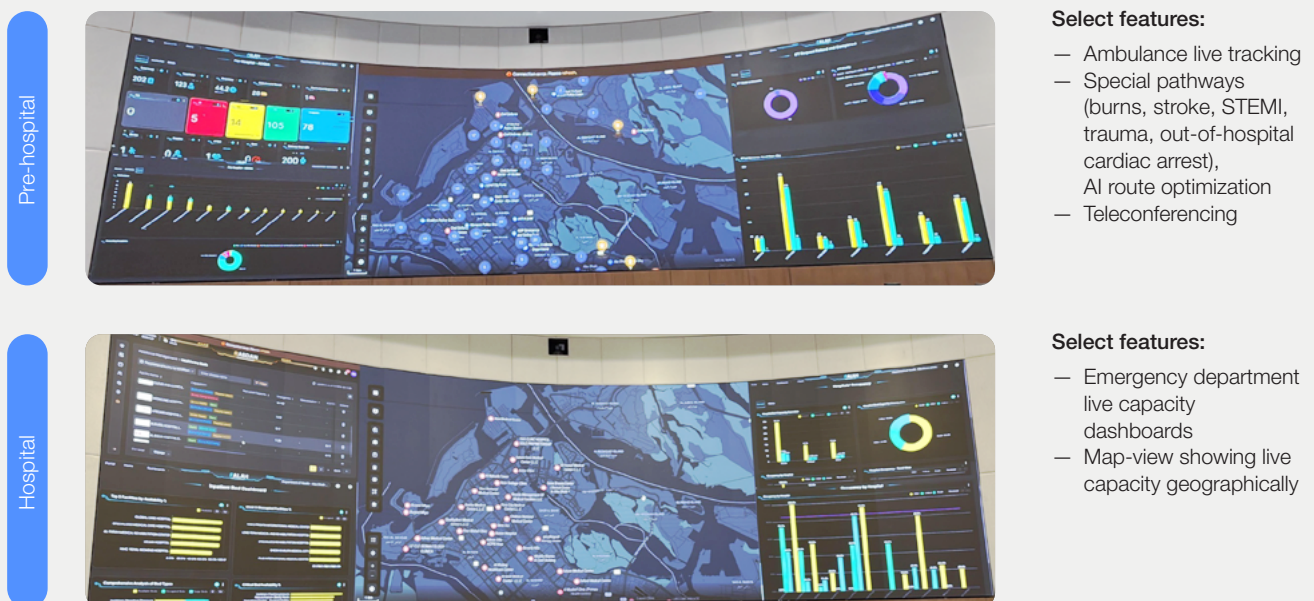
- **Clinical response – breast cancer screening:** By examining rates of diagnostic mammography, it was found that breast cancer showed relatively higher incidence in women aged 40 and below vs. other cancers in Abu Dhabi, while the recommended national screening programme started at age 40. A review of patient risk scoring models co-developed with Malaffi found that a significant number of breast cancer patients would have been detected at an earlier stage. *As a result, Abu Dhabi lowered the breast cancer screening age to 20.*¹⁹
- **Clinical response – colorectal cancer:** Colorectal cancer is the leading cause of cancer death in the UAE and is often detected at later

stages. Abu Dhabi’s Patient Risk Profile model detected low screening participation – 7% – among eligible individuals, with the majority opting for the lower-sensitivity faecal immunochemical test (FIT test) over a colonoscopy. *Recognizing that invasiveness and discomfort was the main reason for the lack of uptake, the DoH team rapidly launched an awareness campaign and introduced liquid biopsy (blood test) as a tool to improve adherence.*²⁰

Act to Restore – in action

- **Financial oversight – fraud, waste and abuse:** AI tools embedded in Shafafiya monitor transactions for fraud, waste and abuse (FWA) in real time. *The system now automatically halts or reviews claims that fall outside expected usage or clinical norms, reducing low-value care and preserving budgetary integrity.*²¹
- **Operational command – Unified Medical Operations Command (UMOC) Centre:**²² DoH’s first-of-its-kind, AI-enabled command centre, UMOC, integrates data from provider systems, logistics and emergency dispatch platforms. Live tracking of emergency-response vehicles allows dynamic route optimization and ensures patients reach the most appropriate facility based on clinical need and capacity. The same dashboards manage hospital throughput and workforce deployment during surges or large-scale incidents. *Abu Dhabi’s UMOC has reduced heart attack emergency response times to 57 minutes, well below the global 90-minute benchmark.*²³

FIGURE 4 UMOC Centre dashboard



2.3 Abu Dhabi's Population Health Intelligence platform

The same analytical infrastructure that powers daily clinical, financial and operational intelligence also supports strategic foresight at a population level. By aggregating and analysing de-identified data across the full ecosystem, Abu Dhabi can identify risk clusters, monitor disease prevalence and assess the long-term effects of policy or environmental change. This capability forms the foundation of Abu Dhabi's PHI platform, which applies the same predict-prevent-act logic to entire populations rather than to individual facilities or patients.

A key innovation supporting this platform is the development of an AI-enabled digital twin of Abu Dhabi, powered by health and non-health datasets. This virtual replica integrates health and non-health data to simulate and analyse population health dynamics in real time. It allows stakeholders to identify high-risk communities, uncover contributing risk factors and support the design, implementation and evaluation of targeted, cost-effective interventions.

FIGURE 5 Abu Dhabi's Population Health Intelligence dashboard



Source: Department of Health – Abu Dhabi



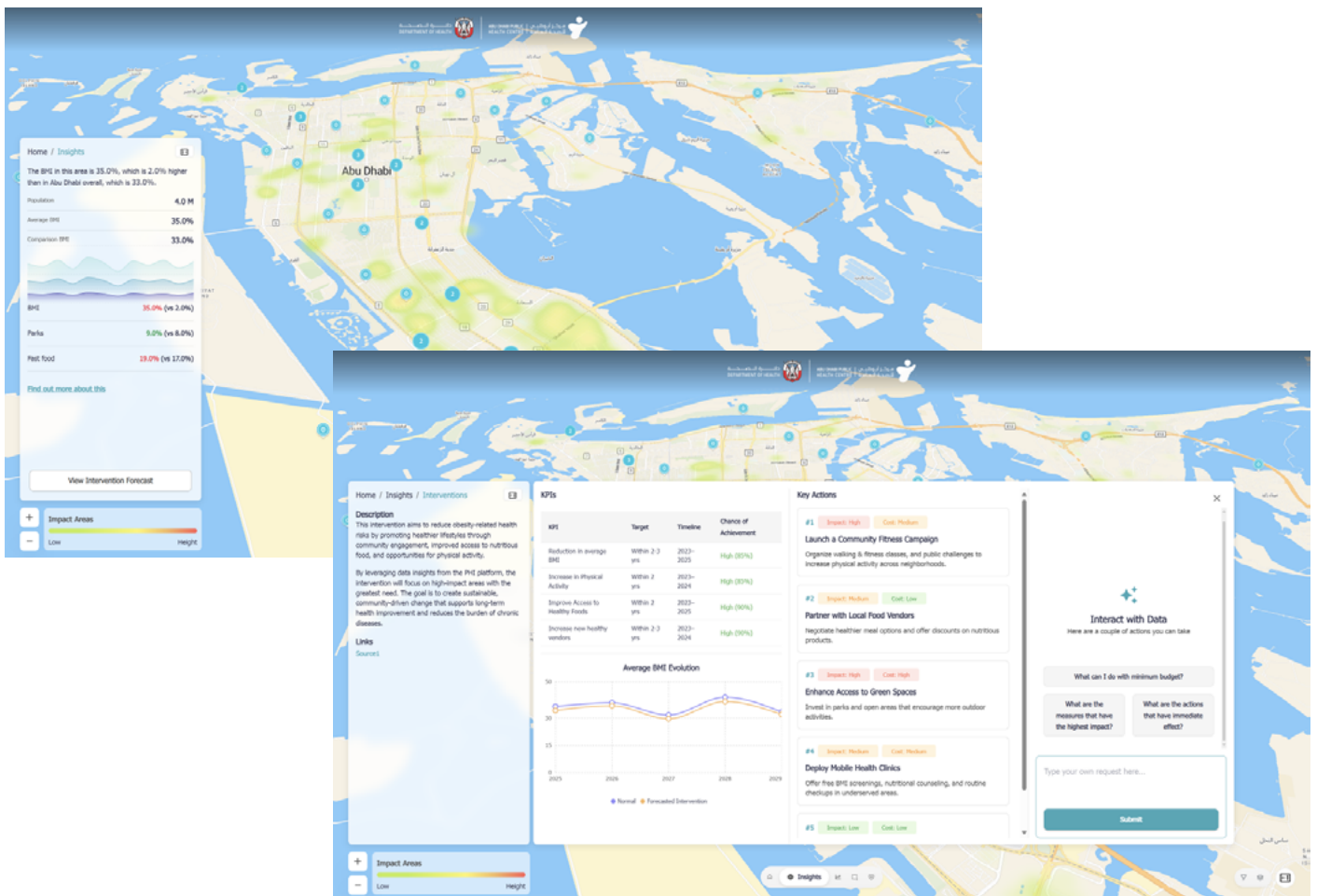
By combining data-driven insights with AI-powered workflows, we can achieve measurable improvements in the health of both individuals and entire populations. This approach enables people to make well-informed choices that support healthy living.

Elena Bonfiglioli, Global Leader Health and Life Sciences, Microsoft

2.4 How Abu Dhabi's Population Health Intelligence platform works

Together, these capabilities allow the PHI platform to operate as the population-level decision layer of Abu Dhabi's intelligent health system, linking data to policy and investment choices.

- **Integrated population dataset:** De-identified data from clinical, behavioural, financial and environmental sources are aggregated across the health ecosystem. The dataset provides a single, longitudinal view of how health outcomes, service use and lifestyle patterns evolve across communities.
- **Risk and behaviour modelling:** Statistical and ML models stratify the population by geography, age, socioeconomic profile and modifiable risk factors such as obesity, activity levels and dietary habits. These models identify clusters of elevated risk and forecast where disease burden or service demand will rise without intervention.
- **Programme performance tracking:** The Healthy Living Unit uses PHI to evaluate the performance and reach of lifestyle and environmental health initiatives. It analyses which programmes, such as community fitness schemes, workplace wellness initiatives or nutrition campaigns, achieve sustained participation and where redesign is needed. Insights guide whether interventions should be scaled, amended or geographically expanded. PHI also highlights structural barriers to participation, including distance from facilities, limited public transport and socioeconomic constraints, ensuring that preventive policy remains equitable and achievable.
- **Policy alignment:** Insights from PHI guide prevention policy, workforce and infrastructure planning, and cross-sector partnerships addressing social and environmental determinants of health. Forecasts of population need are linked directly to service capacity and financing decisions, to ensure system alignment.



3

The impact of intelligence

From vision to value: how intelligence delivers measurable outcomes in Abu Dhabi and beyond.

Abu Dhabi's experience shows that when intelligence is embedded into the fabric of health and governance, the results are visible across four dimensions:

- Healthier societies
- Stronger economies
- Faster innovation at scale
- Better outcomes for individuals

The impact examples below show that system-level health intelligence is not a technical function confined to healthcare; it is the backbone of coordinated cross-government public policy. Integrated data systems allow governments to detect risks earlier, target interventions more precisely and evaluate returns on investment across sectors.



3.1 A healthier society

Abu Dhabi's PHI platform integrates clinical, demographic, environmental and social data to map health risks across the emirate and guide targeted action. By connecting insights across government, the private sector and communities, it identifies priority groups, predicts emerging

threats and directs preventive programmes where they will have the greatest impact. This shared intelligence underpins a whole-of-society approach to resilience and well-being, one where education, environment and urban planning all contribute to better health outcomes.

Healthy Living Strategy in action

The Healthy Living Strategy, led by the DoH, is a government-wide commitment to support citizens and residents to live longer, healthier and more fulfilling lives and address the growing challenge of non-communicable diseases (NCDs). Healthy Living generates actionable insights from Abu Dhabi's intelligent health system to inform policy and guide decision-making across both the public and private sectors. The strategy uses near real-time insights to design, implement and evaluate cross-sector interventions that make healthy lifestyles accessible and sustainable for everyone in Abu Dhabi. The insight-led strategy enables collaboration among more than 20 Abu Dhabi and federal government entities – including the Abu Dhabi Department for Community Development, the Abu Dhabi Department of Education and Knowledge, the Abu Dhabi Department of Economic Development and the Abu Dhabi Department of Municipalities and Transport – as well as private-sector partners.

Through Abu Dhabi's PHI platform, communities with the highest obesity and physical inactivity risks were identified. Through cross collaboration with other government and private-sector entities, more than 200 community activations in 13 priority districts were launched within three months. These activations include walking groups, trainer-led fitness sessions, competitions and home-based workout programmes, all tailored to the needs of different demographic groups including youth, elderly people and people of determination (the UAE term for individuals with disabilities). These insights are also informing future investment in fitness infrastructure, with the goal that every

Abu Dhabi resident will live within a 5–10-minute drive of a fitness facility – making health the easy choice for all.

Other intelligence-driven Healthy Living initiatives include a ban on advertisements for unhealthy food and beverage (F&B) products across out-of-home media assets, which took effect in October 2025. This measure aims to reduce exposure to unhealthy F&B marketing that has been linked to increased purchases of unhealthy products and, in turn, higher rates of overweight and obesity – particularly among children and youth.

Recognizing the important role of school environments in promoting health and well-being among young people, geolocation fencing is also being implemented around designated zones such as schools to restrict online food delivery. This initiative draws on spatial data to define and enforce these restricted zones.

The PHI platform also plays a critical role in evaluating these Healthy Living initiatives against key performance indicators (KPIs), such as increases in physical activity levels and obesity prevalence. This allows for the efficient targeting of resources and supports evidence-based decision-making to encourage healthier environments. Rather than treating illness after it arises, Healthy Living's proactive approach focuses on anticipating and preventing health challenges before they become widespread.



3.2 A stronger economy

It has been estimated that poor health reduces global GDP by up to a staggering 15% annually.²⁴ A healthier economy is also a more productive one, and an intelligent health system directly delivers benefits by reducing healthcare spending through

greater efficiency and fewer readmissions; indirectly by improving health outcomes that lead to a boost in productivity; and more broadly by building a data-driven ecosystem that generates long-term financial returns.

CASE STUDY 2

Effect on direct healthcare costs

A significant proportion of costs come from preventable hospital readmissions, duplicate testing and fraud and waste in claims. This is a global issue, with the OECD estimating that up to about 20% of healthcare spending is inefficient or wasteful.²⁵

Through Abu Dhabi's Malaffi and Shafafiya platforms, 3.5 billion unique clinical records and claim activities have been connected, reducing duplication and waste. This has resulted in reduced costs due to enhanced efficiencies and the avoidance of duplication of diagnostics. There have been further reductions in demand for certain cost drivers, including hospital readmissions and emergency room visits.²⁶

Shafafiya is also enabling fraud and waste detection by flagging anomalies in claim analytics and supports billing standards. Intelligence applied to financial flows has reduced leakage and created fiscal space for reinvestment. The platform automates the coding process and integrates analytics that identify errors before and after claims are submitted.

Capacity masterplan forecasts: More than 180 models have been created to predict supply and demand across the entire Abu Dhabi healthcare workforce. This allows for resources to be re-allocated in preparation for high-demand periods, such as seasonal flu, and to prepare for sudden shocks to the healthcare system, including pandemics and disasters.

BOX 3 | Malaffi – connecting Abu Dhabi's healthcare ecosystem

Malaffi, established in 2018 through a public-private partnership with M42's Abu Dhabi Health Data Services, is the Middle East and North Africa (MENA) region's first Health Information Exchange and among the most advanced globally. It securely connects public and private healthcare providers, enabling real-time exchange of patient data to improve care quality and coordination.

By creating a unified database of patient records, Malaffi reduces duplication, enhances safety and supports better clinical decisions. During 2025, 81% of Abu Dhabi physicians used Malaffi monthly, with 3,000-plus connected facilities and more than 3.5 billion unique clinical records, making it a cornerstone of Abu Dhabi's intelligent health system.

Source: Malaffi. (2025, September). *Malaffi progress report*. <https://www.malaffi.ae/malaffi-progress-report/>

BOX 4 | Shafafiya 2.0 – powering an intelligent health finance data exchange

Shafafiya 2.0 is Abu Dhabi's next-generation health insurance management platform, designed to be intelligent, interoperable and user-centric. It offers process automation, AI-powered workflows and enhances transparency and regulatory compliance across the healthcare ecosystem.

By unifying data among payers, providers and regulators, Shafafiya 2.0 provides real-time

insights to detect fraud, optimize reimbursement and improve efficiency. The platform supports the DoH's vision of a patient-centric, data-driven health financial exchange that strengthens trust, sustainability and fiscal resilience across the intelligent health system.

Source: Department of Health – Abu Dhabi; M42's Abu Dhabi Health Data Services

3.3 | Faster innovation at scale

The same data infrastructure that drives efficiency also accelerates innovation. With interoperable longitudinal datasets covering the full population, Abu Dhabi provides a real-world testbed for next-generation health technologies.

Population-level data enables AI models to be trained and validated safely, supports adaptive regulatory pathways and reduces the time required for clinical trials and market access. The emirate has institutionalized this through environments where new therapies, digital tools and models of care can be piloted and scaled within a governed ecosystem.

CASE STUDY 3

Unified Medical Operations Command (UMOC) – innovation at scale

Abu Dhabi's Unified Medical Operations Command (UMOC) was established by the DoH as a central command and control hub to coordinate emergency and routine medical operations across the emirate. It represents the operational expression of Abu Dhabi's intelligent health system, translating real-time data into unified decision-making during both standard and crisis conditions.

The UMOC is a first-of-its-kind, AI-enabled system that integrates intelligence from hospitals, clinics, emergency services and public health surveillance into a single operational dashboard. During health emergencies, it enables

real-time monitoring of capacity, demand and resources, ensuring rapid deployment of personnel, equipment and supplies where they are needed most. Its predictive analytics capability, powered by AI, provides early warnings of system pressure points, allowing pre-emptive action rather than reactive response.

The system has reduced the average emergency response time to 11 minutes 49 seconds for urban areas and 14 minutes 26 seconds for rural areas, compared to the global average of 30 minutes, and has cut heart attack intervention times to more than 35% below the global average of 90 minutes.²⁷



3.4 Better health outcomes for individuals

At its core, an intelligent health system delivers value to individuals. By linking data across the full care continuum, it transforms how people understand and manage their health – enabling interventions that are tailored, equitable and

preventive. Abu Dhabi's experience shows how intelligence at scale can enable individuals to act early, protect their families and reduce the burden of disease across generations.



The Emirati Genome Programme is a powerful tool in identifying patients and families at risk. By addressing these risks early, we shift the focus from treatment to prevention, ultimately improving outcomes and saving lives.

Stephen Grobmyer, Chair, Cancer Institute, Cleveland Clinic Abu Dhabi

CASE STUDY 4

Personalized prevention

The Emirati Genome Programme (EGP) is a cornerstone of Abu Dhabi's intelligent health system, turning genomic discovery into actionable prevention. By detecting hereditary risks at an early stage, the programme enables citizens to take proactive measures for themselves and their families while informing broader public-health strategies. This approach demonstrates how intelligence at scale bridges genetic insight and real-world impact across generations.

Aisha Legge

Aisha Legge's experience illustrates how Abu Dhabi's intelligent health system translates genomic insight into early intervention. Through the EGP's advanced analytics, a hereditary ovarian-cancer mutation was identified before onset, allowing Aisha to undertake preventive care for herself and her family.

Recognizing the value of early detection, she encouraged her children to participate, extending prevention across generations and building a culture of health literacy and shared responsibility.

Community health impact

Aisha's story shows how an intelligent health system can transform individual genomic insight into collective benefit. By linking EGP findings to Abu Dhabi's Population Health Intelligence Platform, patterns of hereditary risk are detected at scale, informing community screening and policy decisions. This integration reduces future disease burden and institutionalizes a culture of prevention across the population.

BOX 5 Emirati Genome Programme

The Emirati Genome Programme (EGP) is one of the world's largest national genomic initiatives. With more than 850,000 genomes sequenced,²⁸ it addresses the historic under-representation of Arab populations in global datasets, building a foundation for inclusive precision medicine.

By integrating genomic data within Abu Dhabi's intelligent health system, the programme accelerates rare-disease discovery, early diagnosis and pharmacogenomic research, transforming prevention into a measurable national capability.



Scaled genomic sequencing is a public health necessity. We see population-wide sequencing as the foundation for a new model of care, one that, when combined with clinical records and artificial intelligence, shifts health systems from reactive treatment to precise, preventative and predictive care that is accessible. When nations sequence at scale, they generate insights that unlock real clinical impact, forming the backbone of a healthier, more resilient global future for all.

Dimitris Moulavasilis, Group Chief Executive Officer, M42

A global playbook for health intelligence

Abu Dhabi's experience shows that health intelligence is not only achievable but replicable.

Translating the model into other settings requires a deliberate balance of technology, governance and culture. This section distills the elements that have underpinned Abu Dhabi's success and identifies the lessons most relevant to governments and payers seeking to build their own PHI systems.

Every transformation comes with challenges. Building an intelligent health system requires not only technology but trust, coordination and sustained commitment. Abu Dhabi's journey shows that while innovation continues to advance, the greatest risk lies in piecemeal implementation without the necessary infrastructure, policy and governance foundations.

4.1 Key enablers

“ Abu Dhabi's enablers are mutually reinforcing – political will secures resources; governance builds trust; infrastructure and partnerships translate trust into capability; and a data-literate culture ensures that intelligence is used, not just stored.

The success of Abu Dhabi's intelligent health system rests on six interdependent enablers that together convert data into trust, investment and capability:

- 1. Leadership and political will:** Clear vision and alignment with national priorities. There is a commitment of risk-weighted, multi-year investment that is non-discretionary, recognizing that, while upfront capital is required, the multiplier effect of health intelligence creates a net increase in financial resources over time. Political alignment ensures continuity and scale, even when short-term projects might otherwise have led to piecemeal projects.
- 2. Governance and data sovereignty:** Robust privacy, regulation and sovereign data policies that ensure trust. Frameworks are designed to ensure that data is not locked away; clear rules on access, accountability and secondary use make it possible for multiple stakeholders (from government agencies to private providers and international research partners) to work within the ecosystem. Balance between control and usability has enabled Abu Dhabi to expand participation without undermining public trust.
- 3. Infrastructure investment:** Building interoperable digital architecture, supported by sustainable funding models. Rather than one-off projects, Abu Dhabi has built models that support continuous upgrades, integration of new data sources and resilience against cyber and operational risks.
- 4. Public-private partnerships:** Employing expertise and innovation from across sectors

to accelerate progress. The emphasis is on partnerships rather than one-off procurement. By co-developing solutions, the system has accelerated knowledge transfer and local adaptation. This approach spreads risk and cost across stakeholders and demonstrates how PHI can be built even in regions where large capital outlays are not feasible.

- 5. Capacity and culture:** Upskilling the health workforce and promoting a data-driven mindset across all levels. This includes the development of distributed ownership, where responsibility for intelligence is not centralized in IT departments, but rather extended across providers, insurers and regulators. The expectation is not just that intelligence exists, but that it actively informs choices.
- 6. Diverse data sources:** The system moves beyond clinical records and claims. By deliberately integrating environmental, transport and education data alongside health datasets, the system captures the full set of determinants that shape outcomes. This changes the quality of insight: environmental data supports forecasting and preparedness; transport data reveals structural risks in mobility, and urban planning and education data highlights long-term drivers of the workforce.

Abu Dhabi's enablers are mutually reinforcing – political will secures resources; governance builds trust; infrastructure and partnerships translate trust into capability; and a data-literate culture ensures that intelligence is used, not just stored.



4.2 Lessons

These enablers translate into **actionable** lessons for the main actors that sustain a health intelligence ecosystem:

- **For policy-makers:** Treat PHI as national infrastructure. Like transport or electricity grids, its long-term value is realized only if it is continuously maintained, universally accessible and underpinned by clear standards. Without this, systems risk fragmenting into short-lived pilots, eroding public trust and wasting investment.
- **For payers:** Design systems that act on interim indicators, not retrospective KPIs. Interim signals, such as changes in admission rates, prescribing patterns or biometric trends, allow payers to decide when to stop, adapt or scale an intervention. This reduces waste from persisting with ineffective services while also accelerating those that demonstrate value.
- **For providers:** Embed feedback loops into clinical and operational practice. Continuous data-driven adjustment allows care teams to adapt in real time; for example, modifying treatment pathways when outcomes deviate, or reallocating resources when service demand spikes.
- **For researchers:** Disaggregate and analyse data by age, geography and socioeconomic status to ensure inclusive outcomes. Granular analysis not only uncovers disparities but also improves the design of interventions, ensuring they are calibrated to diverse populations.

- **For investors and industry:** Align innovation to system intelligence, not standalone pilots. Products and services that integrate with broader data ecosystems are more likely to succeed, as they face lower adoption friction, can demonstrate impact via system data and align with prevailing health system strategies, increasing their prospects for sustainable scale.
- **For individuals:** Support consumers with accessible, transparent health data and personalized insights that aid informed decision-making in everyday life. By connecting individuals to their own health intelligence, through digital tools, preventive prompts and early warnings, systems can encourage shared responsibility and stronger engagement in long-term well-being.

Collectively, these lessons underscore a single insight: building intelligence is not about technology alone. Success depends on aligning governance, regulation, incentives and culture around a shared commitment to understanding the full context of factors affecting health, advancing informed solutions and measurable progress.

5

An invitation to scale innovation with intelligence

Abu Dhabi's intelligent health system is not only transforming the emirate's healthcare delivery but also creating the foundation for global health innovation.

By uniting data, digital infrastructure and agile policy, the intelligent health system provides an environment where new solutions can be designed, validated and scaled responsibly.

This intelligence-powered ecosystem connects the full innovation cycle, from discovery to deployment, allowing global partners to “build, test and scale” in Abu Dhabi. Innovators can use real-world data, predictive analytics and regulatory feedback loops to accelerate progress from pilot to population impact.



The future of health cannot be built in isolation; it must be co-created. Abu Dhabi is a living lab for real-world health innovation. Backed by agile, innovation-focused regulations, capital and infrastructure, we offer a platform where health innovators can build, test and scale solutions in Abu Dhabi for the world.

Mansoor Ibrahim Al Mansoori, Chairman, Department of Health – Abu Dhabi



5.1 Abu Dhabi's HELM cluster

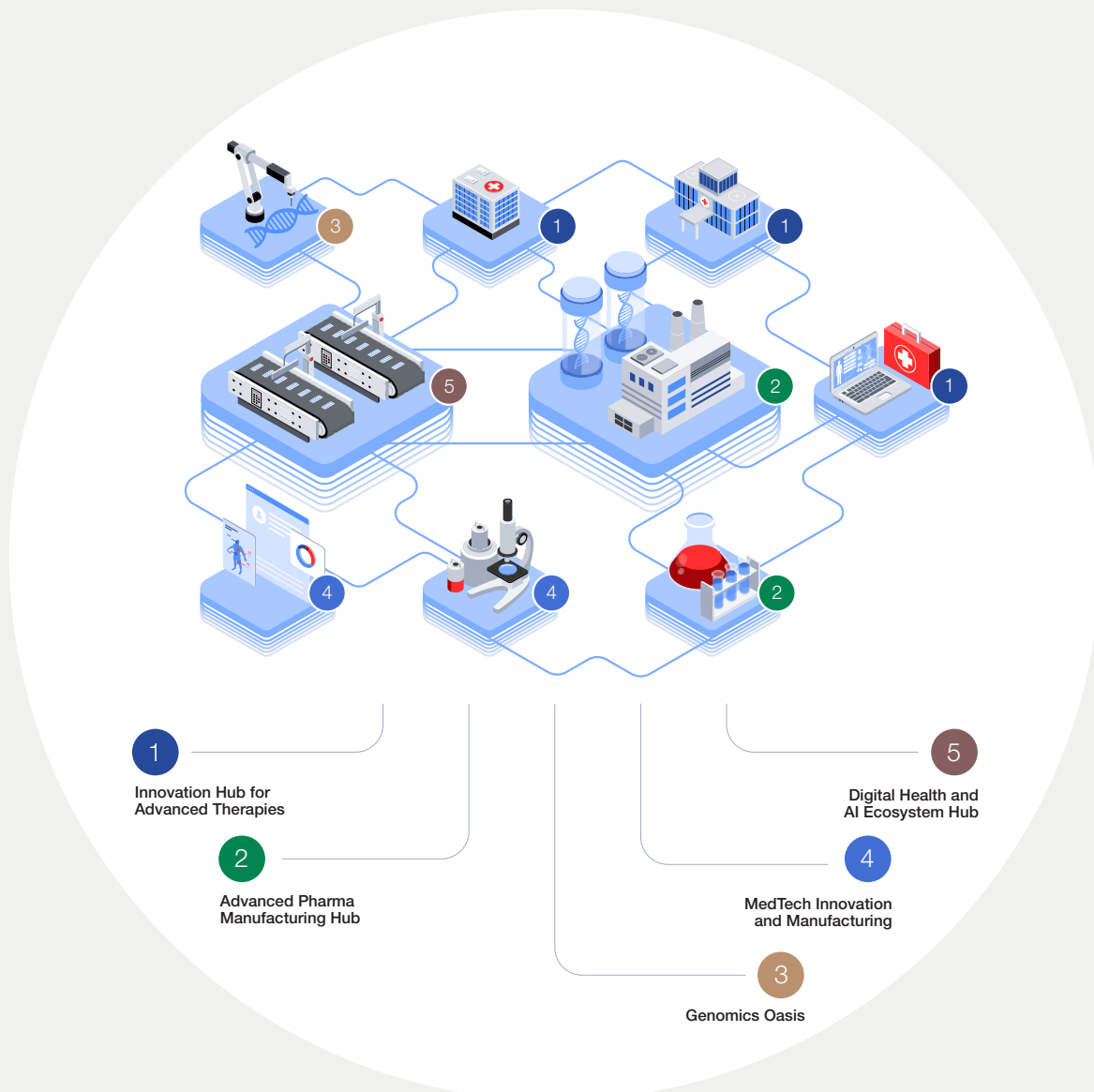
The HELM – Health, Endurance, Longevity and Medicine – cluster²⁹ is a leading hub for life sciences, advancing research, development, manufacturing and the commercialization of next-generation therapies, precision medicine and AI-powered healthcare solutions. Announced during Abu Dhabi Global Health Week 2025 and led by the Abu Dhabi Department of Economic Development, the Abu Dhabi Investment Office and the Department of Health – Abu Dhabi, the HELM cluster brings together government, investors, technologists, researchers and healthcare providers in one connected ecosystem.

HELM is a launchpad for groundbreaking solutions that will shape the future of how diseases are detected, how treatment is delivered and how

health is managed worldwide, driving advances in key frontier areas, including precision medicine, genomics, point-of-care technologies, pharmaceutical manufacturing and AI-powered digital health solutions. Companies operating within HELM gain access to cutting-edge infrastructure, strategic capital and a highly skilled talent pool within Abu Dhabi's intelligent health system, designed to fast-track innovation, scale globally and drive lasting impact.

It enables innovators to fast-track market validation through Abu Dhabi's connected clinical trial and regulatory infrastructure, access regional and global markets, and scale their solutions with bespoke partnership and advisory support.

FIGURE 6 What is HELM?



Source: HELM. (n.d.). What is HELM? Retrieved November 3, 2025, from <https://www.helm.abudhabi/what-is-helm>

Conclusion

Around the world, health systems are approaching a point of no return. Costs are rising faster than revenues; non-communicable diseases drive most mortality; climate and antimicrobial threats are compounding risk; and critical workforces are stretched thin. At the same time, the tools to change course have never been more powerful. The gap is no longer invention, it is intelligent integration.

This white paper argues that the next era of progress will be defined not by more pilots or isolated digital tools, but by intelligent health systems that connect data, analytics and action into one learning architecture. When multimodal data is integrated and governed well and PHI sits at the system apex, health systems move from retrospective reporting to real-time foresight; from one-size-fits-all to personalization at scale; from waste and duplication to efficiency and resilience; from treating illness to preventing it.

Abu Dhabi's experience demonstrates that this transformation is both possible and practical. Confronting the same pressures faced globally – rising NCDs, fiscal constraints, workforce challenges and new security threats – the emirate chose a system-level leap. It built an intelligent health system that links clinical, financial, genomic, behavioural and environmental data; embedded AI and analytics for prediction and planning; and implemented governance that makes intelligence both powerful and trusted.

On this foundation, Abu Dhabi launched PHI as the apex layer: a population-scale, AI-powered capability that turns de-identified, multimodal data into real-time insight for policy, planning and prevention. PHI is not another platform, but rather the operating logic of a learning health system. It enables decision-makers to predict risk, prevent avoidable disease and act with precision, continuously measuring what works and reinvesting where returns are highest.

The impact is visible across four dimensions:

- **Healthier societies:** Targeted, upstream action directs resources to communities of highest need, making the healthy choice the easy choice and improving participation where it matters most.

- **Stronger economies:** Interoperable data and financial analytics reduce duplication, prevent low-value care, and curb fraud and waste. Fiscal space created through intelligence is reinvested where it delivers measurable value.
- **Faster innovation at scale:** Population-level, longitudinal data enables safer AI development, adaptive regulation and faster clinical validation, shortening the path from discovery to deployment. Abu Dhabi's Unified Medical Operations Command (UMOC) shows how real-time intelligence converts system complexity into coordination and resilience.
- **Better outcomes for individuals:** Linked data allows care to be personalized and timely, matching interventions to risk profiles and ensuring equity by design, not by exception.

Abu Dhabi's model is a playbook to be adapted and built in partnership. The common ingredients are clear: leadership and multi-year investment; governance and data sovereignty that build trust; interoperable infrastructure; public-private partnership; a data-literate culture; and a commitment to integrate both healthcare and non-healthcare data. Where these are present, intelligence multiplies: each dataset, decision and dollar strengthens the next cycle of improvement.

Crucially, this approach also accelerates global innovation. Abu Dhabi's HELM (Health, Endurance, Longevity and Medicine) cluster serves as a launchpad for life sciences and biotechnology. By coupling system intelligence with strategic capital, a digitally integrated clinical trial and regulatory environment, and partnerships across government, research and providers, Abu Dhabi offers a place to build, test and scale solutions locally and for the world.

The way forward is clear:

- 1. Treat intelligence as national infrastructure:** Like power or broadband, an intelligent health system requires stable, multi-year investment, clear standards and continuous upgrades. Its value multiplies when universally accessible and governed for trust.

2. **Integrate for action, not storage:** Prioritize interoperability, real-time analytics and closed-loop feedback so that data flows to the main decision points – policy, clinical, operational and individual.
3. **Design for equity by default:** Use intelligence to identify gaps by sex, age, geography and socioeconomic status; target interventions where they yield the greatest marginal benefit; and measure distributional impact, not just averages.
4. **Align incentives with foresight:** Fund against interim indicators (early-warning signals, usage shifts, adherence trends) to stop what doesn't work sooner and scale what does faster.
5. **Make innovation system-ready:** Enable new tools to plug into the intelligence layer, contribute data responsibly and demonstrate impact in real-world settings.

This is not a call for more technology for its own sake; it is a call to re-platform health around intelligence, so that prevention becomes the first and smartest investment. So, resilience is built before the next shock arrives, and personalization is possible for millions, not a privileged few.

Health is the hidden engine of every thriving economy. By moving from innovation in isolation to intelligence at scale, countries can unlock healthier societies, stronger economies, faster innovation and better outcomes for every individual. Abu Dhabi shows that when data, policy and partnership converge, transformation follows, not in theory, but in practice.

The invitation is open: build, test and scale the next generation of health solutions in Abu Dhabi on systems designed for insight, trust and impact. The sooner the system-level leap is made, the sooner prevention and personalization can become a reality for everyone.



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