Health Reimagined: The Proactive Revolution in Care Delivery (2025-2035)

A comprehensive analysis of healthcare's paradigm shift from reactive "sick care" to a predictive, preventive, personalized, and participatory ecosystem.

The End of "Sick Care"

The Inevitable Shift to a Predictive Health Ecosystem

The global healthcare landscape stands at the precipice of its most profound transformation in over a century. The prevailing reactive model of the 20th century is proving to be clinically, economically, and socially unsustainable.

Over the next decade (2025-2035), the industry will pivot from a "sick care" model to a predictive, preventive, personalized, and participatory (P4) ecosystem - a transformation driven by economic pressures and the promise of superior health outcomes.

The Economic Imperative for Change

75-90%
Chronic Care Costs
Percentage of U.S. healthcare expenditures spent on chronic and mental health conditions, many of which are preventable.

70%
Cost Surge
Projected increase in U.S. national healthcare expenditure by 2032, reaching $7.7 trillion.

$3-6
Prevention ROI
Return on investment for every dollar spent on preventive care through avoided emergency visits and hospitalizations.

The traditional reactive healthcare model is collapsing under its own weight, creating a vicious cycle where treating established diseases consumes resources needed for prevention.

The Vicious Cycle of Reactive Care

Reactive Treatment Focus

System prioritizes treating established diseases rather than prevention

Rising Costs

Complex treatments for advanced disease drive up healthcare expenditures

Resource Depletion

Limited resources for preventive programs that could reduce long-term burden

Provider Burnout

Overworked clinicians face increasing administrative burden

This self-perpetuating loop makes a fundamental paradigm shift imperative. The system becomes so consumed with fighting the fires of acute and chronic illness that it lacks the capacity to invest in prevention.

The P4 Paradigm: A New Philosophy for Medicine

The successor to the failing reactive model is a new guiding philosophy for 21st-century medicine: the P4 paradigm. This framework represents a complete departure from the one-size-fits-all, episodic approach of the past.

1 Predictive

Moving from reaction to anticipation by harnessing AI and genomics to predict individual health risks before conditions become critical.

2 Preventive

Reorienting the entire healthcare system away from treatment as the primary activity and toward prevention as the central goal.

3 Personalized

Ending medicine based on population averages by tailoring care to an individual's unique genetic makeup, lifestyle factors, and environmental exposures.

4 Participatory

Empowering patients with information, tools, education, and agency to become co-producers of their own health.

Beyond Technology: The Cultural Transformation

While the first three pillars—Predictive, Preventive, and Personalized—are heavily enabled by technological advancements, the fourth pillar, Participatory, highlights that the P4 revolution is not merely a technological evolution but a profound cultural and relational transformation.

It fundamentally redefines the dynamic between the patient, the provider, and the healthcare system, recasting the patient from a passive recipient of services into an active, empowered partner in managing their own health.

Initiatives focused on patient education, improving health literacy, and building trust are as critical to the success of P4 medicine as the technology itself.

The Technological Bedrock of Proactive Health

The conceptual shift to P4 medicine is made tangible by a suite of powerful technologies that are converging to create a new digital infrastructure for healthcare. Together, they form the central nervous system of the proactive health ecosystem.

Artificial Intelligence

The engine of the proactive health revolution, enabling risk prediction, diagnostic enhancement, and personalized care at unprecedented scale.

Genomics

The biological blueprint for personalized medicine, enabling a shift from population averages to truly individualized "N-of-1" care.

Wearables & IoMT

The continuous monitoring network that captures real-time physiological and behavioral data in everyday life.

Data Interoperability

The connective tissue that enables seamless information flow across the entire health ecosystem.

AI: The Ecosystem's Central Nervous System

Artificial intelligence is the undisputed engine of the proactive health revolution. Its role extends far beyond diagnostics to become the core processing unit for the entire ecosystem.

The global AI in healthcare market is projected to undergo explosive growth, expanding from an estimated USD 36.96 billion in 2025 to USD 613.81 billion by 2034, representing a compound annual growth rate (CAGR) of 36.83%.

Diagnostic Enhancement

AI algorithms reduce diagnostic errors by up to 30% in radiology and transform fields like pathology and dermatology.

Predictive Analytics

AI analyzes vast datasets to identify at-risk individuals and populations, enabling proactive intervention.

Workflow Automation

AI-powered scribes and virtual assistants automate administrative tasks, giving clinicians up to 20% more time for direct patient care.

The Data-Algorithm-Action Flywheel

Data Generation

EHRs, wearables, and digital health technologies generate unprecedented volumes of health data

Algorithm Refinement

More data trains increasingly sophisticated and accurate AI models

Trust Building

Demonstrated value builds trust, encouraging wider adoption and data sharing

Clinical Value

Improved algorithms demonstrate tangible benefits like reduced hospitalizations and better diagnostics

This virtuous cycle is the core engine that will drive continuous improvement and innovation across the entire proactive health ecosystem.

The Genomic Revolution

From Population Averages to N-of-1 Care

If AI is the ecosystem's brain, genomics provides its unique biological blueprint. The genomic revolution is the key to unlocking true personalization in medicine.

The primary catalyst is the plummeting cost of genetic sequencing. What was once a complex and expensive research endeavor is rapidly becoming a mainstream clinical utility, with whole-genome sequencing now available for as low as $600.

The personalized medicine market is projected to expand from USD 654.46 billion in 2025 to USD 1.31 trillion by 2034.

Genomics in Clinical Practice

Pharmacogenomics

Uses genetic information to predict response to specific drugs, guiding prescriptions for conditions like depression, epilepsy, and heart disease to avoid adverse reactions.

Precision Oncology

Cancer treatment guided by the specific genetic profile of a patient's tumor, selecting targeted therapies far more effective than traditional chemotherapy.

Rare Disease Diagnosis

Dramatically accelerates identification of underlying genetic causes, particularly in pediatric cases, ending years of diagnostic uncertainty.

The true power of genomics is fully unleashed when it converges with artificial intelligence. AI algorithms can analyze genomic data to calculate sophisticated polygenic risk scores (PRS) that quantify susceptibility to complex conditions.
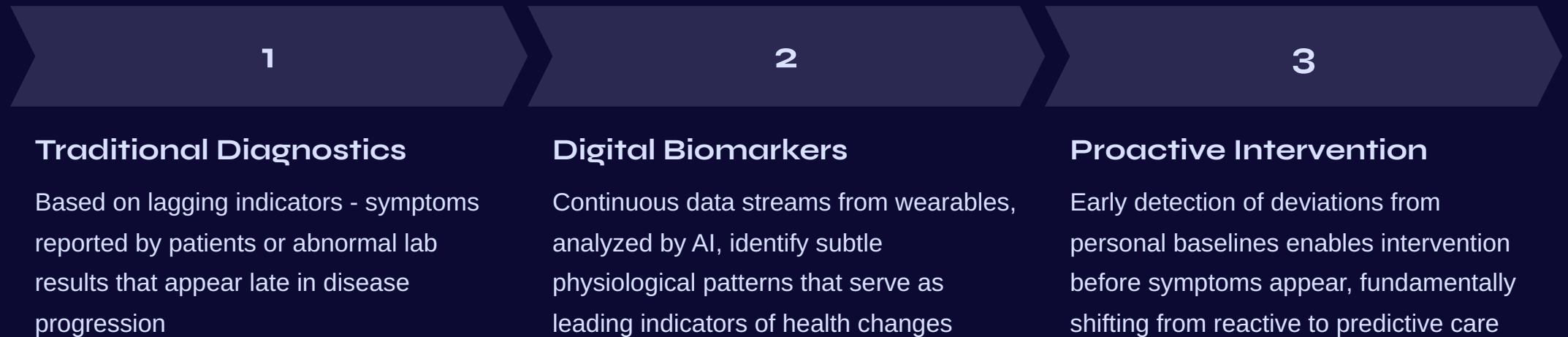
The Sentient Self: Wearables & IoMT

The third technological pillar is the vast network of sensors that capture real-time, continuous data about an individual's physiology and behavior.

This ecosystem of consumer wearables and clinical-grade Internet of Medical Things (IoMT) devices is fundamentally changing the nature of health data itself - transitioning from episodic snapshots during infrequent clinical visits to a continuous, high-fidelity stream of real-world information.

By 2022, 46% of U.S. consumers reported owning a wearable device, with adoption growing fastest among older and lower-income demographics.

From Lagging to Leading Indicators

1

2

3

Traditional Diagnostics

Based on lagging indicators - symptoms reported by patients or abnormal lab results that appear late in disease progression

Digital Biomarkers

Continuous data streams from wearables, analyzed by AI, identify subtle physiological patterns that serve as leading indicators of health changes

Proactive Intervention

Early detection of deviations from personal baselines enables intervention before symptoms appear, fundamentally shifting from reactive to predictive care

This represents a fundamental shift in diagnostics, moving from waiting for symptoms to detecting the earliest signals of declining health - the very essence of proactive care.

The Data Ecosystem: Interoperability as Strategic Infrastructure

Data is the lifeblood of the proactive health ecosystem, but for decades, its value has been trapped in disconnected silos. Breaking down these silos is no longer just a technical challenge; it has become a "strategic imperative."

Technical Standards

FHIR (Fast Healthcare Interoperability Resources) has emerged as the leading standard, providing a common language for data exchange through modern APIs.

Infrastructure Development

Cloud-based data exchange platforms and unified health IDs allow a patient's data to be securely aggregated from multiple sources.

Regulatory Mandates

Frameworks like TEFCA in the U.S. are being implemented to enforce common interoperability standards across the healthcare industry.
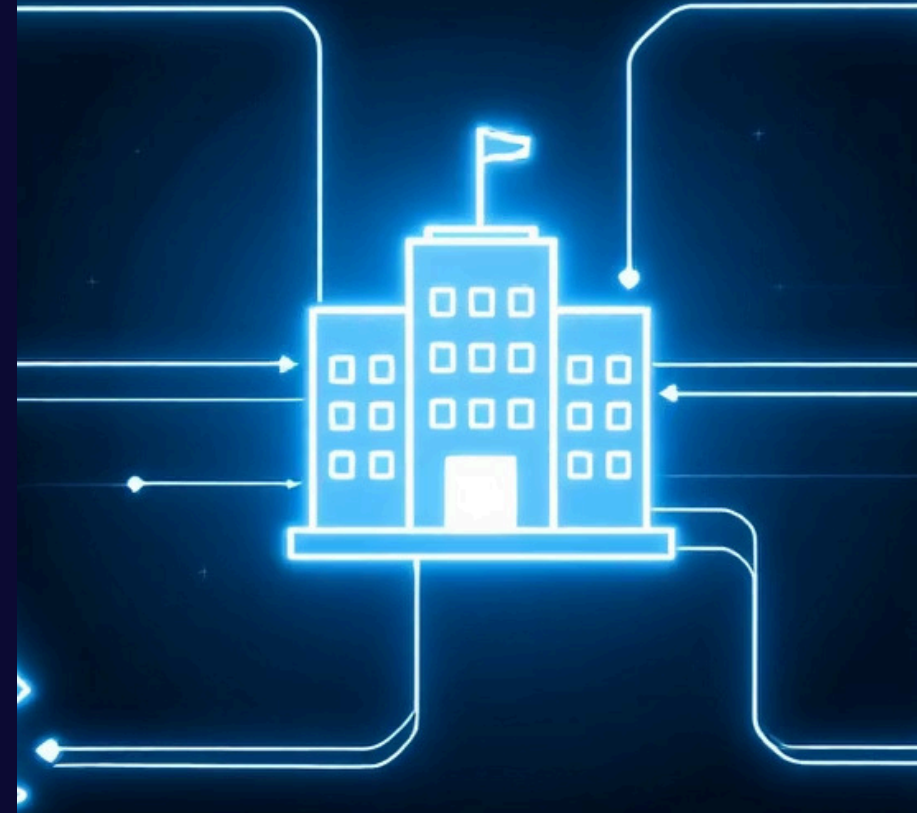
Providers as Data Platforms

The fundamental shift toward open, API-driven data exchange is transforming the very business model of healthcare providers. Traditionally, providers have been service-delivery hubs. The move to mandated interoperability is recasting them as data platforms.

This creates a new competitive landscape where a provider's strategic value is determined not only by the quality of care it delivers but also by the robustness, security, and accessibility of its data platform.

Organizations that fail to adapt risk "disintermediation," where third-party innovators build more compelling patient-facing applications on top of the provider's data, capturing the patient relationship.

The Technological Pillars of Proactive Healthcare

AI & Predictive Analytics	Risk stratification, diagnostic augmentation, workflow automation	Market CAGR: 36.83%, reaching $613.81B by 2034	Requires vast, high-quality interoperable data
Genomics	N-of-1 care planning, pharmacogenomics, risk assessment	Market to reach $1.31T by 2034; WGS cost <$600	Requires AI to interpret complex genomic data
Wearables & IoMT	Continuous monitoring, digital biomarker identification	46% U.S. adult ownership; Market to reach $486B by 2032	Requires high patient adherence and engagement
Data Interoperability	Creation of unified patient record, enabling seamless data flow	Mandated adoption of FHIR; Implementation of TEFCA	Legacy system fragmentation, data security concerns

New Frontiers in Business and Care Delivery

The technological revolution serves as the foundation for a parallel revolution in the business and delivery of healthcare. The new tools of proactive health are enabling and, in many cases, demanding new economic models, new therapeutic modalities, and new organizational structures.

This section explores the transition from the "what" of technology to the "how" of its implementation, analyzing the shift to value-based care, the rise of consumer-centric business models, the emergence of digital therapeutics, and the evolution of the healthcare workforce and facility.

The Value-Based Care Imperative

The most critical transformation in the business of healthcare is the systemic shift away from the traditional fee-for-service (FFS) reimbursement model toward Value-Based Care (VBC).

The FFS model compensates providers for the volume of services they deliver, creating a perverse incentive structure that rewards more procedures regardless of whether they improved patient health.

VBC fundamentally inverts this logic. Reimbursement is tied to performance on metrics of quality, cost-efficiency, and patient satisfaction, thereby aligning financial incentives with the goal of keeping people healthy.

This makes VBC the natural and necessary economic engine for a preventive health ecosystem.

VBC Success Stories

1

Geisinger Health System

Used predictive AI to identify high-risk patients with chronic conditions, leading to a 10% reduction in avoidable emergency department visits. Their STAIR program uses NLP to scan radiology reports for incidental lung nodules, cutting specialist wait times from 112 days to just 12. Generated over $25 million in gross savings for Medicare.

2

Hattiesburg Clinic

Used EHR data to analyze care team structures, leading to a reorganization that improved quality and lowered costs. Their Chronic Care Management program increased hypertension control rates from 54% to 70%, while their Transitional Care Management program reduced 30-day readmission rates by 30%. Saved Medicare over $66 million since 2016.

These cases demonstrate a critical point: VBC is the economic framework that makes investment in proactive health technologies sustainable.

The Rise of Healthcare Subscriptions

As technology empowers patients and shifts the focus of care toward continuous wellness management, healthcare is undergoing a process of consumerization. This is giving rise to new business models that mirror those seen in other consumer-facing industries.

Subscription models offer a bundle of services—such as primary care, mental health support, and wellness coaching—for a predictable, recurring fee. This provides a steady revenue stream for the provider and transparent costs for the consumer.
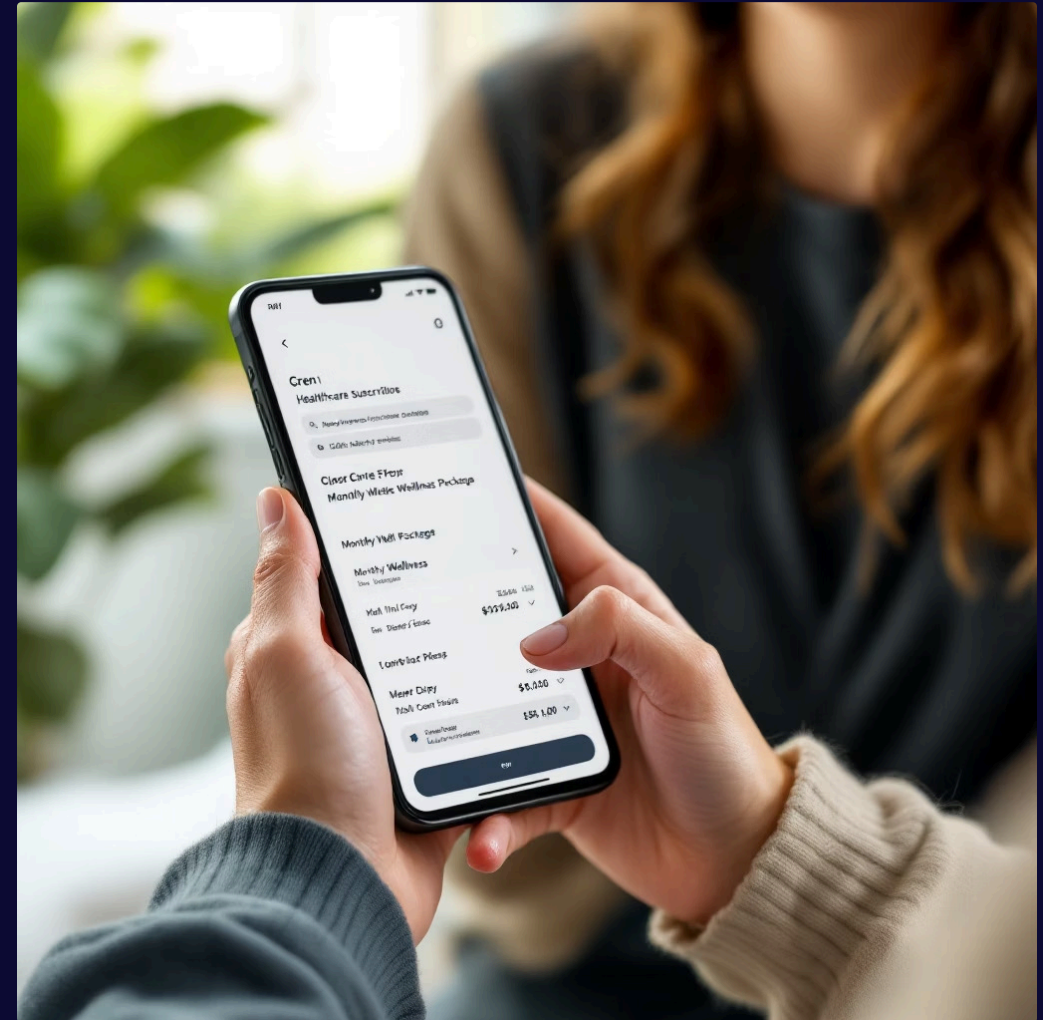
Companies like Forward Health and Nabla exemplify this trend, moving away from the transactional nature of fee-for-service toward ongoing health relationships.

B2B2C: The Employer Channel

The B2B2C Model

Digital health providers partner directly with large employers to offer services to their employees as a health benefit.

Employer Motivation

Employers have a powerful financial incentive to keep their workforce healthy, as this directly impacts productivity and reduces absenteeism by up to 30%.

Market Traction

Mental wellness app Calm has partnered with over 1,500 organizations, while Teladoc built a significant business on employer subscriptions, driving 69% revenue CAGR.

The B2B2C model serves as a crucial accelerator for adoption, bypassing many traditional barriers by leveraging the existing corporate benefits infrastructure as a powerful distribution channel.

The Health "Super-App"

The logical endpoint of the consumer-centric, platform-based trend is the emergence of the "health super-app" - a single, integrated digital platform that serves as the primary interface for an individual's entire health journey.

Virtual Consultations

On-demand access to healthcare providers through secure video calls

Medication Management

Prescription ordering, reminders, and delivery services

AI Health Coaching

Personalized wellness advice and behavior change support

Health Records

Comprehensive personal health data and insurance management

Emerging Healthcare Business Models

Value-Based Care	Payers, Health Systems	Shared savings/losses based on quality targets	Robust data analytics, care coordination, patient engagement
D2C Subscription	Individual Consumers	Recurring monthly/annual fees	Strong brand, excellent user experience, clear value proposition
B2B2C (Employer)	Large Employers	Per-employee-per-month fees	Demonstrable ROI, integration with benefits, high engagement

Each model creates different incentives and requires different capabilities. The most successful organizations will likely blend elements of multiple models to serve different market segments.

The Digital Pharmacy: Digital Therapeutics (DTx)

A new and distinct class of medical intervention is rapidly moving from the periphery to the mainstream: Digital Therapeutics (DTx). These are evidence-based, software-driven therapeutic interventions designed to prevent, manage, or treat medical disorders.

Unlike general wellness apps, DTx must undergo rigorous clinical testing to prove safety and efficacy and are subject to regulatory oversight by bodies like the FDA.

The global DTx market is projected to reach between USD 56-90 billion by 2034, with a sustained CAGR of over 21%.

FDA-Authorized Digital Therapeutics

Mental Health & Neurology

Somryst® for chronic insomnia, reSET® for substance use disorders, and EndeavorRx® - a video game-based therapy for children with ADHD.

Diabetes & Endocrinology

BlueStar® by WellDoc, d-Nav® by Hygieia, and Insulia® by Voluntis provide algorithms and coaching to help patients better manage insulin dosing and lifestyle.

Other Chronic Conditions

Propeller Health for asthma/COPD, Mahana™ for IBS using cognitive behavioral therapy, and RelieVRx using virtual reality for chronic lower back pain.

DTx represents more than just a new product category; it signifies a fundamental convergence of the technology and pharmaceutical industries, creating new business models and competitive dynamics.

FDA-Authorized Digital Therapeutics Showcase

reSET-O™	Pear Therapeutics	Opioid Use Disorder	De Novo (2018)
EndeavorRx®	Akili Interactive	ADHD	510(k) (2020)
RelieVRx	AppliedVR	Chronic Lower Back Pain	De Novo (2021)
Mahana™ IBS	Mahana Therapeutics	Irritable Bowel Syndrome	De Novo (2021)

For pharmaceutical companies, DTx offer a pathway to move "beyond the pill." By pairing a traditional drug with a companion DTx, they can create an integrated therapeutic solution that improves patient adherence and demonstrates superior value to payers.
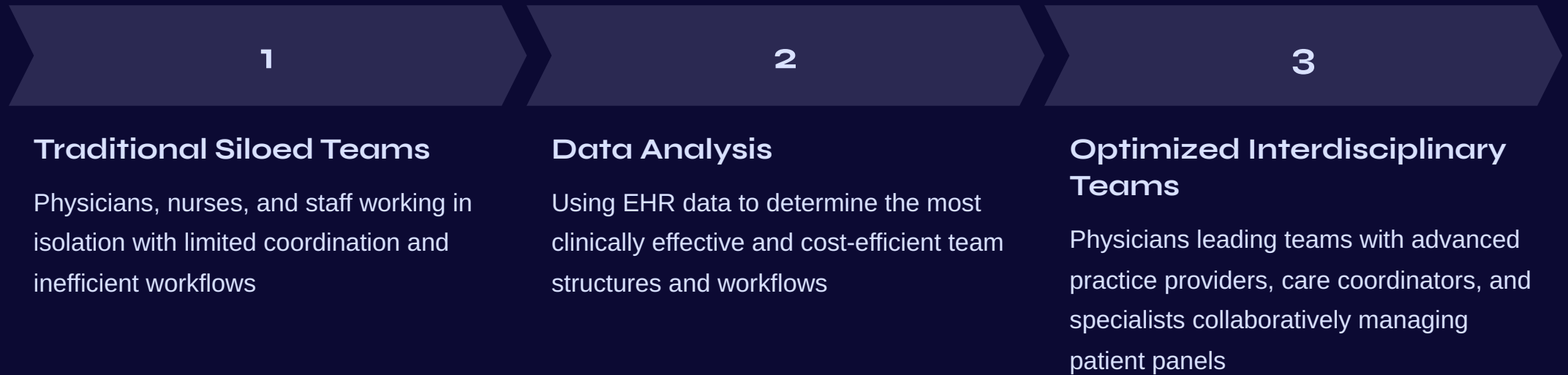
The Evolving Care Team

The profound shifts in technology and business models are inevitably forcing a corresponding evolution in the healthcare workforce. The skills required to deliver care and the composition of clinical teams are being redefined to fit the new proactive, digitally-enabled ecosystem.

The ability to work with data, manage virtual patient interactions, and integrate technology into clinical workflows is becoming paramount. This is creating demand for entirely new roles like "healthcare data specialist," "telehealth professional," and "virtual care nurse."

Technology is increasingly viewed as a critical tool to bridge persistent labor shortages, particularly affecting physicians and registered nurses, with rural areas being the hardest hit.

Data-Driven Care Team Redesign

1

Traditional Siloed Teams

Physicians, nurses, and staff working in isolation with limited coordination and inefficient workflows

2

Data Analysis

Using EHR data to determine the most clinically effective and cost-efficient team structures and workflows

3

Optimized Interdisciplinary Teams

Physicians leading teams with advanced practice providers, care coordinators, and specialists collaboratively managing patient panels

Hattiesburg Clinic provides a clear model for this approach. By analyzing their EHR data, they established a collaborative model with physicians leading teams that include advanced practice providers to co-manage patient panels.

The "Green" and "Smart" Facility

The physical infrastructure of healthcare is also undergoing a transformation. There is a growing focus on sustainability and environmental responsibility in the design and operation of healthcare facilities.

This includes a push for LEED-certified hospital construction, the transition to renewable energy sources like solar power for clinics, and the adoption of sustainable procurement policies that ban harmful materials.

This trend is driven by a combination of environmental consciousness, a recognition of the link between environmental health and public health, and the long-term operational efficiencies gained from energy-efficient design.

The Hospital of the Future

High-Acuity Hub

The physical hospital building will increasingly specialize in complex surgeries, intensive care, and emergency interventions

Outpatient Centers

Network of specialized ambulatory facilities for diagnostics, minor procedures, and in-person consultations

Virtual Care Platform

Comprehensive telehealth infrastructure for remote consultations, monitoring, and care coordination

Hospital-at-Home

Advanced care delivered in patients' homes through remote monitoring, visiting clinicians, and digital therapeutics

The traditional hospital is evolving into a decentralized network of care, promising to reduce capital expenditures, demanding new operational models, and improving the patient experience.

The Patient as Partner

Behavioral Shifts and Engagement

The success of the entire proactive health revolution hinges on its most critical and complex component: the patient. The new ecosystem is predicated on the idea of the patient as an active, engaged partner, not a passive recipient of care.

This requires a deep understanding of evolving patient behaviors, their willingness to adopt new technologies, their attitudes toward data sharing, and the factors that drive or inhibit their engagement.

The Empowered Consumer

80%
Telehealth Adoption

Percentage of U.S. consumers who reported having used a telehealth service by 2022, up from 72% in 2021.

46%
Wearable Ownership

Percentage of U.S. consumers owning a device like a smartwatch or fitness tracker in 2022.

55+
Growing Demographic

Age group showing fastest growth in digital health adoption, along with rural residents and lower-income populations.

Telemedicine has crossed the chasm into mainstream use, driven by convenience. A majority of consumers now prefer telemedicine over in-person visits for routine needs like prescription refills and minor illnesses.

Barriers to Digital Health Adoption

Cost

The single most significant barrier for consumers. It is the top reason cited for not adopting a digital health technology and the primary reason for discontinuing its use.

Digital and Health Literacy

Lack of familiarity and comfort with technology, particularly among older adults, compounded by difficulty understanding the benefits or interpreting health data.

Trust and Clinical Evidence

63% of healthcare practitioners cite perceived lack of robust clinical evidence as a major barrier to recommending digital health solutions to patients.

The Digital Divide

Fundamental disparities in access to infrastructure like reliable high-speed internet create a divide that excludes individuals based on geography or socioeconomic status.

The Adoption-Value Gap

These trends reveal a dangerous "Adoption-Value" gap. The very populations who stand to gain the most clinical benefit from proactive digital health tools are often the least likely or able to adopt them.

Wearable ownership is highest among those who rate their health as "excellent" (62%) and lowest among those who rate it as "very poor" (23%).

If this trend is left unaddressed, the proactive health revolution risks inadvertently widening the health equity gap, improving outcomes for the healthy and affluent while leaving vulnerable populations further behind.

The Data-Sharing Dilemma
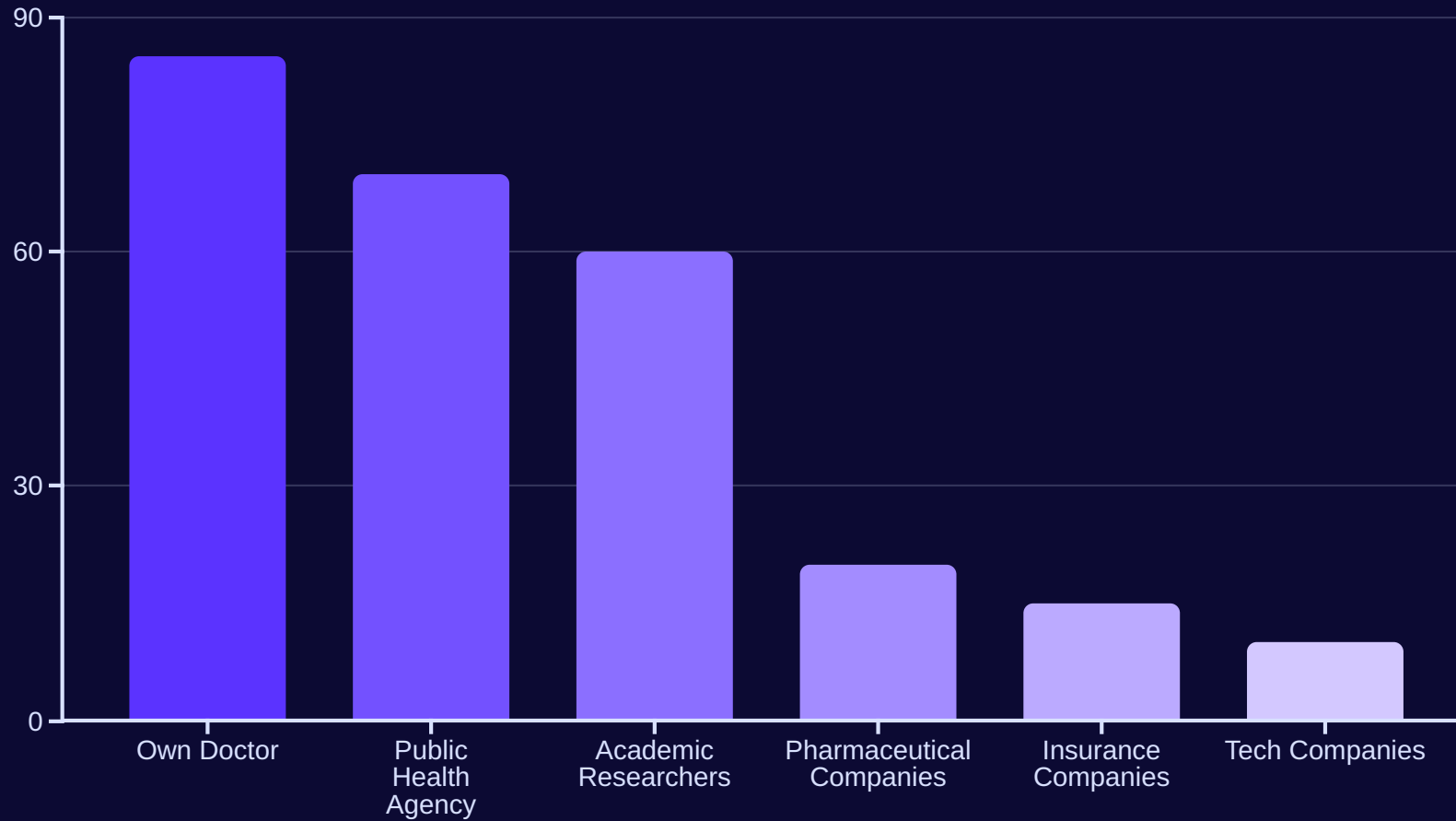
The entire proactive health ecosystem is built on a foundation of data, yet a deep trust deficit threatens this essential fuel source. People are generally willing to share health data for direct care but skeptical about sharing with commercial entities.

Understanding Data Sharing Attitudes

Primary Concerns

- Privacy and Security: Fear of data breaches and unauthorized exposure of sensitive information

- Data Misuse: Concerns that data will be used for purposes they did not consent to

- Lack of Control: Desire for greater transparency and control over who can access their data and for what purpose

Primary Motivators

- Altruism: Willingness to contribute if it serves a greater public good

- Personal Benefit: Improving one's own direct medical care

- Anonymization: Comfort increases significantly when data is anonymized

- Trust: The single most important factor determining willingness to share

This creates a fundamental conflict: the very entities with the resources to develop AI models and digital therapeutics—for-profit technology and pharmaceutical companies—are the organizations that the public trusts the least with their data.

Remote Patient Monitoring: The Proactive Patient

For patients living with chronic conditions, Remote Patient Monitoring (RPM) stands out as a cornerstone technology in the shift to proactive health, empowering them to become active participants in their own care.

A growing body of research demonstrates that RPM programs significantly decrease emergency department visits, reduce the length of hospital stays, and prevent costly readmissions. The technology is particularly effective for managing conditions like hypertension, diabetes, heart failure, and COPD.

Patient satisfaction with well-run RPM programs is consistently high, with one large study finding that 93.6% of participants were pleased with their experience.

RPM Implementation Challenges

Workflow Integration

Integrating the stream of RPM data into existing clinical workflows and EHR systems without creating new administrative burdens and information silos.

Patient Adherence

Success depends on patients consistently and correctly using monitoring devices, requiring user-friendly technology and effective onboarding and support.

Data Overload

The continuous flow of data from hundreds or thousands of patients can overwhelm clinical staff without new workflows and dedicated personnel.

Reimbursement Models

While CMS has established codes for RPM services, navigating billing requirements and justifying initial investment remains challenging, especially for smaller practices.

Beyond Technology: The Service Wrapper

Patient Onboarding

Comprehensive education on device use and the importance of monitoring

Ongoing Support

Technical assistance and troubleshooting to maintain device functionality

Clinical Workflow

Efficient processes for data review, alert triage, and patient follow-up

Motivational Coaching

Regular check-ins to encourage adherence and address concerns

Successful RPM is not fundamentally a technology problem. The core challenge is one of human-centered service design. The most successful providers will be those who master the art and science of service design, not just hardware engineering.

Patient Digital Health Journey

Technology Adoption	Telemedicine: 80%, Wearables: 46%	Convenience, Empowerment	Cost, Digital Literacy
Data Sharing	With doctor: 70-90%, With tech company: <20%	Personal Benefit, Altruism	Privacy Concerns, Lack of Trust
Active Engagement	RPM satisfaction: >90%	Improved Outcomes, Connection to Care Team	Complexity, Lack of Feedback

Each stage of the patient journey presents unique challenges and opportunities. Success requires addressing the specific drivers and barriers at each point to create a seamless experience that builds trust and engagement over time.

Governance in the Digital Age

Navigating Ethical and Regulatory Hurdles

The rapid integration of data-driven, AI-powered technologies into healthcare creates unprecedented challenges for governance. The very tools that promise to revolutionize care also introduce new risks related to safety, privacy, bias, and equity.

Navigating this new landscape requires a sophisticated and adaptive approach to regulation and a steadfast commitment to ethical principles.

The Regulatory Maze

FDA

Primary regulator for products making medical claims. Reviews Software as a Medical Device (SaMD) through 510(k), De Novo, and PMA pathways based on risk level.

FTC

Covers consumer protection for direct-to-consumer health apps. Enforces Health Breach Notification Rule and polices deceptive marketing claims.

State Regulators

Enforce state-specific laws governing telehealth licensing and data privacy regulations like California's CCPA and Washington's My Health My Data Act.

HHS/OCR

Enforces HIPAA, setting standards for protecting privacy and security of Protected Health Information handled by covered entities and business associates.

For digital health companies, successfully navigating this intricate regulatory maze has become a significant competitive factor, creating a "regulatory moat" that protects established players.

The Ethical Compass: Algorithmic Bias

AI systems are not inherently objective; they learn from the data they are trained on. If that historical data reflects existing societal biases or inequities in the healthcare system, the AI will learn, perpetuate, and even amplify those biases.

A well-documented real-world case involved a widely used healthcare algorithm that systematically underestimated the health needs of Black patients. The algorithm used prior healthcare costs as a proxy for sickness, failing to account for the fact that Black patients often have less money spent on their care.

This highlights the ethical imperative to ensure training data is diverse and representative and to actively audit algorithms for bias to prevent exacerbating existing disparities.

The "Black Box" Problem

1

2

3

Complex AI Decision-Making

Many powerful AI models operate as "black boxes" with internal processes so complex they are not readily interpretable, even by their developers

Accountability Crisis

When AI makes an error leading to patient harm, it becomes difficult to determine liability - is it the software developer, the hospital, or the clinician?

Legal Evolution

New legal doctrines and standards for "algorithmic malpractice" will emerge, along with specialized liability insurance for AI-related medical errors

This opacity creates a serious accountability crisis that will force a paradigm shift in the legal and insurance frameworks surrounding medical malpractice.

Bridging the Digital Divide

The promise of a technologically advanced, proactive healthcare system is shadowed by the significant risk that it will become a two-tiered system, delivering hyper-personalized, preventive care to the affluent and tech-savvy while leaving vulnerable populations further behind.

This "digital divide" is a critical challenge to the ethical principle of justice and must be addressed as a central design consideration, not as an afterthought.

The divide exists across multiple dimensions: access to infrastructure, digital and health literacy, and inclusive design that accommodates diverse needs.

Health Equity as Business Imperative

> (i) The digital divide is not just a social or ethical issue; it is a fundamental business model problem for the new ecosystem. VBC and population health models are predicated on managing the health of an entire defined population. Their financial success depends on having accurate data from that **entire** population.

The highest-risk and highest-cost patients within any population are often those who are older, have multiple chronic conditions, and have lower incomes—the very groups most likely to be on the wrong side of the digital divide.

If these high-risk individuals cannot or do not use the digital monitoring and engagement tools, their data will be missing from the system. This creates a critical failure point where risk-prediction algorithms will be trained on incomplete and biased data, leading to inaccurate predictions and predictable financial losses under VBC contracts.

Therefore, investing in solutions to bridge the digital divide is not just a moral imperative for health equity; it is a core business requirement for success in value-based, population-level healthcare.

Governance Framework for Proactive Digital Health

Regulatory Approval	Navigating complex pathways for SaMD and adaptive AI	FDA via 510(k), De Novo, and PMA pathways	Market access denied, wasted R&D investment
Data Privacy & Security	Protecting sensitive health data from breaches	HHS/OCR (HIPAA), FTC (HBNR), State laws	Financial penalties, loss of patient trust
Algorithmic Ethics	Mitigating bias and establishing liability	Ethical principles, emerging legal standards	Exacerbating inequities, novel liability
Health Equity & Access	Overcoming the "digital divide"	Justice principle, infrastructure programs	Two-tiered system, VBC model failure

Strategic Recommendations

Roadmap for Stakeholders

1

For Healthcare Providers

1. Commit to Value-Based Care as the economic framework for proactive health
2. Invest in data infrastructure and analytics capabilities
3. Redesign care teams and upskill the workforce for digital competency

2

For Payers

1. Accelerate VBC and reimbursement innovation for preventive care
2. Become active partners in population health management
3. Empower members with validated digital health tools and education

3

For Technology & Pharma Companies

1. Make trust and transparency a core product feature
2. Prioritize rigorous clinical validation to build regulatory moats
3. Design for equity from day one to ensure broad adoption

4

For Policymakers

1. Modernize and harmonize regulatory frameworks for digital health
2. Mandate and fund a national health data infrastructure
3. Invest in bridging the digital divide through infrastructure and literacy

The 10-Year Horizon: Healthcare in 2035

The Patient Experience

Health status continuously monitored by biosensors in wearables, home environment, and clothing. Personal "Health AI" agent provides real-time coaching and detects subtle deviations from baseline. Care team proactively reaches out when risk is identified rather than waiting for symptoms.

The Provider Experience

Primary care physicians transform from reactive problem-solvers to proactive health managers. Day begins with AI-prioritized dashboard highlighting high-risk patients. Interdisciplinary teams execute coordinated outreach, with most interventions handled remotely and in-person visits reserved for complex cases.

The System

Healthcare operates almost entirely on VBC models with payments tied to outcomes. Hospitals evolve into lean centers for high-acuity interventions, while chronic disease management and wellness support are delivered remotely. Data flows seamlessly between all stakeholders, governed by patient-controlled consent.

The Enduring Challenge

This vision of 2035 is not a utopia. The challenges of 2025 will evolve, not disappear. The ethical governance of ever-more-powerful AI will be a constant societal debate. Ensuring the security of this vast, interconnected web of health data against sophisticated cyber threats will be a perpetual arms race.

And the most enduring challenge will be the ongoing societal commitment required to ensure that the profound benefits of this proactive health revolution are shared by all, and that technology serves to close, rather than widen, the gaps in health equity.

The journey to 2035 will be one of continuous innovation, adaptation, and a relentless focus on the foundational goal: making better health easier for everyone.

Driving Proactive Health: Futurist Jim Carroll

Jim Carroll is a leading global futurist and innovation expert, renowned for his insights into disruptive trends. His healthcare work focuses on accelerating the shift to proactive health, leveraging technology like AI, genomics, and digital solutions. He guides top organizations worldwide in transforming care delivery, emphasizing strategic foresight and continuous innovation for a healthier future.

Explore Jim's Healthcare Insights