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The Longevity Equation:

How Healthspan and Wealthspan Intersect

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Foreword

This report is written from an interdisciplinary vantage point and through the lens of applied financial ethics. We examine the intersection between healthy longevity and financial well-being for all.

The Longevity Equation and its Matrix Model² serve as the initial conceptual framework for cross-sector dialogue and collaboration. They emerged through the application of the values-informed framework called contributive justice theory, which seeks to design institutions that allow each person to develop and contribute their capacities throughout life.³ This theory was used as a design principle and has informed the analysis of interviews with key thought leaders in relevant fields (n=19); provided insight into case examples that illustrate applications of the values-informed frame; and guided supportive and supplemental desktop research in these same domains.

What makes this report unusual is its use of an equation. At first, one might not expect mathematics in a discussion of longevity, health, and finance. However, the choice is intentional, as equations show how outcomes depend not on one factor alone but on how elements work together. The Longevity Equation is not a reduction of life to numbers as a definitive, validated mathematical equation, but rather as a lens and way to reflect and act. It invites us to see that longevity is not about isolated measures of success, but about alignment, integration, balance, and meaningful contribution.

The Longevity Equation and corresponding Matrix Model are invitations for dialogue, further research, critique, and iteration as new evidence and experience accrue. We offer it as a pathway for collaboration.

Diane Ty

Managing Director, Future of Aging
Milken Institute

Introduction

Globally, people are living longer,⁴ but not all lives are extending equally. For example, in the US, people in the highest income quartile live more than a decade longer on average than those in the lowest.⁵ Similar gaps exist in healthspan (the years lived in good health), as individuals with higher education and financial resources experience significantly more healthy years than those with fewer resources.

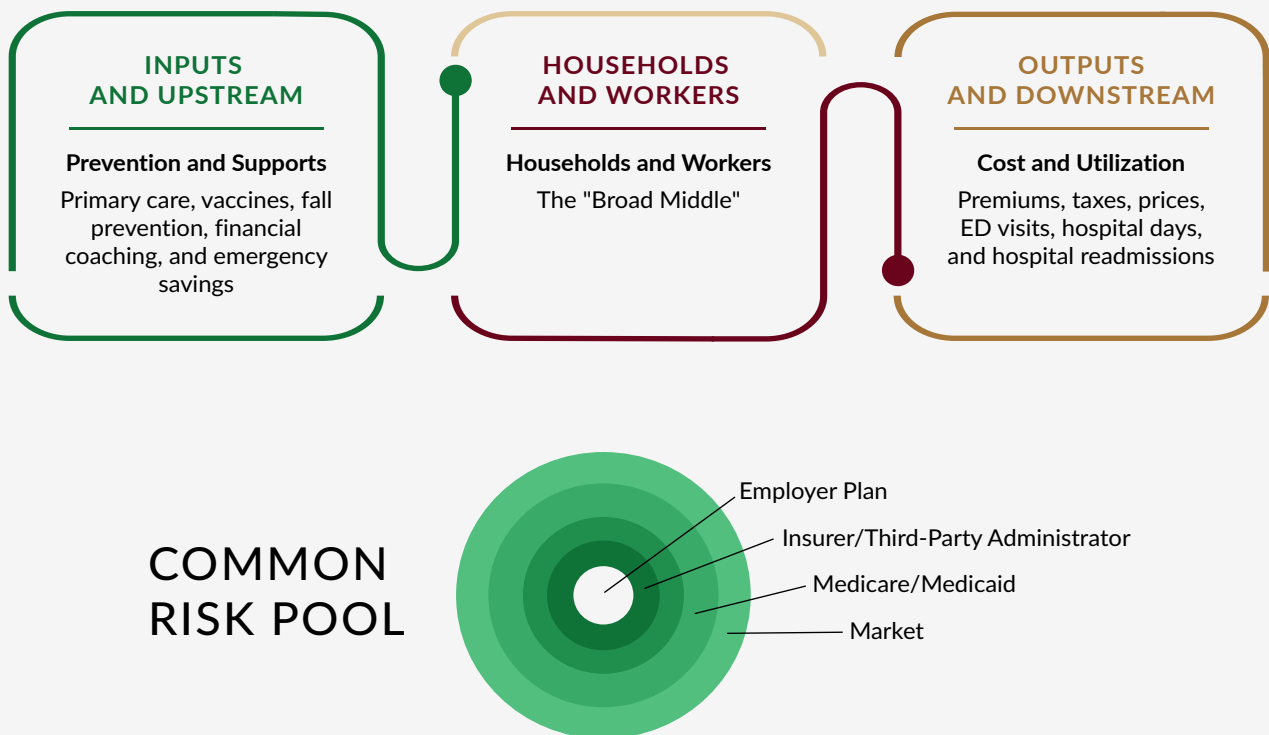
These disparities reveal that longevity is not only about biology but also about the social and financial conditions that shape life trajectories. The result is a widening divide. Some people experience decades of vitality, while others face premature aging, financial strain, chronic illness, and premature death.

We developed the Longevity Equation and Matrix Model to provide a conceptual framework to address these gaps by integrating financial well-being and health outcomes, offering a way to understand, measure, and ultimately reduce inequities in how long and how well people live.

Guided by interviews with leaders across a broad range of disciplines and supplemented by desktop research and the synthesis of learnings through the lens of moral philosophy, financial ethics, and public health, we emphasize practical, actionable steps for employers and health-care and financial institutions, while acknowledging complementary roles for public programs. Concise case examples are woven throughout this report to demonstrate the integration of health and wealth applications in action.

As risk and costs are part of an interdependent system, each person's health-care use creates financial ripples for others (see Figure 1). Improving upstream prevention and financial resilience, especially for middle-income households and individuals, can reduce downstream costs for all.

Figure 1: Risk- and Cost-Sharing in an Interdependent System



Source: Milken Institute (2025)

The Longevity Equation, together with the resulting conceptualizations in the Matrix Model, offers more than a theoretical lens. It establishes a framework for an evidence agenda to track what works. By linking healthspan and wealthspan through shared goals, levers, and metrics, this approach highlights our collective stake in a shared risk pool and underscores that people's actions are interconnected. It provides both ethical clarity and practical traction for advancing quality of life, purpose, and financial resilience across the life course.

President John F. Kennedy captured this aspiration in 1963 when he observed, "It is not enough for a great nation merely to add to the years of life. Our object also must be to add new life to those years."⁶ His words still resonate. The challenge before us is to ensure that longevity gains translate into lived well-being. To see how this challenge took shape, we turn to the historical policy choices that defined the relationship between health and wealth in America.

A Historical Lens on Health and Wealth

“To achieve longevity fitness, we need to bridge the domains of health and wealth, and spark new thinking, tools, and policies to help individuals and society extend vitality, purpose, and quality of life.”

SURYA KOLLURI

Head, TIAA Institute

The American retirement and health financing story has been a century-long social contract in motion. Beginning with the Social Security Act of 1935 (SSA) and expanded through Medicare and Medicaid in the 1960s, these programs reflect a shared societal commitment to mitigating the risks of aging. Over time, responsibility has shifted from employer pensions to individual savings, yet the balance between personal responsibility and shared risk remains central to the nation’s evolving system.

Social Security created a baseline of income security for older Americans by pooling risk across generations through social insurance. It was a response to the new vulnerabilities of an industrial economy—wage dependence, urbanization, and the Great Depression’s collective shock.⁷ Over the next two decades, Congress widened this income floor. The Act provided for payments to survivors and dependents (1939), and then later for workers with disabilities via the 1954 disability freeze,⁸ and then ultimately there was the introduction of disability cash benefits in 1956.⁹

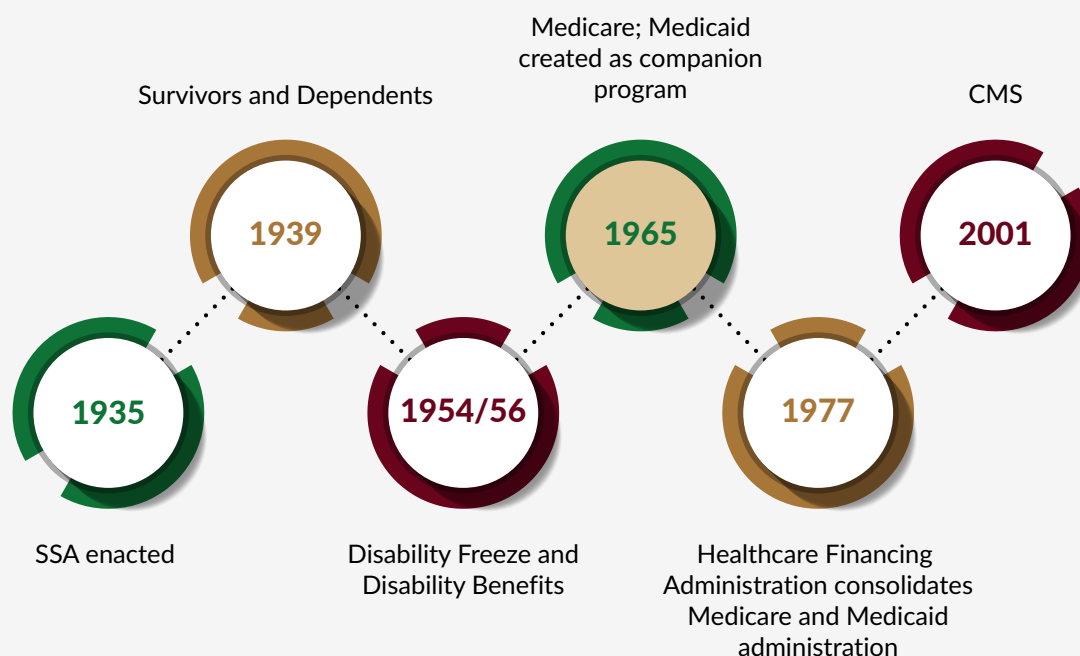
In parallel, national policy choices in the 1940s and 1950s, wage controls, favorable tax treatment, and union bargaining helped to establish employer-sponsored health insurance as the dominant model for working-age coverage.¹⁰ While this model extended protection to millions, it left gaps for those outside traditional employment, gaps that Medicare and Medicaid later sought to fill.

By the mid-1960s, lawmakers confronted a second systemic risk: medical cost exposure. Without dedicated health coverage for older adults and people with disabilities, rising hospital and physician bills could quickly erode Social Security retirement benefits.

In 1965, through amendments to the Social Security Act, Congress created Medicare, extending health insurance to most people aged 65 and over,¹¹ and later (1956) to many people with disabilities. Medicare excluded long-term care (LTC), as it was considered custodial rather than medical care, leaving families and Medicaid to fill the gap. Within the program’s first three years, nearly 20 million beneficiaries had enrolled.¹² This was evidence that there was both need and broad public uptake.

At the same time, Congress established Medicaid as a companion program to finance medical care for low-income individuals through a federal–state partnership. The two programs were soon administered together. In 1977, reorganization created the Health Care Financing Administration “to manage the Medicare and Medicaid programs,” which was renamed the Centers for Medicare & Medicaid Services (CMS) in 2001.¹³

Figure 2: Origins of the American Solution to Healthspan and Wealthspan Intersectionality



Source: Milken Institute (2025)

The most recent major expansion of health coverage came with the Affordable Care Act (ACA) in 2010. The ACA extended insurance to millions through marketplaces and Medicaid expansion, while codifying “essential health benefits” such as vaccines, cancer screenings, mental health care, and preventive services.¹⁴ These provisions set a national floor for preventive coverage, influencing employer-based plans, Medicare, and Medicaid to follow suit.

The United States built Social Security and later Medicare as national social insurance mechanisms to ensure income continuity in retirement and access to essential health care.¹⁵ However, the social care system was not designed to support up to 30 years of retirement or older adults experiencing a decade or more of poor health. The gap between lifespan and healthspan in the US is 12.4 years,¹⁶ underscoring that longevity gains are not consistently matched by years of good health.

Over recent decades, policy and market choices moved many employers from defined benefit pensions to defined contribution plans, effectively privatizing retirement preparation and placing longevity, market, and decumulation risks on individuals. At the same time, retiree health-care

expenses are projected to keep rising. Today, a 65-year-old couple can expect to pay on average \$472,000¹⁷ in out-of-pocket health and LTC expenses.

As a result, households now have a two-front exposure. Medical spending continues to climb even as the “architecture of retirement” has shifted risk from pooled guarantees to individualized accounts. Individuals are their own “chief risk officers,” even as longevity increases and health costs rise.

This core challenge has been underscored in academic research,¹⁸ which has similarly documented how rising health-care costs, gaps in coverage, and limited financial resources increasingly threaten the stability of older adults. This particularly impacts people in the “broad middle,”¹⁹ the large number of households that are not poor enough to consistently qualify for means-tested supports or wealthy enough to self-insure against health and longevity risk. This group faces simultaneous challenges, including illnesses that could erode savings, accrue medical debt, and impact future earnings, as well as market volatility that threatens existing income.

This segment of the population is ideal for scaling small improvements in healthspan and wealthspan. These innovations can be advanced through shared financing mechanisms—such as pooled premiums and targeted taxes, and rapid institutional action focused on benefit design, navigation, and place-based anchor strategies (see Case Example: The Anchor Strategy in Practice: Building Community Wealth to Improve Community Health).

When income and health protections evolve together, they stabilize both healthspan and wealthspan, preventing financial stress and toxicity from undermining health and vice versa. Our case for alignment is straightforward: financial security and health protections should develop in step with one another. When they do, both healthspan and wealthspan are reinforced, avoiding the spiral where financial strain worsens health or poor health erodes finances. Put simply, institutions that benefit from longer lives also bear responsibility to sustain those lives—through both financial and clinical support.

Interviewees stressed that alignment is a strategic imperative. Health-care leaders see upstream prevention and social supports as essential to affordability, improved patient outcomes, and reduced costs. Financial leaders see health as an asset that protects savings and insurability.

When It Hurts: Financial Stress and Financial Toxicity

Financial stress broadly refers to the psychological strain²⁰ that arises when individuals face difficulty meeting financial obligations, leading to anxiety, reduced well-being, and impaired decision-making. Financial toxicity is a health-care concept²¹ and refers to the harmful economic side effects of medical treatment—such as out-of-pocket costs, lost income, and debt—that reduce treatment adherence and worsen health outcomes. In essence, financial stress is a general response to financial insecurity, while financial toxicity is a specific form of financial harm tied directly to health-care costs.

From the creation of Social Security in the 1930s to the rise of employer-sponsored benefits in the mid-20th century, and later Medicare, Medicaid, and the ACA, US policy choices have repeatedly sought to close gaps left by markets and to protect people against the risks of age, illness, and income loss. However, these efforts have been partial and uneven, leaving households to shoulder growing responsibilities once managed collectively. From the perspective of contributive justice, this history underscores that health and financial security are not private goods alone but shared conditions that enable people to act, contribute, and flourish. Our case for alignment is straightforward: institutions that prosper from long lives share duties to support those lives—financially and clinically—over time. This ethical imperative points us toward a new frame for practice and policy, captured in the Longevity Equation.

Our case for alignment is straightforward: institutions that prosper from long lives share duties to support those lives—financially and clinically—over time.

The Longevity Equation

The Longevity Equation²² and the resulting conceptualizations in the Matrix Model are designed to simplify and unify complex topics to drive dialogue and strategy, while making externalities visible. For example, a workplace that reduces the potential of financial toxicity (e.g., medical debt, lost income during caregiving) is not only doing the “right thing,” it is dampening a community cost driver that otherwise reverberates through premiums and public budgets. The equation thus provides a shared return on investment (ROI) logic for both health-care and finance leaders to prioritize upstream moves.

“Preventive services that avoid emergency and inpatient care lower health insurance premiums and system costs, while improving well-being.”

STEVE PARODI, MD

Executive Vice President, The Permanente Medical Group

The Longevity Equation

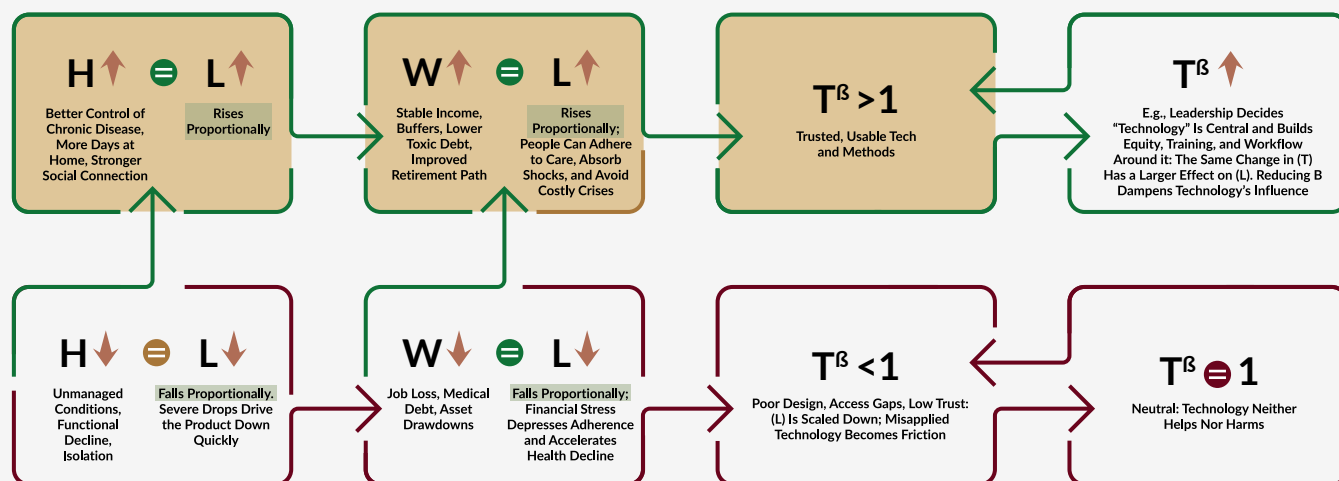
$$L \approx (H \times W) \times T^B$$

We write longevity outcomes, L , as the interaction of two mutually reinforcing variables shaped by context:

- H (healthspan): years lived in good health and functional capacity
- W (wealthspan): years of financial stability enabling choice and security
- T (technology multiplier): raises or lowers the slope of improvement depending on trust, usability, equity, and integration into human activity ($\beta=1$ when neutral; $\beta>1$ when well-governed; $\beta\approx 0$ or negative when access and trust are low). Here technology is not limited to devices or software. Following common usage, we treat technology as any method, skill, or organized system that enables a practical goal.²³

This intersectional frame matters because care is financed through shared pools such as premiums, taxes, and cross-subsidies. When the broad middle lacks resilience, avoidable crises spill into emergency and inpatient utilization, raising costs for everyone. When the broad middle gains literacy, financial buffers, and access to integrated care, utilization shifts upstream, improving the equation for all.

Figure 3: Understanding General Movements in the Equation



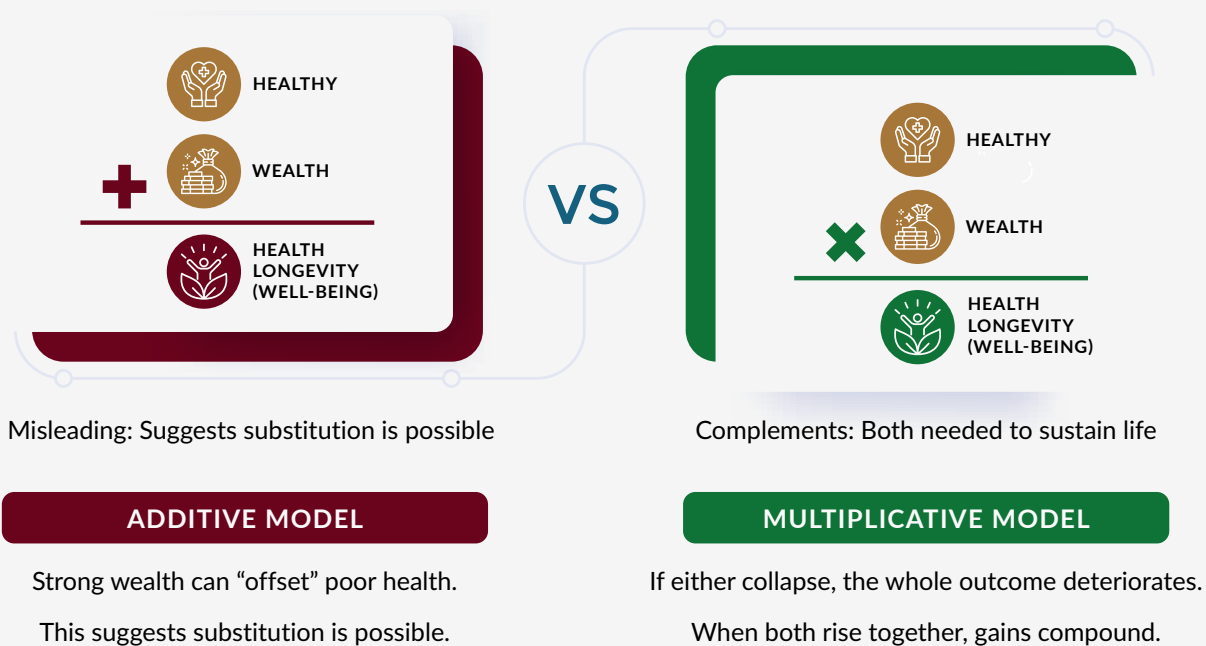
Source: Milken Institute (2025)

EDGE BEHAVIOR AND FAIRNESS IMPLICATIONS

Because (L) is expressed as a "product," large deficits in either (H) for healthspan or (W) for wealthspan can overwhelm the equation and dominate the result. This design is intentional. It highlights populations where a single bottleneck, such as the absence of accessible primary care or the lack of even a minimal financial buffer, can collapse overall outcomes. When that collapse occurs, it does not remain an individual problem. It reverberates outward in the form of higher medical costs, increased reliance on public programs, and greater strain on the shared pools of risk that finance health and retirement systems.

At the same time, the product structure also highlights the positive side. It rewards integrated strategies that improve health and wealth together. Efforts that align preventive care with financial readiness (e.g., workplace wellness tied to retirement savings, or health systems that partner with financial institutions on community resilience) can create multiplicative benefits. This is precisely what the cross-sector leaders in our interviews emphasized. Progress is most durable when healthspan and wealthspan are advanced in tandem, rather than in isolation.

Figure 4: Understanding the Premise



Source: Milken Institute (2025)

ETHICAL FOUNDATIONS OF THE LONGEVITY EQUATION

The Longevity Equation emerged within the application of a values-informed framework called contributive justice theory. In the context of this model, contributive justice theory emphasizes that flourishing rests on reciprocal structures that encourage contributions over the course of one's life and that responsibility is shared by the institutions that benefit from longer lives.

From an ethical standpoint, this design principle matters because it resists purely individualistic or transactional notions of retirement and longevity. Contributive justice highlights that extended years of life are the result of not only individual effort but also institutional, technological, and social arrangements that sustain well-being across decades.

Thus, the equation is not just a model of measurement; it is a call to design systems where institutions that prosper from longer lives (e.g., employers, health systems, insurers, and financial firms) share responsibility for supporting them. In practice, this means aligning incentives so that long life becomes not a burden on individuals or the state, but a shared achievement of justice and reciprocity.

CROSS-CUTTING THEMES

1. Upstream prevention and navigation lower downstream acute conditions, care intensity, and premiums/costs.
2. Longevity literacy helps workers pace savings, use benefits, design decumulation, and avoid financial stress and financial toxicity.
3. The strategic focus should be the broad middle, not only the highest need or the ultra-affluent.
4. Integrated care and LTC access are weak spots in the US system.
5. The client (financial services) and patient (health care) bases are more stable when people are healthier and financially sturdy.

Case Examples of System-Level Designs

Below are two case examples of system-level designs and policies that move beyond fragmented, episodic care to create programs addressing the social determinants of health (SDOH). In the Longevity Equation, each domain of SDOH can be seen as a building block of contributive justice—the essentials of social life, such as education, employment, housing, food security, transportation, and access to health care. These building blocks provide the stability people need not only to flourish but also to give back and contribute more fully to their families, communities, and society.

CASE EXAMPLE

California Advancing and Innovating Medi-Cal—A State Medicare Demonstration Project

WHAT IT IS:

California Advancing and Innovating Medi-Cal (CalAIM) is a multiyear transformation of California's Medicaid health-care program (Medi-Cal) that pays for community support services such as housing navigation, medical respite, day rehabilitation, and sobering centers to provide health assistance beyond just clinical care. The model operates under federal waiver authority and requires managed care plans to offer locally available supports.²⁴

WHY IT MATTERS:

Clinicians can now refer eligible patients directly to these services, capabilities that did not previously exist at scale. Upstream supports have the intention to reduce avoidable emergency department visits and hospital admissions and can moderate premiums by shifting care to earlier, lower-cost settings. The CalAIM demonstration program shows how financing rules can begin the process of practical integration at the front line.

CHALLENGES:

Implementation is complex, requiring coordination across state agencies, managed care plans, and community-based providers. Capacity constraints, uneven availability of services, and the need for sustainable funding models limit how quickly the program's benefits can be scaled.

FIT WITH THE LONGEVITY EQUATION:

By embedding prevention and community supports into Medi-Cal, CalAIM shifts care upstream, strengthening healthspan (H) while reducing financial shocks that erode wealthspan (W). Even though the program focuses on low-income enrollees, stabilizing the risk pool benefits all, demonstrating how aligned incentives can improve overall longevity outcomes.

CASE EXAMPLE

Program of All-Inclusive Care for the Elderly—Integrated Care That Works

WHAT IT IS:

Program of All-Inclusive Care for the Elderly (PACE) is a comprehensive, community-based care model for adults aged 55 and over who meet a state's nursing-home level-of-care criteria. It grew out of the [On Lok program](#) launched in San Francisco in the 1970s²⁵ and became a permanent Medicare-Medicaid benefit in the Balanced Budget Act of 1997.²⁶ Local PACE organizations provide primary and specialty medical care, medications, rehabilitation, transportation, and long-term services and supports. These services are coordinated by an interdisciplinary team and financed through a single, capitated payment that blends Medicare and Medicaid. The aim is simple: keep frail older adults living safely at home and in their communities rather than in institutions.²⁷ After federal demonstrations in the 1980s–90s, Congress made PACE a permanent Medicare-Medicaid benefit.²⁸

WHY IT MATTERS:

PACE tackles systemic fragmentation, such as multiple payers and uncoordinated providers, that lead to preventable hospitalization, caregiver strain, and the financial risk of institutional care. One care team and one payment create accountability for the whole person—based medical, functional, and social needs, helping participants avoid crises that drive cost and decline.²⁹

CHALLENGES:

PACE now operates through local organizations in many states, but enrollment remains modest relative to need. Startup capital, regulatory approval, workforce demands, and transportation logistics slow growth. Eligibility is narrow (must meet nursing-home level of care and live in a defined service area), awareness is uneven, and some markets lack the scale to launch new programs. These factors constrain access even where the model is highly effective.³⁰

FIT WITH THE LONGEVITY EQUATION:

PACE improves healthspan by preventing decline and hospital use, and it protects wealthspan by avoiding catastrophic care transitions and supporting caregivers. The program can also leverage trusted and usable technology such as remote monitoring to aid adults. PACE is a working example of how the Longevity Equation can help the most vulnerable older adults and potentially be a model for other programs.

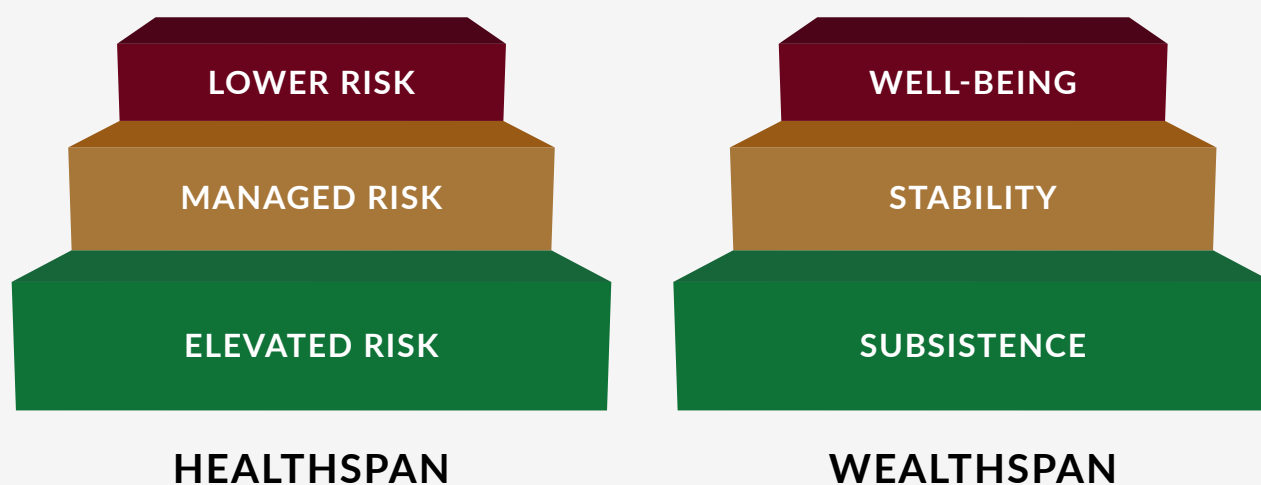
Programs such as CalAIM and PACE demonstrate how integrated strategies can bridge health and financial stability in practice, addressing both immediate needs and long-term resilience. These examples show the Longevity Equation at work, revealing how intentional design can stabilize outcomes when healthspan and wealthspan evolve together.

To build on this insight, we turn to the Matrix Model, which operationalizes the equation by mapping the intersections of health and wealth across different populations. In doing so, it highlights the weak points where gaps in one domain destabilize the other and points to where coordinated action can reinforce both. This move from equation to matrix provides a blueprint for strengthening the broader architecture of retirement, ensuring it is capable of supporting longer lives with dignity and reciprocity.

The Matrix Model

To understand the Matrix Model, it is important to understand that healthspan and wealthspan operate on continuums (see Figure 5). Within the health domain, there are population profiles of elevated health risk, managed health risk, and low risk. Similarly, within the wealth domain, there are population profiles of subsistence, stability, and financial well-being.

Figure 5: The Healthspan to Wealthspan Continuum



Source: Milken Institute (2025)

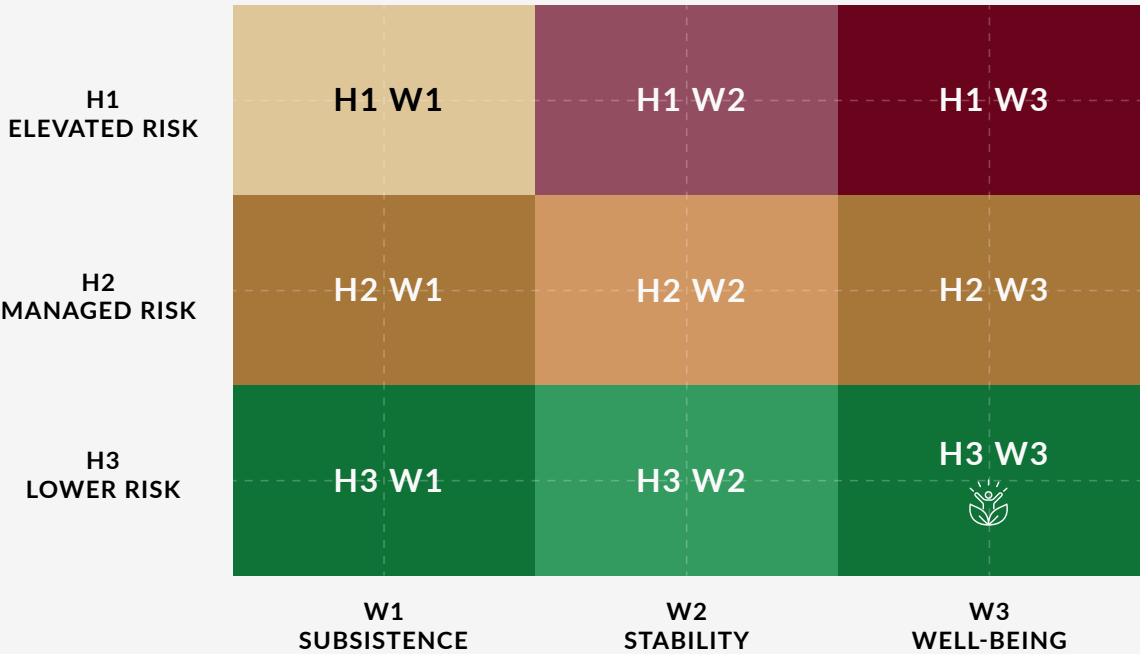
FROM THE CONTINUUM TO THE MATRIX MODEL

From the Longevity Equation, we learn that healthspan and wealthspan form two interlocking continuums across the life course. Where a person lands on the axis today reflects their current capacity and resources, but it does not predetermine their future outcomes. Movement along either continuum can shift over time, influenced by changes in health status, employment, education, caregiving demands, or access to community resources.

Visualizing the Matrix:

HEALTHSPAN BANDS (ROWS):	WEALTHSPAN BANDS (COLUMNS):
H1 Elevated Risk: uncontrolled chronic conditions, frailty trajectory, and social isolation	W1 Subsistence: volatile income and thin or negative net worth
H2 Managed Risk: attached to primary care, partial adherence, and episodic gaps	W2 Stability: predictable income and modest buffers such as insurance and emergency funds
H3 Lower Risk: controlled risk, chronic conditions managed, strong self-management, and connection	W3 Well-Being: adequate assets and strong supports

Figure 6: Healthspan x Wealthspan Matrix Overview



Source: Milken Institute (2025)

This dynamic view emphasizes that no individual or population is fixed in place. With supportive policies, timely interventions, and equitable access to opportunities, trajectories can improve. Conversely, without such supports, setbacks in one domain can quickly spill over into the other, narrowing future options and eroding resilience. Understanding these continuums as fluid rather than static underscores the importance of building systems, the architecture of retirement and longevity, that provide flexibility, buffers, and pathways for upward movement throughout life.

While the Longevity Equation captures the interaction of key variables, the Matrix Model serves as a practical framework for targeting and staging interventions (see Figures 5 and 6). The levers and metrics in each cell of the matrix are offered as illustrative examples, not prescriptions. Their purpose is to show how the Longevity Equation can be operationalized in real-life settings, helping stakeholders visualize where action is most needed and how progress might be measured.

“Without sufficient buffers and supports, the broad middle is exposed to many risks: The system fails precisely when you need it most.”

ANDREW ESCHTRUTH

Director, Center for Retirement Research, Boston College

The primary goal for each population subsegment is to stabilize and move toward thriving, or H3/W3 (see Figures 6 and 7). The levers in this illustration are examples of the types of interventions our interviewees and analysis suggest could offer improvements from the population’s baseline at any given time. Certain levers, such as caregiving benefits and routine cognitive screening, could provide opportunities for improvement within the entire population.

Because metrics must be linked to the outcomes of specific levers, we have left the term “metrics” in the figure as a placeholder rather than filling every box. Strategy comes first; measurement follows. To show what this looks like in practice, we provide example metrics only in the most vulnerable segment (H1/W1), where both health and wealth are severely constrained. In this quadrant, indicators such as hospital readmission rates, food insecurity levels, or the presence of even modest emergency savings can reveal whether interventions are working. Starting here makes the logic clear. From that foundation, outcome-linked metrics can then be adapted across the other parts of the Matrix, always tailored to the populations and challenges they are meant to address.

Figure 7: Understanding the Matrix

H1W1 (Most Vulnerable): Primary Goal: stabilize both healthspan and wealthspan quickly Levers: intensive navigation, community supports (e.g., housing, food security, and transport), PACE-like integration, income smoothing, debt-relief triage, caregiver supports Example Metrics: days at home, preventable emergency visits, emergency savings uptake, debt-service ratio, connection index	H1W2: Primary Goal: prevent downward drift, protect savings from medical shocks Levers: connected care at home, longitudinal care management, short-term loans to avoid high-cost debt, paid caregiver leave, out-of-pocket expense smoothing tools, LTC education Metrics: TBD	H1W3: Primary Goal: preserve function, advance care planning, protect wealth from health shocks Levers: home modification and fall-prevention bundles, chronic care management, LTC complement, medication review Metrics: TBD
H2W1: Primary Goal: build buffers while strengthening primary-care attachment Levers: payroll-linked emergency savings with employer seed, transportation vouchers for appointments, tele navigation, referral to community supports Metrics: TBD	H2W2 (Broad Middle Focus): Primary Goal: move to H3W3 Levers: prevention incentives, automated savings nudges, decumulation literacy, targeted financial coaching during care episodes Metrics: TBD	H2W3: Primary Goal: maintain adherence and mitigate cognitive risk Levers: medication adherence tech with human check-ins, routine cognitive screening, fraud and exploitation prevention Metrics: TBD
H3W1: Primary Goal: protect health from sliding and build first buffer Levers: social prescribing, subsidized and incentivized prevention tools, automated "roundup" savings, low-fee debt consolidation Metrics: TBD	H3W2: Primary Goal: consolidate gains and plan for shocks Levers: LTC awareness, caregiver benefits, and decumulation plan Metrics: TBD	H3W3 (Thriving): Primary Goal: sustain contribution and purpose Levers: encore work design, volunteer pathways, intergenerational programs, philanthropy and place-based investment, and long-horizon care planning Metrics: TBD

Source: Milken Institute (2025)

FLOW MOVEMENT THROUGH THE MATRIX

What matters most is helping people move from one cell to another. The matrix works like a roadmap. The goal is to keep people moving down and to the right—toward better health (H3) and stronger wealth (W3). As people's situations change, different programs or institutions may need to take over support. These “handoffs” ensure that no one falls through the cracks and that help continues smoothly as needs evolve.

Risk zones: The upper-left risk zone (H1W1 and neighbors) signals an urgent need for stabilization. The center stability corridor (H2W2 and adjacent cells) is where the broad middle lives and where scaled interventions can move the most people. The lower-right thriving zone (H3–W3 and neighbors) focuses on sustaining gains and protecting against shocks.

Movement across boxes is dynamic: Negative changes or circumstances such as health events, unplanned caregiving, job loss, financial exploitation or fraud, and medical debt can push households leftward or upward. Positive changes or circumstances such as prevention, integrated care, income stability, emergency savings, navigation, and supported caregiving in addition to well-functioning technology (e.g., literacy programs and any myriad of supportive devices) all work to pull people down and to the right within the Matrix.

Understanding the force multiplier: Technology in the Longevity Equation is like electricity in a grid. It can light up an entire system or leave people in the dark. When it is reliable, easy to use, and shared ($\beta > 0$), it powers better health and financial outcomes, multiplying the effect of every other effort. For example, connected care can keep people healthier at home when it is built into team routines and paired with navigation support. But if technology is hard to use, disconnected, or available only to some, its power fades. In those cases, the multiplier drops to zero, and progress stalls. Worse still, if access is deeply unequal, the multiplier turns negative ($\beta < 0$), meaning technology actually widens gaps and harms the very people it was meant to help.

Contributive justice overlay: The highest priority falls on the H1W1 and H1W2 segments, where small gains can expand people's agency; this capacity to act reduces the system costs that everyone shares.³¹ At the same time, contributive justice emphasizes the importance of strengthening the H2W2 segment—the broad middle—because its stability underpins the entire system. When this group has adequate buffers and support, risk pools are steadier, communities are more resilient, and the benefits of longer lives are more widely shared. Leaders are therefore compelled to track not only whether the most vulnerable see declining exposure and greater voice in shaping benefits, but also whether the broad middle is reinforced to prevent slippage into crisis.

FRAMING GOALS, LEVERS, AND METRICS: FROM THEORY TO PRACTICE

Within each cell of the Matrix, the goal shifts with context. At the margins it is stabilization, in the middle it is resilience, and at the bottom it is sustainability and contribution. The pathway differs by starting point, but the shared destination is longer, healthier, and more secure lives.

In practice, secondary goals could be framed as clear, time-bound movement targets within the Matrix Model—for example, “stabilize individuals in H1W1 within 30 days” or “move 20 percent of H2W1 households into the center corridor within six months.” These are hypothetical illustrations, not prescriptions, but they show how leaders might tailor goals to a specific population and equity context.

Think of the model like a transit map. The aim is to help people move from the most fragile stations toward more stable hubs, with each milestone representing a safe and timely transfer on the journey toward health and financial security.

In planning, levers should be chosen and seen as bundled actions across three complements:

1. **Health:** prevention, primary care, and coordination
2. **Wealth:** income supports, savings nudges, debt relief, and LTC planning
3. **Technology enablement:** navigation, literacy and education, and optimal digital tools to compound gains

Levers in the Matrix function like handles on a control panel. Pulling the right ones at the right time adjusts the system’s course, helping people move toward greater health and financial stability.

The Matrix Model offers a way to establish a balanced set of metrics, combining leading and lagging outcomes, distributional views, and mobility measures that can form the backbone of an evidence agenda for real change.

Such an approach makes it possible to see not only where people stand today but also how they are moving over time and whether progress is shared equitably. The challenge lies in aligning data across sectors, ensuring measures are comparable, and resisting the temptation to chase what is easiest to count rather than what truly matters. In this sense, the Matrix works like the dashboard of an airplane: multiple gauges must be read together to keep the flight on course, and ignoring even one dial can throw the whole journey off balance.

“A successful retirement is fully contingent on our health and financial well-being throughout our lives.”

CATHERINE COLLINSON
President, Transamerica Institute

EXAMPLES OF MATRIX MODEL APPLICATION

The Longevity Equation and Matrix Model are a framework for understanding how health and financial factors interact across the lifespan. The following four examples demonstrate how the model can be used in real-world contexts, showing its relevance to individuals, institutions, and society at large.

Example 1 (Employer Setting):

Primary Care and Payroll Buffer Bundle

Objective: Raise H and W simultaneously for the broad middle by offering employees a reduced premium for documented chronic disease control or medication adherence. Pair this with payroll-linked emergency savings and optout enrollment at a modest default contribution, employer seed, and occasional match. Add navigation for caregivers and a secure link to financial counseling.

Model logic: Good primary care strengthens healthspan (H), and small financial cushions protect wealthspan (W) by preventing debt and skipped medications. Light technology (T)—simple, low-burden tools such as text reminders, easy apps, or basic monitoring devices—can make it easier for people to stay on track without adding complexity or cost.

Example 2 (Health Plan/System):

Connected Care at Home and Financial Coaching

Objective: Deploy connected care at home for high-risk members with uncontrolled chronic conditions to provide support and management, such as remote patient monitoring and health coaching support adherence, as well as short-cycle financial coaching to smooth copays, transport, or utility arrears.

Model logic: Connected care strengthens healthspan (H) by preventing health problems from getting worse, while small financial stabilizers support wealthspan (W) by reducing vulnerability to shocks. When technology (T) is built around people's needs and trusted relationships, it acts as a multiplier (β), expanding access instead of widening gaps.

Example 3 (Regional Strategy):

Anchor Strategy Consortium

Objective: Hospitals and universities operate as anchors by directing hiring, purchasing, and investment toward neighborhoods with frequent preventable health crises and low financial stability (e.g., see Case Example: The Anchor Strategy in Practice—Building Community Wealth to Improve Community Health).

Model logic: Anchors transform neighborhood preconditions, such as food access, safe mobility, and home remediation, while building local wealth and increasing trust—lifting both healthspan (H) and wealthspan (W) and enabling tech adoption for care navigation (T↑).

Example 4 (Public-Private):

LTC Scaffold and Private Complement

Objective: Use a modest public LTC scaffold, such as the Washington Cares (WA Cares) Fund,³² a state program providing a basic benefit to help cover LTC needs. This program was designed to reduce catastrophic spend down risk and stabilize family caregivers. In this example, private insurers and employers could be encouraged to layer in complementary products and benefits (e.g., life insurance with LTC riders or caregiver leave programs) that extend and enhance the foundational public program.

Model logic: Social insurance protects against tail risk, rare but catastrophic shocks that can otherwise wipe out savings, thereby strengthening wealthspan (W↑). It enables more people to remain at home, which supports healthier lives and extends healthspan (H↑). By preventing these crises from cascading into system-wide costs, it stabilizes community premiums and improves overall longevity outcomes (L↑).

Systemic Barriers and Misalignments

US health-care and retirement systems were not designed for the longer lives we have today. Instead of supporting people through extended lifespans, the systems leave individuals to navigate fragmented care and rising out-of-pocket costs with uneven access or opportunities to build financial savings. Those most affected by health and wealth disparities often have little to no cushion and the least ability to navigate or overcome these systemic barriers.

These obstacles, rooted in the design of health-care access, financial systems, workplace practices, and communities, not only are matters of personal choice but also reflect the structural realities that shape life outcomes. Confronting these barriers is essential to creating a society where longer lives are both attainable and equitable.

BARRIERS TO SHARED LONGEVITY

Even when solutions exist, structural frictions often dilute their efficacy. The challenges that follow summarize the barriers that surfaced most consistently in our research and explain how each pushes risk onto individuals—especially the broad middle—while raising costs for everyone.

- **Siloed financing and delivery:** Medical care, behavioral health, and long-term services and supports or social care are often funded and managed through different systems. The fragmentation results in uncoordinated, inefficient gaps in care.
- **Benefit designs that underinvest in prevention:** Underinvestment in prevention shifts costs toward acute care and limits early interventions, perpetuating avoidable health inequities and worsening long-term outcomes.
- **Opaque pricing and literacy gaps:** Limited price and fee transparency, whether in medical billing or investment products, combined with gaps in health and financial literacy, leave consumers at a disadvantage and contribute to their mistrust of the systems meant to support them.
- **Ageism:** One in five people over age 50 experience ageism,³³ or dismissal of concerns when symptoms are shared, during interactions with health-care providers. Ageism is associated with poorer health and well-being, including internalized ageism, when people believe the negative stereotypes about aging themselves.³⁴ Becca Levy, PhD, of Yale University, demonstrated that adopting negative views of aging can shorten lifespan by 7.5 years and increase risks of physical and cognitive decline.³⁵
- **The LTC gap:** The US lacks a comprehensive LTC system, leaving families to bear both the high costs of care and the hands-on and financial caregiving responsibilities.³⁶ Without coordinated financing or delivery, many older adults face financial hardship, while family caregivers experience strain that can undermine their own workforce participation and health.

CASE EXAMPLE

Washington Cares Fund—A State-Level Public LTC Scaffold

PURPOSE AND DESIGN:

WA Cares³⁷ is a first-in-the-nation state program that establishes a worker-funded LTC benefit to help residents pay for personal care supports. A modest payroll premium builds a dedicated fund, and eligible beneficiaries can access covered services to support aging in place and reduce catastrophic spend down to Medicaid. Official materials emphasize the program's role in preserving choice and dignity while easing pressure on family caregivers.

KEY MECHANICS:

Covered services include personal care, respite, and assistive equipment with approved providers, and benefits are portable within Washington and triggered by an assessed need. The program is being phased in, with safeguards such as performance audits and reporting requirements, while legislative updates continue to refine its implementation. Employers collect and remit premiums through standard payroll processes, and certain individuals may qualify for exemptions related to such issues as the domicile of the worker, the worker's military or visa status, etc.

RECENT UPDATES:

Statutory changes adjust eligibility, benefits, and portability, including provisions taking effect in 2026 to refine exemptions and administrative processes. The state continues to align administrative rules with stakeholder feedback.³⁸

WHY IT MATTERS:

WA Cares offers a societal scaffold that can reduce catastrophic out-of-pocket risk for the broad middle by covering a share of nonmedical supports that keep people at home longer. It is a platform for employers and financial institutions to integrate LTC planning with workplace benefits and savings products, smoothing shocks that would otherwise deplete retirement accounts or force early labor-force exits. By diversifying the LTC financing base beyond Medicaid, WA Cares can temper systemwide cost growth, improving the Longevity Equation for all by stabilizing both healthspan and wealthspan at the community level.

MISALIGNMENTS

Misaligned incentives reward downstream intensity over upstream coordination. These misaligned incentives are found in both health-care and financial systems. They are characterized by prioritizing high-cost, downstream interventions such as hospitalizations or crisis payouts, rather than investing in upstream coordination that could prevent problems, reduce costs, and improve long-term outcomes.

As an example, health-care payment systems reward high-acuity, late-stage interventions, while reimbursement policies undervalue prevention, navigation, and caregiver supports. Clinicians know that earlier, community-based services can reduce emergency and inpatient use, yet reimbursement rules often fail to cover what works. Below are a few of the insights provided by our interviewees:

- **Fragmented responsibility:** In most organizations, no single leader is accountable for the combined health and financial outcomes of customers, employees, or communities. Business units are divided: client services, sales, product managers, and developers typically focus on either health or financial solutions, while employee and community well-being is split among HR, benefits, and corporate social responsibility teams. As a result, no C-suite executive is responsible for managing the compound effects that ultimately shape outcomes for customers, workers, and retirees.
- **Unintended cost shifts:** When insurers, providers, employers, and households each optimize their own bottom lines in isolation, costs often migrate rather than decline. Too often, costs fall on families who are least able to absorb medical debt, lost wages, or housing instability after illness. Roundtable background materials highlight medical debt and rising retiree health costs as central concerns, underscoring the shared risk reality that motivates this project.
- **Technology's double-edged impact:** When well designed and widely adopted, digital tools amplify efficiency and good outcomes. But if trust, usability, or access lags, technology can unintentionally widen gaps and reduce the potential benefit.

These misalignments fall short of the basic contributive test, as they limit people's ability to be healthy, financially secure, and socially connected throughout life, reducing full participation in the economy and the community.

Healthspan and Wealthspan Alignment in Practice

This section offers compelling practice examples that generate both economic value and social good. These initiatives recognize that interventions gain practical traction when they are structured to benefit multiple stakeholders, such as individuals, employers, communities, and systems, at the same time.

“We need better risk pools and honestly-priced products; employers can be an incredible distribution channel.”

VINCE BODNAR

Chief Financial Officer, The Plateau Group

PRIVATE-SECTOR INNOVATION AND THE EMPLOYER AS AN ‘ANCHOR’

The private sector is positioned to act quickly through benefit design, payroll-linked savings, leave policies, navigation support, and partnerships with local providers. Employers have a unique trust advantage when they act as community anchors because they hire locally, purchase from community vendors, and invest in place, all while offering integrated health and financial benefits.

CASE EXAMPLE

The Anchor Strategy in Practice— Building Community Wealth to Improve Community Health

Rush University System for Health³⁹ is an example of the health-care anchor strategy in practice. Since 2016, the organization has spent more than \$30 million with local vendors, hired more than 8,000 people from Chicago's West Side, and enabled \$6.5 million in low-cost capital loans to community partners to improve community health and wealth.

In 2016, a community health needs assessment⁴⁰ revealed significant gaps in life expectancy on Chicago's West Side and prompted Rush to fundamentally change its mission to improve the health of people in the neighborhoods it serves and patients it treats.

Although Rush University Medical Center ranked among the nation's best hospitals by nearly every major rating system, David Ansell, MD—its senior vice president for community health equity—saw a deeper problem. Traditional quality metrics suggested that Rush had achieved the highest standards of care, yet those measures failed to capture the stark reality that people living just blocks away were experiencing preventable illness and premature death. The contrast revealed how prevailing systems of evaluation overlooked structural inequities in community health outcomes.

The major causes of premature mortality in these neighborhoods were common chronic diseases such as hypertension, diabetes, and cancer. And, just as hospitals use root cause analysis methods to determine how and why medical errors can be prevented, a deeper Rush investigation suggested that socioeconomic forces such as residential racial segregation, unemployment, lack of access to safe housing, and food insecurity were the root causes of the chronic conditions that shortened thousands of lives.

Rush decided to address the causes of illness, not just the symptoms.

As the largest private employer on the West Side with \$2 billion in spending power, Rush created the Anchor Mission Strategy⁴¹ to intentionally focus the economic benefits of how it hires, purchases, and invests to improve population health. In addition to continuing to deliver world-class care to tens of thousands of patients, Rush focused on improvement interventions in the surrounding neighborhoods. Now, nine years after the launch of this strategy, new community economic development has brought jobs and raised hope, from the Fillmore Linen Service⁴² to the Sankofa Wellness Village,⁴³ projects that are revitalizing Chicago West Side neighborhoods that have suffered from decades of disinvestment.

Recognizing that no single institution could overcome the entrenched barriers to health on Chicago's West Side, Rush helped convene a broad coalition of hospitals, community organizations, and residents to act together. This effort, known as West Side United created West Side United,⁴⁴ a coalition that brings six major health systems into partnership with local stakeholders to align their hiring, investment, and purchasing practices in ways that strengthen community health.

Omar Lateef, president and CEO of Rush University System for Health and Rush University Medical Center, has explained that the success of West Side United rests on multiple organizations agreeing to a common anchor mission. Rather than requiring large sums of money, the initiative depended on an intentional alignment of goals.

The model has since gained traction nationally, with health systems across the country joining the Healthcare Anchor Network to replicate the anchor mission framework and the West Side United approach.⁴⁵ Lateef has also underscored that Rush invited external partners into the effort, recognizing that the health-care sector cannot address inequities on its own and that broader cross-sector collaboration is essential.

RELEVANCE TO THE LONGEVITY EQUATION:

Anchor strategies reshape community conditions that drive health risks, while also strengthening local wealth creation, raising both healthspan ($H\uparrow$) and wealthspan ($W\uparrow$). Just as importantly, they cultivate trust, which is critical for people to adopt navigation supports and connected-care technologies ($T^{\wedge}\beta$).

CASE EXAMPLE

Connected Care: Extending Healthspan, Protecting Wealthspan

Connected care at home technologies, such as sensors, wearable devices, health applications, and voice- or AI-assistants, hold promise to improve adherence, reduce avoidable admissions, and extend team-based care. However, their full impact depends on whether they are bundled and designed for usability, privacy, and equitable access. The Milken Institute's 2025 *Future of Connected Care* report shows how virtual models can shift the site of care from hospitals to homes and communities, but also underscores the need for more information on how to capture the full value of these innovations, such as what outcomes are improved, for whom, and at what cost.

This research shows that technology multiplies its impact only when it is broadly accessible and when users have the digital literacy to benefit from it. Without those conditions, it risks deepening disparities, such as gaps in access to broadband, differences in technology fluency by age or income, and uneven distribution of supportive services—rather than narrowing them.⁴⁶

CORE INSIGHT FOR LEADERS

The passage emphasizes that technology only delivers value when it is integrated thoughtfully into systems that people can use and trust. That means three things:

- **Embedding technology in workflows** so that it becomes part of routine care and not an added burden.
- **Pairing technology with human navigation**, such as health coaches or care managers, so that older adults are not left to figure it out alone.
- **Governing for interoperability, privacy, and equity** to ensure that data can move securely between systems, privacy is protected, and access does not worsen disparities.

PRACTICAL APPLICATION

For older adults with chronic conditions, this translates into using connected-care “bundles,” such as remote patient monitoring devices that track blood pressure or glucose, medication adherence tools, and tech-enabled health coaching. Together, these supports can prevent avoidable hospitalizations, allow people to remain at home and in their communities, and extend healthspan. At the same time, avoiding expensive hospital stays reduces the financial shocks that erode wealthspan.

These same tools can also be adapted into employer health plans for high-risk workers, if participation is based on *opt-in consent* and that data use is transparent. This expands the reach of connected care beyond older adults into the working population.

CONNECTION TO THE LONGEVITY EQUATION

Here the Longevity Equation serves as a framework for interpreting the role of technology. Technology (T) acts as a multiplier: it accelerates the slope of improvement when healthspan (H) and wealthspan (W) strategies are aligned. However, if trust is lacking (e.g., privacy is not respected) or if access is unequal (e.g., digital divide), the beta factor associated with technology can be neutral—or even negative—meaning it may exacerbate disparities rather than reduce them.

TRUST: THE CURRENCY THAT HOLDS EVERYTHING TOGETHER

Trust is a universal value. In the Longevity Equation and the Matrix Model, it acts like glue, binding healthspan (H) and wealthspan (W) into a coherent whole. Without it, the pieces loosen and drift, no matter how well designed they are. When trust is present, people are more willing to save, manage debt, and follow care. That adhesive strength holds individuals steady, reinforces employers, and stabilizes the broader risk pool. The Gallup Federal Credit Union shows how a workplace-based cooperative can turn this glue of trust into lasting value.

CASE EXAMPLE

Gallup Federal Credit Union: Building Trust and Financial Well-Being at Work

Gallup Federal Credit Union (GFCU)⁴⁷ is a not-for-profit, member-owned cooperative created to serve Gallup employees and their families. Because it is tied directly to the employer, workers often view the credit union as part of their workplace “family,” not just another financial institution. This sense of belonging creates a level of trust that outside banks rarely match. That trust matters. When financial services feel proximate, personal, and aligned with employees’ interests, people are more willing to seek advice, start an emergency fund, or refinance costly debt. In this way, the workplace connection transforms routine financial services into trusted tools for behavior change and stability.⁴⁸

GFCU’s Financial Well-Being Program offers education, counseling, and other tools tailored to common pain points such as budgeting, credit repair, debt consolidation, and financial goal-setting. These are delivered in coordination with employer benefits. The member-ownership structure reduces conflicts of interest and reinvests surplus in better rates and services rather than external shareholders. Historically, credit unions emerged to meet needs that commercial banks overlooked, pooling community savings to expand access to fair credit. This cooperative foundation remains visible today.⁴⁹

CONNECTION TO THE LONGEVITY EQUATION:

Workplace credit unions help members build savings and avoid harmful debt, which strengthens wealthspan ($W\uparrow$) and supports healthspan ($H\uparrow$) by making it easier to afford medications, keep appointments, and follow care plans. Because participation is voluntary and data stay within the credit union, they also show how employers and credit unions can work together while protecting privacy.

TRADITIONAL BANKS CAN DRAW LESSONS:

Traditional banks can implement similar programs by codesigning them with employers, emphasizing education and counseling, and adopting service metrics that track well-being outcomes along with product uptake.

Conclusion

The steady rise in global life expectancy is rightly celebrated as a hallmark of human progress, made possible through public health measures, medical breakthroughs, and technological innovation that reduced deaths from infectious disease, maternal and infant complications, and other preventable conditions. Longer lives bring a new imperative: to align gains in longevity with parallel improvements in healthspan and wealthspan. Without that alignment, the added years risk becoming burdens rather than opportunities, particularly for those least prepared to bear the strain.

Meeting this challenge requires more than advances in medicine or finance alone. It calls for intentional collaboration across health care, financial services, public policy, and community stakeholders to ensure that extended years are lived in good health and with financial stability. From the perspective of contributive justice, such alignment is both practical and ethical: longer lives should expand, not restrict, each person's ability to contribute to family, community, and society. When sectors work in concert, longevity becomes not only a measure of survival but also a shared platform for flourishing, transforming individual gains into collective prosperity.

Directing resources wisely also requires stakeholders to size populations by risk: identifying which groups, such as the “forgotten middle,” low-income older adults, or financially strained caregivers, are most vulnerable to shortfalls in health or wealth. Because resources are finite, data at the community level can guide where interventions will have the greatest impact and which partnerships across public and private sectors will be most effective. In the language of contributive justice, such prioritization ensures that scarce resources expand the capacity of individuals and communities to contribute, aligning ethical imperatives with practical action.

When the broad middle of society lacks adequate protection and support, the effects extend outward in the form of higher insurance premiums, greater tax burdens, and diminished productivity. By contrast, when this broad middle is resilient, the benefits circulate widely. Stable risk pools lower costs, communities gain from stronger social and economic networks, and older adults are better able to remain engaged contributors, sustaining the vitality of both local life and the larger economy.

The Longevity Equation highlights a practical reality: life improves more when healthspan and wealthspan rise together, and when one lags, the whole system is constrained. The Longevity Equation and the Matrix Model offer an ethical, business, and civic frame to facilitate interactive dialogue, risk-informed decision-making, and innovative collaboration around healthspan and wealthspan.

From an ethical frame, contributive justice clarifies what good looks like. It insists that institutions, whether public, private, or community-based, be configured, governed, and managed so that people are able to develop and contribute across the entire life course. From a business frame, the Matrix Model becomes a kind of compass. It not only shows where to act but also provides the metrics to track whether actions are moving the dial. And from a civic frame, we are reminded of the nation's long tradition of problem-solving through shared scaffolding: Social Security,

Medicare, and employer-based benefits all emerged from efforts to balance public supports with private innovation.

Taken together, the Longevity Equation and Matrix Model are less like static diagrams and more like a map and legend. They show both the terrain of risks and opportunities, and the pathways that allow society to move forward with purpose and alignment.

The Milken Institute, in concert with Synchrony, Hoplon Capital, LLC, the TIAA Institute's Health & Wealth Roundtable, and others, signals that leading institutions are ready to build the next chapter of this social compact. It must be a cross-sector, evidence-driven compact that values every person and the communities we share.

This report is an open invitation to financial services companies, insurance firms, corporate leaders, health systems, asset managers, policymakers, investors, and others to use the Longevity Equation, adapt the Matrix Model, test interventions, share results, and keep broader societal benefits in view when designing programs and policies that impact healthspan and wealthspan.

Glossary

Ageism. Stereotyping, prejudice, or discrimination based on age, linked to poorer health and well-being.

Anchor strategy. Employers and other local “anchors” align hiring, benefits, vendor spend, and place-based investment to strengthen worker and community well-being.

Architecture of retirement. The term refers to the way retirement is *built*, much like the blueprint of a house. It describes both the large-scale systems that support people as they age (e.g., public programs such as Social Security, employer-based pensions, and personal savings) and the smaller design features that guide individual choices (e.g., automatic enrollment in 401(k) plans or default investment options). Together, these structural and behavioral elements form the “architecture of retirement,” shaping how securely and comfortably people can live once they leave the workforce.

Beta (β). In the Longevity Equation, beta (β) represents the sensitivity, or elasticity, of longevity outcomes to technology. It reflects how much improvement in healthspan and wealthspan can be amplified (or limited) by the presence and equitable use of technology.

Broad middle. Households too prosperous for means-tested supports yet far from financially secure and the most at risk to experience health and financial shocks.

Caregiver supports. Paid leave, respite, training, navigation, and workplace flexibility that reduce caregiver strain and sustain employment.

Chatham House Rule. A confidentiality practice enabling candid interviews by allowing information to be used without naming speakers.

Chief risk officer (individual context). A metaphor for the responsibility individuals now carry to manage their own financial and health risks. This includes savings, investment choices, medical expenses, and longevity planning—risks once more widely shared by employers or government programs.

Connected care. Tech-enabled, team-based, nonclinical care, such as home monitoring and telehealth, that prioritizes function and “days at home.”

Continuum (Subsistence–Stability–Well-Being). Dual ladders of financial and health status that locate people in a nine-box grid and shape priorities for action.

Contributive justice. A normative theory of justice asserting that every person has both the right and obligation to contribute their efforts, resources, and talents toward their own flourishing and the flourishing of others. Justice is measured by how well a society enables all members to contribute and thrive.

Decumulation literacy. Know-how to convert assets into lifetime income amid uncertainty, such as coordinating Social Security, savings drawdown, and insurance.

Disability freeze. A 1954 amendment to the Social Security Act that protected disabled workers by “freezing” their earnings records. This ensured that years without income due to disability would not lower future Social Security retirement or survivor benefits.

Emergency savings (payroll-linked). Optout, employer-facilitated small-dollar buffers that reduce financial shocks and improve retention.

Financial toxicity. Health care–driven economic harm such as out-of-pocket costs, lost income, and debt that impairs adherence and accelerates decline.

Forgotten middle. Older adults whose incomes and assets place them above Medicaid eligibility but below the level needed to afford LTC or housing in the private market.

Healthspan. Years lived in good health and functional capacity that are improved by prevention, primary care, and social supports.

Integrated care. Coordinated medical, behavioral, and social supports with one plan and an accountable budget.

Long-term services and supports. Nonmedical assistance with activities of daily living, respite, transportation, and home modifications.

Longevity Equation: $L \approx (H \times W) \times T^\beta$. A pedagogical tool in financial ethics that illustrates how healthspan (H) and wealthspan (W) together determine longevity outcomes (L), with technology (T^β) serving as a multiplier. Here, technology is understood broadly as any tool—digital, medical, financial, or social—that enhances human agency and decision-making.

Longevity outcome. The interaction of healthspan, wealthspan, and technology; what we seek to improve in both lifespan and life quality.

Matrix Model (H×W grid). A nine-box decision tool that maps healthspan (H1–H3) by wealthspan (W1–W3) to set goals, choose levers, and track movement across cells.

Medical debt (financial stress). Liabilities from care episodes that degrade credit, housing, work, and adherence, a prime driver of downward mobility.

Navigation (benefits and care). Human-plus-digital help to access benefits, coordinate handoffs, and close care and finance gaps to increase uptake and adherence.

Program of All-Inclusive Care for the Elderly (PACE). An integrated medical and social care model that helps frail older adults remain in community settings rather than institutions.

Shared risk (pooled financing). The reality that costs and benefits are borne collectively through taxes, premiums, and risk pools, so upstream prevention reduces downstream burden for all.

Technology. Devices, software, and other systems and methods that advance practical goals; access, trust, and equity determine its effect.

Technology multiplier (T^β). How effectively technology amplifies or dampens H×W impact; β reflects governance, equity, and usability.

UN Decade of Healthy Ageing. The 2021–2030 United Nations–World Health Organization initiative to combat ageism, build age-friendly communities, deliver integrated care, and ensure access to LTC.

Upstream prevention. Early, low-intensity supports such as vaccination, screenings, fall prevention, and savings nudges that avert avoidable crises.

Wealthspan. Years of financial stability that enable choice, planning, and resilience across the life course.

Methodology

Purpose and design. We combined qualitative, semi-structured interviews with leaders across health care, financial services, academia, philanthropy, and policy with a close review of TIAA Institute Health & Wealth Roundtable materials and selected literature and iterative drafting to translate insights into an actionable framework.

Sampling and participants. From July 15 to August 1, 2025, we conducted 19 semi-structured interviews with key opinion leaders spanning care delivery, insurance, employer benefits, community health, aging policy, consumer finance, and retirement security. Participants were recruited to capture clinical, financial, and community perspectives necessary for healthy longevity.

Protocol and instruments. A common interview guide with tailored probes covered: (1) how health and wealth interact across the life course; (2) barriers and incentives in financing and delivery; (3) employer and plan-design opportunities; (4) the role of “technology,” including navigation and literacy, as a multiplier; and (5) measures and evidence standards for “what works.”

Survey instrument (pulse check). To anchor comparability across interviews, we used a short, standardized pulse-check battery at the outset. Respondents rated, on a 1–10 scale, US progress on the four UN Decade of Healthy Ageing priorities (combating ageism; age-friendly environments; integrated, person-centered care; and access to LTC). We then captured brief, structured follow-ups (e.g., top obstacles, highest-leverage opportunities, and near-term priorities) and then moved to an open-ended discussion. Interviews (target ~30 minutes, several ~60+ minutes) were conducted via secure video, recorded with consent, and professionally transcribed.

Confidentiality and attribution (Chatham House Rule). To promote candor while preserving analytic integrity, all interviews were conducted under the Chatham House Rule. By default, remarks are nonattributed. Brief quotations appear with interviewee permission after transcript review. Attributed quotations were lightly edited for clarity without altering meaning. We do not disclose timestamps in the report.

Coding and analysis. We used mixed deductive–inductive coding. A priori codes reflected project aims—healthspan (e.g., prevention, function, and integration), wealthspan (e.g., earnings stability, emergency savings, and retirement adequacy), technology and enablement (e.g., access, usability, and equity), and system context (e.g., benefit design, payment incentives, anchor strategies, and ageism). Recurrent subcodes, such as caregiver navigation, medical debt and financial toxicity, payroll-linked savings, and community supports were added iteratively. The Longevity Equation and corresponding Matrix Model were refined across analytic passes to ensure each element is grounded in interview evidence and can be operationalized with measurable indicators.

Triangulation. To enhance practical relevance, we cross-checked interview themes with the agenda, participant bios, and cited research in the TIAA Institute Health & Wealth Roundtable held on June 26, 2025, and targeted literature, validating priorities such as caregiving, longevity literacy, retirement readiness, and integrated care. The tables and examples in the report reflect

synthesized interview discussions and are intended as working illustrations to be tested and improved by practitioners and researchers.

Pedagogical use of equations. In developing the Longevity Equation, we drew on a long tradition in moral philosophy of using equations as pedagogical tools rather than literal calculations. Jeremy Bentham’s “felicific calculus,” John Rawls’s maximin formulation of the “difference principle,” and Martha Nussbaum’s tabular expression of capabilities each use equation-like forms to clarify ethical tradeoffs. The author’s own work on contributive justice likewise advances a normative framework for how health and wealth responsibilities are shared in society. In this spirit, the Longevity Equation serves as a teaching device to visualize the interdependence of healthspan and wealthspan and to highlight the ethical stakes of imbalance.

Interview List

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John Hancock (Manulife)

Endnotes

1. “Health and Wealth Roundtable,” TIAA Institute, June 26, 2025, <https://www.tiaa.org/public/institute/about/events/health-and-wealth-roundtable>.
2. The Longevity Equation is designed as a pedagogical tool to illustrate relationships, not a precise mathematical formula.
3. Dawn Carpenter, *The Theological Nature of Work and Wealth as the Basis of Contributive Justice and the Moral Foundation for a New Social Contract* (Georgetown University, December 3, 2019), <https://repository.digital.georgetown.edu/handle/10822/1059497>.
4. “Ageing and Health,” World Health Organization, accessed September 26, 2025, <https://www.who.int/news-room/fact-sheets/detail/ageing-and-health>.
5. Raj Chetty, Michael Stepner, et al., “The Association Between Income and Life Expectancy in the United States, 2001–2014,” *JAMA Network Open* 315, no. 16 (April 26, 2016): 1750–1766, <https://doi.org/10.1001/jama.2016.4226>.
6. “Press Conference, 21 February 1963,” John F. Kennedy Presidential Library and Museum, accessed August 29, 2025, <https://www.jfklibrary.org/asset-viewer/archives/jfkwha-164>.
7. *Social Security: A Brief History* (Social Security Administration, August 2005), no. 21-059, 2–3, <https://www.ssa.gov/history/pdf/2005pamphlet.pdf>; The Great Depression was experienced as a national trauma. It was a rupture in economic and social life that reverberated across communities. It was not only an economic collapse but also a shared dislocation, producing widespread loss of confidence, social upheaval, and a collective sense of insecurity that reshaped American society.
8. The concept of the “disability freeze” was a critical step in the evolution of Social Security. When the Act was enacted in 1935, it excluded disability coverage, which was thought to be too complex to insure at the time. However, by the 1950s, policymakers recognized that workers who became disabled faced a dual penalty. When workers could no longer work, their years of zero earnings would reduce or eliminate their future retirement and survivor benefits.
9. Social Security Administration, *Social Security: A Brief History*, 8–10.
10. US National Library of Medicine, *History of Medicine: Employer-Sponsored Health Insurance* (National Center for Biotechnology Information, Bethesda, MD, 2014), <https://www.ncbi.nlm.nih.gov/books/NBK235989/#:~:text=In%201943%20the%20War%20Labor,of%20maneuvering%20around%20wage%20controls>.
11. Ibid, 10.
12. Social Security Administration, *Social Security: A Brief History*, 12.

13. Social Security Administration, *Social Security: A Brief History*, 12–24.
14. “Essential Health Benefits: Standards and Implementation,” *Fact Sheet*, February 20, 2013. <https://www.cms.gov/CCIIO/Resources/Fact-Sheets-and-FAQs/ehb-2-20-2013>.
15. Social Security Administration, *Social Security: A Brief History*.
16. Garmany Armin and Terzic Andre, “Global Healthspan-Lifespan Gaps Among 183 World Health Organization Member States,” *JAMA Network Open* 7, no. 12 (December 11, 2024): e2450241, <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2827753>.
17. *Meeting the Growing Demand for Age-Friendly Care: Health Care at the Crossroads* (The John A. Hartford Foundation, September 24, 2024), https://www.johnahartford.org/images/uploads/resources/The_Growing_Demand_for_Age-Friendly_Care_Report_FINAL.pdf.
18. Dianne Munevar and Sai Loganathan, “The Forgotten Middle in 2033,” NORC at the University of Chicago, 2022, <https://www.norc.org/research/projects/the-forgotten-middle-in-2033.html>.
19. “Who Are the Middle Class?” Brookings Institution, accessed August 29, 2025, <https://www.brookings.edu/who-are-the-middle-class/>.
20. *Paying With Our Health* (American Psychological Association, February 4, 2015), <https://www.apa.org/news/press/releases/stress/2014/stress-report.pdf>.
21. “Financial Toxicity, Part I: A New Name for a Growing Problem,” *Oncology* 27, no. 2 (August 4, 2015): 80–149, <https://pmc.ncbi.nlm.nih.gov/articles/PMC4523887/>.
22. The purpose of the Longevity Equation is to highlight how improvements in healthspan (H), wealthspan (W), and technology (T) reinforce one another. In practice, people continue to live even when health or wealth is low. The model simplifies reality to show that when either health or wealth is fragile, longevity outcomes are constrained. To avoid implying that life collapses to zero, the equation should be read as directional: balanced gains in health and wealth magnify outcomes, while deficits in either area hold back progress. The technology term (T^β) emphasizes that innovation can accelerate gains, but only if people have access to it. Without equitable access and literacy, technology may widen gaps rather than close them. The equation is best understood as a visual shorthand for system-level interdependence, not as a prediction of exact years of life.
23. The technology variable (T^β) is conceived as an elasticity, showing how much longevity outcomes change with effective technology use. Hypothetically, β could be measured by comparing health and financial outcomes in populations before and after the adoption of digital tools such as remote monitoring or telehealth, while adjusting for differences in broadband access and digital literacy. In this way, the digital divide lowers the effective value of T, illustrating that technology’s benefits depend on equitable access.

24. *Draft 2025 Comprehensive Quality Strategy 2025* (California Department of Health Care Services, 2025), 7–10, <https://www.dhcs.ca.gov/services/Documents/Draft-2025-Comprehensive-Quality-Strategy-Report.pdf>.
25. “Home page,” On Lok, accessed August 29, 2025, <https://www.onlok.org/>.
26. “Program of All-Inclusive Care for the Elderly (PACE),” CMS.gov, accessed August 24, 2025, <https://www.cms.gov/medicare/medicaid-coordination/about/pace>.
27. Ibid.
28. Ibid.
29. Ibid.
30. Ibid.
31. Carpenter, *The Theological Nature of Work and Wealth*.
32. “Home page,” Washington State Department of Social and Health Services, accessed September 7, 2025, <https://wacaresfund.wa.gov/>.
33. Julie Ober Allen, Erica Solway, et al., “Experiences of Everyday Ageism and the Health of Older US Adults,” *JAMA Network Open* 5, no. 6 (June 15, 202): e2217240, <https://pmc.ncbi.nlm.nih.gov/articles/PMC9201677/>.
34. Ibid.
35. Becca R. Levy, Martin D. Slade, et. al., “Longevity Increased by Positive Self-Perceptions of Aging,” *Journal of Personal and Social Psychology*, August 2002; 83(2):261–70. doi: [10.1037//0022-3514.83.2.261](https://doi.org/10.1037//0022-3514.83.2.261).
36. Caroline F. Pearson, Charlene C. Quinn, et al., “The Forgotten Middle: Many MiddleIncome Seniors Will Have Insufficient Resources for Housing and Health Care,” *Health Affairs* 38, no. 5 (April 24, 2019): 851–859, <https://doi.org/10.1377/hlthaff.2018.05233>.
37. “Home page,” Washington State Department of Social and Health Services.
38. Goldie Davidoff, “WA Cares Gets a Makeover: What’s Changing in 2026,” Littler Mendelson, June 16, 2025, <https://www.littler.com/news-analysis/asap/wa-cares-gets-makeover-whats-changing-2026>.
39. “Home page,” Rush University System for Health, accessed August 29, 2025, <https://www.rush.edu/>.
40. “Community Health Needs Assessment (CHNA),” All In: Data for Community Health, accessed September 27, 2025, <https://www.allhealthequity.org/chna>.
41. “Rush’s Anchor Mission Strategy: Go Local,” Rush University System for Health, accessed August 29, 2025, <https://www.rush.edu/about-us/rush-community/rushs-anchor-mission-strategy>.

42. Fillmore Linen Service, “Fillmore Linen Service — Serving Chicago’s Healthcare Systems,” accessed September 26, 2025, <https://www.fillmorelinenservice.com>.
43. “Home page,” Sankofa Wellness Village, accessed August 29, 2025, <https://sankofawellness-village.org>.
44. “Home page,” West Side United, accessed August 29, 2025, <https://www.westsideunited.org/>.
45. “Home page,” Healthcare Anchor Network, accessed August 29, 2025, <https://healthcareanchor.network/>.
46. Lauren Dunning and Jennifer Rossano, *The Future of Connected Care: Enabling Healthy Longevity and Aging at Home* (Washington, DC: Milken Institute, May 2025), 18–19.
47. “Home page,” Gallup Federal Credit Union, accessed September 8, 2025, <https://www.gallupfcu.com/home.aspx>.
48. “Credit Unions Lead Banks in All Seven Dimensions of Consumer Satisfaction Survey,” America’s Credit Unions, April 9, 2025, <https://www.americascreditunions.org/news-media/news/credit-unions-lead-banks-all-seven-dimensions-consumer-satisfaction-survey>
49. “The History of BMI Federal Credit Union,” BMI Federal Credit Union, accessed September 8, 2025, https://bmifcu.org/2018-03_cu_history.html.

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About the Author

Dawn M. Carpenter, DLS, is the director of Financial Longevity on the Future of Aging team at the Milken Institute, where she leads research and convenings that explore how financial systems can evolve to support the opportunities and challenges of the 100-year life. She is a financial ethicist and thought leader who works at the intersection of finance, aging, and moral philosophy.

A veteran of Wall Street, Carpenter spent more than two decades in investment and community development banking, where she raised and advised on more than \$3 billion in capital for mission-driven organizations. Today, her applied research and practice focus on designing ethical frameworks that enable individuals and institutions to navigate the profound shifts in health, wealth, and work brought on by demographic change.

Carpenter is also an award-winning multimedia storyteller. She is the creator and host of *What Does It Profit*, recognized with three W3 Gold Awards and five W3 Silver Awards for excellence in podcasting, and the director of *Interwoven*, a multiple award-winning documentary film exploring solidarity economics, worker-led innovation, and environmental sustainability. Through these media projects and through lectures, she has given voice to issues of the solidarity economy and contributive justice theory in over 20 countries.

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