Accelerating Gains in Health through Research

A Funder Roadmap

PRACTICAL GUIDANCE FOR FUNDERS AND PARTNERS TO ADVANCE HEALTH SOLUTIONS SCIENCE

About the Roadmap

This roadmap was written by Danielle Whicher, PhD, MHS; Asta Sorenson, MA; Emily Cross, MS; and Alyssa Crawford, MSPH from Mathematica. Graphics were designed by SteegeThomson. The roadmap was commissioned by the Doris Duke Foundation and the Robertson Foundation. It was informed by symposia funded by the Collective to Strengthen Pathways for Health Research through the request for proposals, "Preventing and Improving Clinical Encounters: Sparking National Discussion to Strengthen Health Research."

The Doris Duke Foundation, together with American Cancer Society, American Heart Association, Burroughs Wellcome Fund, Dana Foundation, Donaghue Foundation, Prebys Foundation, Robertson Foundation, Susan G. Komen, and additional philanthropic partners are the Collective to Strengthen Pathways for Health Research. The Collective is seeking to bring greater attention and resources for breakthrough health research to improve how we prevent and address disease. Our current activities are focused on elevating voices and ideas to help define an actionable blueprint for progress.

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STRENGTHENING PATHWAYS
a national conversation about health research from THE COLLECTIVE

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Brain Science for a Better Future
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Executive Summary

The United States has made extraordinary progress in biomedical research and spends nearly $5 trillion annually on health care, yet the nation continues to face preventable illness, persistent disparities, and uneven access to care (Martin et al. 2025). Health solutions science, a term that encompasses research that examines how health is shaped by care delivery, policy, and the conditions in which people live and work, offers a powerful opportunity to improve disease prevention and health outcomes for all Americans, yet it remains underrecognized.

This roadmap offers practical guidance to help funders and their partners identify opportunities to advance health solutions science. It describes the importance of this research, provides an outcomes-based framework to help guide funding, and describes different forms of capital that funders can leverage—from grants to impact-oriented investments—to test new interventions and scale the ones that work. Overall, it aims to support funders in applying approaches that connect discovery to delivery to improve health.

As detailed in the final chapter, future progress will depend on funders working together to strengthen the health solutions science ecosystem in three complementary ways:

1. **Elevating the visibility and value** of health solutions science so its contributions are recognized and resourced in proportion to their impact.
2. **Driving innovation in policy and practice** through models that move beyond short-term pilots, build lasting partnerships with communities, and support the workforce needed to sustain effective solutions.
3. **Deploying the full spectrum of capital**, from grants to market-based investments, to scale what works and draw new partners into the effort.

Together, these strategies illustrate how coordinated funding can strengthen the health solutions science ecosystem and improve the translation of evidence into practice. The roadmap brings these elements together as practical pathways for advancing prevention, care delivery, and health outcomes for all Americans.

I. Setting the Stage: Unlocking the Full Spectrum of Research to Improve Health

Decades of investment in biomedical research have transformed medicine in the United States and around the world. Yet, despite this extraordinary scientific achievement and nearly $5 trillion in annual health care spending, the nation continues to struggle with preventable illness, persistent disparities, and uneven access to high-quality care (Martin et al., 2025). Americans live shorter lives and have higher rates of preventable disease than people in other high-income nations do (Gunja et al., 2023). This paradox—scientific excellence paired with stagnant and varying outcomes—challenges Americans' ability to live longer, healthier lives.

This reality underscores a simple truth: biomedical discovery is just a part of the full spectrum of research needed to bring better health to populations. Roughly 20 percent of a person's overall health status can be attributed to clinical care, whereas the remaining 80 percent is shaped by nonclinical factors such as environmental, social, and economic conditions that biomedical research alone cannot address (Magnan, 2017).[1] To improve health outcomes, the United States must match its strong biomedical research enterprise with an equally strong research enterprise that offers answers to address health challenges stemming from behavioral, clinical, social, economic, and physical environment conditions—a health solutions science enterprise. The end goal is a system that supports better health nationwide by consistently developing innovative, effective new therapies and ways to deliver evidence-based care and prevention strategies at scale (NASEM, 2021; NASEM, 2017).

Health research is not the only lever for improving health and well-being—policy and other changes that expand access to insurance and care play a significant role. However, health solutions science is essential to generating, translating, and applying the evidence needed to strengthen the link between discovery and application. It can reveal what drives outcomes; how systems function; and which partnerships, policies, and incentives translate evidence into lasting impact.

> Geography is destiny when it comes to health care.
>
> **Jonathan Skinner**, Dartmouth College
> Dartmouth Rural Health Symposium
>
> Within the United States, for example:
>
> - Rural residents have a substantially lower life expectancy than those in urban areas (Price et al., 2022)
> - In many cities—for example, Chicago—life expectancy in different neighborhoods can differ by more than a decade (Hunt et al., 2015)
> - Black and Indigenous women are three to four times more likely to die from pregnancy-related causes than White women are (Petersen et al., 2019).

A. Factors That Shape Health Outcomes

Figure A is adapted from the County Health Rankings (CHR) model (Hood et al., 2015) to incorporate the availability of new therapies and diagnostics, showing the role of biomedical research in the factors impacting health.

1 These numbers account for modifiable health factors. The contribution of non-modifiable contributors to health, such as genetic factors, were not estimated as part of this study.

Biomedical research investigates the biological and physiological processes that cause, prevent, or treat disease. It includes laboratory and clinical studies that advance understanding of how the body works and how medical interventions improve health.

Health solutions science reveals how behavioral, clinical, environmental, social, and economic factors drive health outcomes and are affected by various contextual factors and tests strategies for improving health outcomes. The aims of this research include more effective disease prevention, care delivery, and support of well-being. Biomedical research and health solutions science are interactive: health solutions science can reveal biomedical research needs, and biomedical research can clarify how external drivers modify biological processes linked to health and disease.

Despite its importance, health solutions science is undervalued. Compared with biomedical breakthroughs, its findings are often less visible and can take longer to translate into measurable outcomes. Because it examines how care and related services are organized, financed, and governed and touches on issues such as health equity, its progress can be impacted by shifting political and institutional priorities (Moses et al., 2015; Gray et al., 2003; Blendon and SteelFisher, 2009). As a result, health solutions science often receives less recognition and fewer sustained resources than biomedical research, even though it underpins the systems and policies necessary for improving population health and well-being. Health solutions science also spans a variety of sectors including health care, public health, housing, and education, among others—creating silos, decentralizing accountability, and making impacts harder to attribute to a single actor or discipline. Stronger coordination, stable funding, and sustained mechanisms to scale what works in health solutions science have the potential to transform health care and produce more consequential outcomes for the whole country.

Health Solutions Science: A Critical Component for Transforming Health

Over the past several decades, health solutions science has generated evidence that has reshaped prevention and care delivery, improved patient safety and quality of care, and guided policy reform. These advances illustrate how essential it is in bridging the gap between scientific discovery and practical impact.

A recent series of 18 national symposia[2] underscored the promise of health solutions science, highlighting the significant untapped opportunities in innovations emerging outside the biomedical spotlight—especially those rooted in prevention, care delivery, and community partnership. Across the country, researchers and practitioners are testing and refining models that bring care closer to where people live, build more reliable health services, and promote equity, from integrating behavioral health into primary care to developing rural research hubs and whole-person care models. Many of these solutions remain underrecognized and underfunded, limiting their ability to achieve the scale and sustainability needed to transform outcomes nationwide.

Classical examples of advancements resulting from health solutions science

Preventing disease by controlling use of tobacco. Decades of research established the causal links between smoking, secondhand smoke, and chronic disease, transforming how policymakers and the public understood the risks of tobacco. The landmark, evidence-informed Surgeon General's Reports guided litigation and regulation limiting advertising and shaped community prevention programs—efforts that cut adult smoking rates by more than half since 1965 and prevented millions of premature deaths (U.S. Department of Health and Human Services, 2014).

Improving patient safety and quality of care. The Comprehensive Unit-Based Safety Program (CUSP) empowers frontline teams to identify and address patient safety risks by combining teamwork, clinical best practices, and the science of safety. After being developed and scaled in the 2000s, CUSP was shown to reduce bloodstream infections by 41 percent and significantly decreased urinary tract and surgical site infections nationwide. CUSP was piloted in Michigan and later expanded to more than 1,000 intensive care units (Pronovost et al., 2006; AHRQ, 2023).

Reducing lead exposure. Research documenting the effects of lead on children's brain development provided the evidence base for federal action. Findings led to regulations phasing out leaded gasoline and restricting lead-based paint in housing. These policies drove a 90 percent decline in blood lead levels among U.S. children and produced major gains in cognitive development and public health (Needleman et al., 1979; CDC, 2018).

Reenvisioning health insurance coverage and cost. The RAND Health Insurance Experiment used a randomized controlled design to assign more than 7,000 participants to health plans with varying levels of cost-sharing, producing foundational evidence on how insurance design affects care use and outcomes. The study showed that higher cost-sharing reduced use of health care but also deterred necessary care and worsened outcomes for people with low incomes who have chronic conditions. Its findings continue to shape policy in Medicaid, Medicare Advantage, and employer-sponsored coverage (Newhouse and the Insurance Experiment Group, 1993).

> The evidence is often there. What we lack is a way to act on it efficiently and equitably.
>
> **Genevieve Melton-Meaux**, University of Minnesota
> Catalyzing Innovation in Learning Health Systems through Research Symposium

2 Appendix A provides additional information on this series of symposia, which were supported by the Collective to Strengthen Pathways for Health Research.

Examples of effective solutions highlighted at the 18 national symposia

Whole health models. In rural Virginia, interventions that helped patients set personal health goals with community health workers and integrated them with clinical care reduced opioid use, improved chronic disease control, and increased engagement. Sustaining these interventions is difficult because benefits take years to show, and most evaluation and payment systems are built around short-term outcomes.

Integrated behavioral health. Embedding behavioral health into primary care can reduce hospitalizations, improve outcomes, and boost patient and provider satisfaction. Scaling is difficult because it requires additional workforce training, leadership buy-in, and support from payers.

Maternal health. A pilot in Massachusetts that automatically scheduled primary care visits for postpartum women improved follow-up and helped prevent complications. Wider adoption is challenging because postpartum care falls between specialties, long-term outcomes are rarely measured, and payment models for pregnant people typically end six weeks after delivery.

To realize their potential, these and other innovations must be supported by greater investment in health solutions science. Just as biomedical research depends on both discovery and development, effective health solutions science requires both new inquiry and the translation of proven solutions into practice. Discovery builds the evidence base for how systems, behaviors, and environments influence health, whereas translation ensures that policies, clinical practice, and community systems transform to deliver measurable results. Together, this dual focus has enormous potential to improve population health but requires a clear strategy that brings funders, researchers, policymakers, and communities together to pursue shared goals and sustained investment.

Building Momentum to Harness the Full Spectrum of Health Research

Recognizing the transformative potential of health solutions science, a group of funders who have long supported lifesaving biomedical discovery established the Collective to Strengthen Pathways for Health Research[3] to bring greater attention and resources to breakthrough health research with the goal of improving how we prevent and address disease. As part of this effort, the Collective supported a series of 18 national symposia that brought together researchers, policymakers, health insurers, professional societies, technology developers, and communities to explore how health solutions science can be better funded, conducted, and translated into practice.[4] Drawing from these national symposia, this roadmap outlines practical steps to strengthen and expand the nation's capacity for health solutions science.

3 Additional information about the Collective is available at https://www.dorisduke.org/grants/projects/a-new-blueprint-for-progress.
4 Appendix A provides the title, host organization, date, and location for each symposium. Although these symposia covered a broad array of topics, they did not cover every topic relevant to the field of health solutions science.

II. Why Act Now: Capturing a High-Impact Opportunity

Section I describes how the nation's health research ecosystem is out of balance—strong in biomedical discovery yet weak in translation and delivery. Building on that foundation, this section explores the reasons for continued underinvestment in health solutions science, the opportunities for changing course, and how funders can accelerate progress.

Breaking the Cycle of Underinvestment in Health Solutions Science

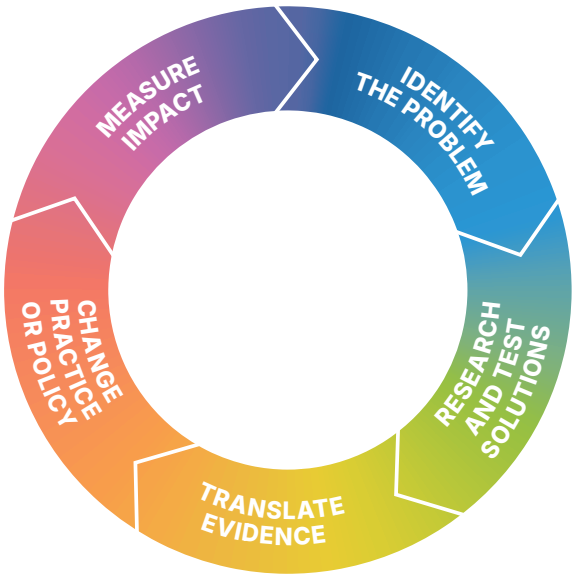
Despite its significant potential for impact, health solutions science receives much less funding than biomedical research. Additionally, the funding that is available exists in small pockets across different agencies and often shifts based on the political environment. For example, the National Institutes of Health (NIH) is the largest single public funder of biomedical and behavioral research in the world, but it spends less than seven percent of its annual budget on health services research—a core field within the broader health solutions science enterprise (NIH, 2025a; NIH, 2025b; Sekar, 2024). Additionally, the Agency for Healthcare Research and Quality (AHRQ), the leading federal agency focused on health services research, is a hundred times smaller than the NIH and has repeatedly been under threat of elimination or significant funding cuts during the federal appropriations process (Lee, 2025). Finally, although the Centers for Medicare & Medicaid Services has annual outlays of roughly $1.5 to $1.75 trillion and administers health coverage for about half of the U.S. population, only a very small fraction of its budget is devoted to research on how to put proven health and health care interventions into practice. If the United States invested even one percent of what it spends on health care and other services in understanding how to prevent disease and deliver care more effectively, it could unlock powerful opportunities to improve health and the performance of our health care system.

Several factors contribute to the persistent underinvestment in health solutions science:

- **Limited visibility of impact.** As noted, biomedical discoveries receive more attention than the results of health solutions science, making its value harder to communicate.
- **Lack of private-sector incentives.** Because many innovations in this field do not produce patentable intellectual property, they attract little private capital.
- **Difficulty sustaining momentum.** Short grant cycles, limited follow-on funding, and diffuse pathways from research to adoption make it difficult to refine and translate promising innovations.
- **Delayed realization of returns.** The return on investment can take years to become visible because cost savings and other benefits from prevention and system improvement accumulate gradually—but when measured over a longer period, these gains can be substantial.

These dynamics both constrain the development of new solutions and leave promising solutions stranded between pilot and practice, preventing promising ideas from being discovered, tested, and implemented.

B. Sequence of Health Research and Translation



At a high level, all health research moves through a similar sequence **(figure B)**.

For biomedical research, this is a well-defined pathway supported by institutions like the U.S. Food and Drug Administration, NIH, private-sector investors, and established regulatory and market mechanisms that together form a clear pipeline from discovery to development.

The pathway is not as well defined for health solutions science where the problems, solutions, and routes to translation vary widely. Some interventions focus on community and environmental conditions such as neighborhood design or heat resilience; others address how care is organized and delivered, from workforce models to payment reforms. Additionally, there are a variety of mechanisms for adopting and scaling innovations, including local, state, or federal policy; insurance and payment design; health care system– or provider-led changes in clinical workflow; and new partnerships across public health, education, and social services. Although defining pathways can be challenging, examples of effective national pathways do exist. **Figure C** illustrates two existing pathways: one for preventive care services and the other for health care payment and service delivery models, highlighting the similarities and differences in the generators, users, and regulators of health solutions science.

C. Examples of Established Pathways for Health Solutions Science

	Preventive care services	Health care payment and service delivery models
Identify the problem and design research	Experts identify promising practices.	
Research and testing	Researchers in a range of settings develop preventive care services and assess their benefits and risks. Medical specialty societies develop clinical guidelines based on research.	Researchers in a range of settings test new models for payment or care delivery. Government agencies or payers—such as the Center for Medicare & Medicaid Innovation (CMS Innovation Center), part of the Centers for Medicare & Medicaid Services (CMS)—develop national demonstrations that build on earlier research and testing and evaluate whether the models improve quality and reduce costs.
Translate evidence	The U.S. Preventive Services Task Force (USPSTF), supported by the Agency for Healthcare Research and Quality (AHRQ), makes evidence-based recommendations.	
Change practice or policy	Health care organizations, clinicians, and other entities adopt and promote recommendations. Payers, including CMS, can incorporate best practices into plans through quality measures, benefit design, and other mechanisms to encourage uptake.	If models are shown to be effective, payers can expand adoption. (If the CMS Innovation Center models are effective, CMS can incorporate them into Medicaid or Medicare.) Other payers may follow suit. Health care organizations and professionals align with new models of payment and service delivery.
Determine measurable impact	Patients receive better care and experience better health outcomes. Health care costs less.	

In addition to these national pathways, the 18 national symposia highlighted examples of important local pathways to translate and adopt health solutions science interventions—pathways that have resulted in notable health improvements and returns on investment for organizations, as described to the right.

From the Strengthening Pathways Symposia

Examples of impact and return on investment from health solutions science innovations

Reducing patient out-of-pocket (OOP) costs. The NYU Langone Health System tested a physician-facing price transparency tool designed to give prescribers real-time information on patients' OOP drug costs and less expensive therapeutic alternatives at the point of prescribing. Researchers found that the intervention reduced patients' OOP costs by 45 percent for prescriptions in the most expensive drug classes and increased fill rates for these prescriptions by 15 percent.

Integrated behavioral health. Researchers at the University of California, Davis found that embedding behavioral health services within primary care (which previous research had shown to be effective) reduced hospitalizations by 31 percent and emergency visits by 15 percent—enough to offset operating costs and generate a positive financial return for the health system.

Street medicine. A hospital-linked street medicine program achieved an estimated 80 percent reduction in emergency department visits and saved more than $1 million in multisystem costs for a single county cohort, showing that care delivered directly to unsheltered individuals can substantially improve outcomes and reduce costs. Building on accumulating evidence from programs demonstrating similar impacts, California—and later other states—recognized street medicine as primary care and enabled reimbursement. This momentum helped prompt the Centers for Medicare & Medicaid Services to establish a national place-of-service code for street medicine in 2023.

The existence of such proven pathways makes clear that the barriers to progress are not about feasibility, but coordination: generating and connecting strong evidence to mechanisms that ensure implementation, scale, and endurance. For funders, this represents an open field of opportunity to replicate, adapt, and expand proven pathways. Funders can use the tools described in sections III and IV to support the development and testing of novel interventions that, if successful, can be translated into realized improvements in health outcomes.

Equipping Funders to Overcome Barriers and Realize Transformative Results

Even when funders recognize the importance of health solutions science, investing in it can feel challenging. Some think the ticket to entry is too high—that supporting rigorous, system-level research requires significant resources or specialized expertise. Others assume this type of research should be the responsibility of government or health care organizations already funding their own quality improvement programs. In an environment where many public agencies face budget constraints and health systems and insurers focus on short-term financial pressures within their own organizations, these assumptions leave critical areas of discovery and translation underfunded. As a result, promising models for prevention, workforce development, and system redesign often remain small in scale, localized, or unsustained.

We are at a pivotal moment for driving further investment. As noted, the current political environment has introduced new uncertainty around already-limited federal support for health solutions science, even as the need for it grows. Workforce shortages, provider burnout, and siloed specialty care are straining the health system and leaving many communities without coordinated, preventive services (NASEM, 2021). Rapid advances in digital technology and artificial intelligence are transforming what data are available for research and how care is delivered—yet they also carry risks of deepening disparities if deployed without enough evidence or evaluation (Matheny et al., 2022). These pressures and possibilities together mark a defining moment when funders can help the nation pivot from reactive care toward prevention, improved care delivery, and sustainability.

Funders who have traditionally focused on biomedical research or other fields of inquiry can carry forward their own expertise in accelerating research while also learning from the experience of those already investing in health solutions science. The funders listed on the right, among others, have been key players in this space for decades and have demonstrated how strategic investment in health solutions science can deliver tangible impact. Their work offers models for how newer entrants can accelerate progress.

Long-standing nongovernmental funders in health solutions science

Robert Wood Johnson Foundation. Catalyzing research on health systems, equity, and social determinants of health.

The Commonwealth Fund. Supporting state- and national-level reforms that strengthen primary care, affordability, and health system performance.

Arnold Ventures. Advancing policy-driven evaluation and implementation research in health care delivery and payment reform.

Peterson Center on Healthcare. Promoting high-value care through research and dissemination of effective delivery models.

The Donaghue Foundation. Supporting research to improve health and health care and its translation into policy and practice.

The SCAN Foundation. Supporting research and policy to improve care for older adults and people with complex needs.

National Institute for Health Care Management Foundation. Investing in applied research and dissemination that bridges evidence and practice.

Regional health conversion foundations. Building community-level capacity and data infrastructure that improve care delivery and access for specific populations.

Although it is critical for federal funders to recognize the importance of health solutions science, nongovernmental funders have unique opportunities to drive change. They can take calculated risks, test new partnership models, and convene actors across sectors to translate and scale what works. Because they are not bound by political cycles or profit margins, these funders can adopt a broad view of the health care ecosystem and provide the flexible support needed to move research through the "last mile" of implementation—where proven interventions either take hold or fade away. Working together, funders can also reduce duplication, coordinate investments, and create shared platforms for learning so each dollar invested multiplies in effect.

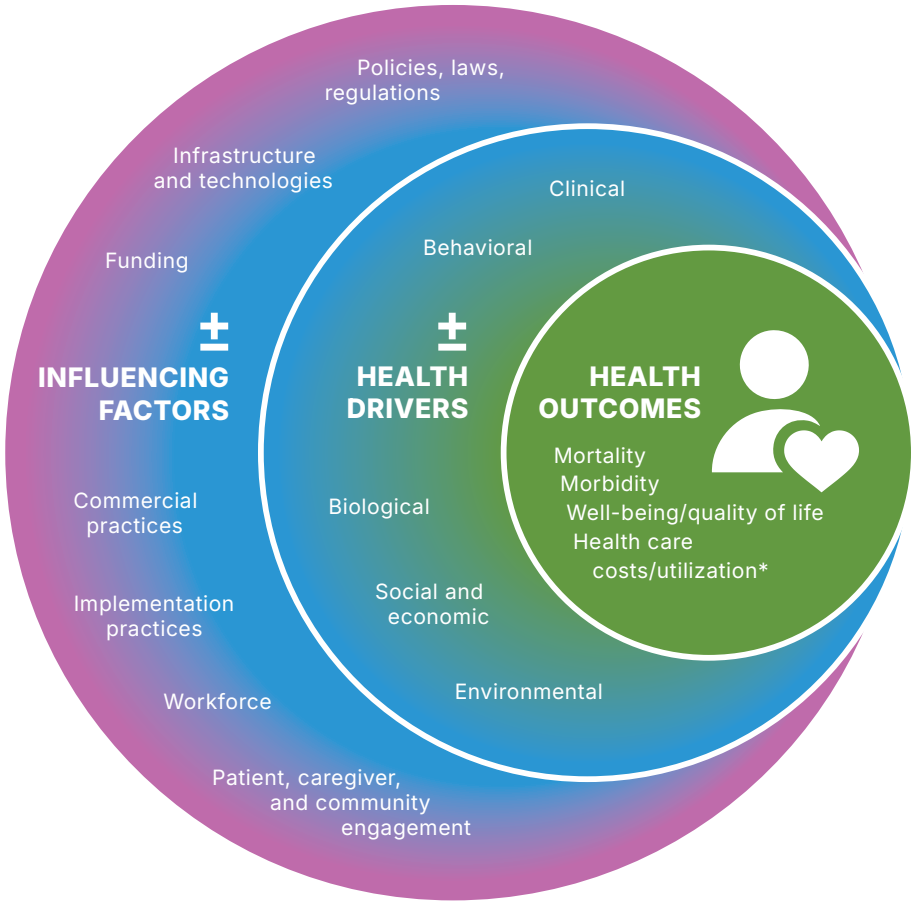
In short, although funders cannot replace government support, they can play a catalytic role in both advancing new ideas and ensuring that proven solutions are translated into practice. By combining strategic vision with practical tools, they can help develop and transform the infrastructure, workforce, and evidence base needed to modernize the U.S. health research ecosystem and deliver measurable improvements in health and well-being.

III. The Approach: A Funders' Framework for Driving Health Outcomes

For funders to make meaningful investments in health solutions science, they must have a clear view of how drivers and influencing factors interact to shape health outcomes, health care utilization and costs, and opportunities for improvement. Drivers are the direct and proximal influences on health—such as biological, behavioral, clinical, environmental, social, and economic factors—that most immediately affect outcomes. Influencing factors, in contrast, are the structural or contextual conditions that influence how, when, or for whom those drivers have an effect; these include policies, technologies, workforce structures, and other systemic factors. Both are essential targets for health solutions science and its translation. **Figure D** illustrates how these elements interact to influence both population health and well-being and patterns of health care use and spending.[5]

Health solutions science encompasses fields such as health services research, public health research, and implementation science[6]—each generating evidence to improve health and strengthen the systems that support it. Therefore, instead of focusing narrowly on specific disciplines, the framework centers on the goal of improving health outcomes—identifying the factors that influence that goal and giving funders a practical tool for spotting high-leverage opportunities, considering how different areas of research open pathways for innovation, and determining how those opportunities best align with their organizational priorities. It is intended to help funders see across traditional research disciplines and silos to identify where coordinated investments can have the greatest impact.

D. An Outcomes-Based Framework for Health Research Funders



*Cost/utilization are included as outcomes because many health solutions science interventions aim to reduce the likelihood that patients will end up in the hospital or emergency department, which can help lower health care costs across the nation. This is particularly important for research focused on preventative care.

5 Definitions for each of the drivers and influencing factors are in Appendix B.
6 Appendix C provides additional information on fields encompassed by health solutions science.

> It's clear that we need a radical shift. We need an approach that moves beyond just medical care; we need an approach that embraces a holistic perspective and respects and integrates every individual's physical, behavioral, spiritual, and socioeconomic well-being.
>
> **Tina Savla**, Virginia Tech
> Whole Health, Whole Communities Symposium

Drawing on the 18 national symposia, the following example research questions illustrate how these relationships come to life in practice. Appendix D complements these examples by highlighting overarching areas of opportunity that participants raised across the symposia—areas that often span multiple drivers and influencing factors and point to where progress could yield significant improvements in health outcomes.

From the Strengthening Pathways Symposia

Examples of research questions highlighted by the 18 national symposia

Clinical (driver). Considering the street medicine programs that deliver care to unhoused populations, which team structures and visit routines are the most effective at keeping people consistently engaged in care and reducing emergency department use? This question addresses barriers to engaging unhoused populations in care due to distrust, repeated displacement, lack of access, and poor treatment.

Environmental (driver). Which local heat-protection strategies—such as access to cooling, home upgrades, and eviction prevention—are most effective at reducing emergency department visits due to extreme heat, and for which neighborhoods? The question addresses the conditions that leave communities vulnerable during the rising number of extreme heat events occurring across the nation.

Infrastructure and technology (influencing factor). Which artificial intelligence tools, when used in health care settings, improve patient outcomes and experience and save clinicians time without adding new risks or bias? This question addresses the fact that artificial intelligence can magnify bias and erode trust if not properly evaluated prior to implementation.

Workforce (influencing factor). Which bundles of support—such as local training pathways, loan-repayment or bonus pay, help with housing and child care, and team support—most effectively attract and keep clinicians in rural clinics? This question addresses the challenges that inhibit clinician recruitment and retainment in rural settings.

These examples illustrate the kinds of questions and opportunities that emerge when funders take a broad, outcomes-based view of health research. To translate those opportunities into impact, funders also need ways to assess whether proposed projects are positioned to succeed in real-world settings. Drawing on insights from the symposia and the considerations detailed in Appendix E, the following checklist highlights practical indicators that signal whether a project is likely to generate lasting improvements in health outcomes. Not every project will include all elements, but together they point to conditions that help innovations succeed in practice:

1. **Clear goals and measurable outcomes.** Defines the problem, identifies who will benefit most from the intervention, and specifies indicators to track improvement.
2. **Leadership commitment.** Has visible support from organizational leaders and aligns with institutional priorities.
3. **Implementation and sustainability.** Plans for adoption beyond the pilot phase, using implementation science and strategies to phase out ineffective practices.
4. **Collaborative partnerships.** Engages relevant community, clinical, and organizational partners with the support needed to participate meaningfully.
5. **Cross-sector teamwork.** Builds diverse teams that connect clinical, policy, and operational perspectives to accelerate adoption.
6. **Continuous learning and evaluation.** Uses data to assess progress, adapt in real time, and document what works for broader use.

When used in conjunction with the outcomes-based framework introduced earlier, this checklist helps funders recognize projects with the potential to improve health outcomes and build stronger pathways from evidence to real-world impact.

IV. The Investment Spectrum: Mobilizing Every Form of Capital to Maximize Impact

The opportunities and framework outlined in the previous sections make clear that bold ideas alone are not enough—real progress depends on the resources that carry those ideas into practice. Historically, many funders have used grants as their primary tool for impact. Although traditional grants remain the backbone of health research, they rarely provide the sustained support needed to move proven pilots into real-world practice. When that happens, promising innovations often falter due to gaps in funding for implementation, lack of leadership buy-in, or regulatory and payment hurdles.

Considering a spectrum of capital that is flexible and impact oriented can help funders strategically align or incentivize different forms of financing to accelerate progress. In the market-driven U.S. health system, using blended strategies that include both grants and different forms of investments is essential to bridge the gap between discovery and real-world adoption, ensuring promising innovations can reach patients, communities, and populations at scale.

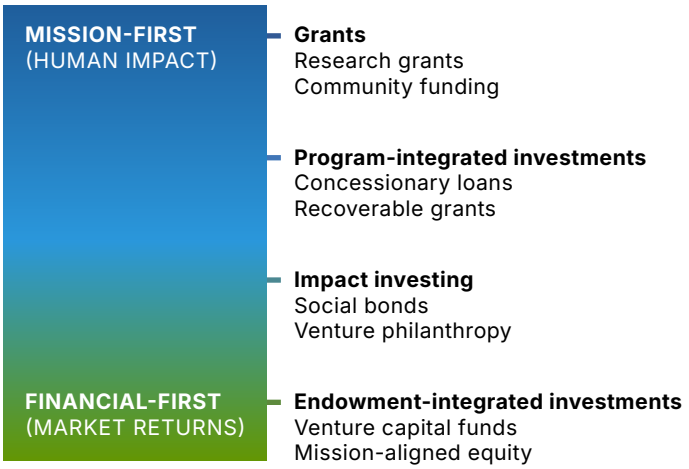
The spectrum of capital ranges from mission-oriented philanthropy to financial, market-driven investments **(figure E)**.

- **Grants** support organizational mission and provide essential, non-repayable funding to support research, community programs, and advocacy.
- **Program-integrated investments** use concessionary loans and recoverable grants to make an impact in areas where traditional markets underinvest.
- **Impact investing** blends mission and market goals through instruments such as social bonds and venture philanthropy, aiming for both measurable health outcomes and financial sustainability.
- **Endowment-integrated investments** deploy market-rate capital into mission-aligned opportunities such as venture funds or equity stakes in health companies, ensuring long-term returns while advancing research and innovation.

By using diverse financial tools, funders can advance their mission and accelerate the impact of health solutions science in different ways.

The use of diverse forms of capital is already well established in biomedical research, where venture philanthropy, blended funds, and mission-related investments have fueled discovery, commercialization, and clinical adoption. The following text boxes illustrate the promise of applying diverse capital in the health solutions science space. By adapting the investment models that have accelerated biomedical progress, funders can open new pathways for translating health solutions science evidence into enduring improvements in health.

E. The Spectrum of Capital for Health Research and Outcomes



Market-rate impact investment

The American Cancer Society's BrightEdge identified affordability as a critical barrier in cancer care: many patients abandoned treatment because the cost of care generated overwhelming financial stress. To address this, BrightEdge invested in TaylorMed, a software company that helps patients find and enroll in financial assistance programs. Using market-rate venture capital, BrightEdge backed a scalable platform that now connects patients to over 7,000 support programs, enabling hospitals to reduce financial costs and improve adherence to treatment. The investment generated financial returns for the American Cancer Society while touching millions of patient lives.

Social Impact Fund

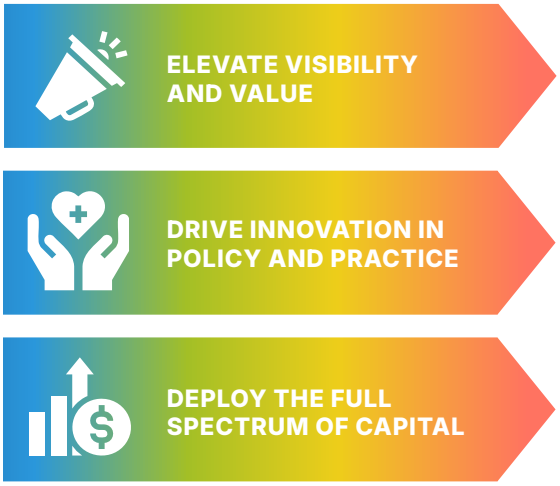
Recognizing that 80 percent of health outcomes are shaped outside clinical settings, the American Heart Association's Social Impact Fund turned its attention to housing insecurity. One investment supported the Destiny Housing Corporation, which provides safe housing for women and children escaping domestic violence. Chronic trauma and instability drive long-term cardiovascular risks in this population. Through a mix of grants, loans, and equity, the Fund enabled Destiny Housing to expand its services, stabilizing families and reducing health risks tied to stress and poverty. Although financial returns were secondary, the health equity outcomes were profound, underscoring how community-level capital can close gaps traditional health care dollars cannot.

Venture philanthropy

Women of color face persistent inequities in accessing culturally competent health care, resulting in poorer outcomes and eroded trust in the system. To help overcome this barrier, Rock Health.org deployed venture philanthropy capital to back Health In Her HUE, a digital platform connecting women of color with trusted providers. Unlike traditional venture capital, this flexible capital accepted higher risk and longer timelines, allowing the company to test and refine its model while attracting follow-on investment. The platform grew into a trusted network, improving patient-provider matching and enabling thousands of women to find care aligned with their needs. By blending philanthropy with venture tools, RockHealth.org catalyzed innovation in an area long overlooked by mainstream markets.

V. The Vision: Collective Actions to Deliver Lasting Change

The challenges, framework, and funding tools outlined in the preceding sections point toward a collective path forward. Building on these foundations—and on the insights shared in the 18 national symposia—there is a powerful opportunity for funders to act in coordination to advance health solutions science and its translation. By identifying, expanding, and diversifying approaches to innovative research, funders can accelerate improvements in health outcomes through three interconnected strategies:



Elevate visibility and value. Attract more funding to health solutions science by elevating its visibility and value, ensuring its contributions are recognized and resourced in proportion with their potential for impact.

Drive innovation in policy and practice. Sustain an engine of health innovation in the United States by testing new models of support that move beyond short-term pilots, empower community partners, and build the workforce needed to sustain effective solutions.

Deploy the full spectrum of capital. Drive sustainable investments by harnessing the full spectrum of capital—grants, concessionary financing, and market-rate investments—to improve health outcomes, scale what works, and attract additional partners from the public and private sectors.

Taken together, these strategies provide a cohesive roadmap—showing how funders can align their efforts to accelerate health innovation, strengthen communities, and achieve durable improvements in health outcomes nationwide.

Elevate and Champion the Visibility and Value of Health Solutions Science

Health solutions science and its translation into practice have led to measurable improvements in health, yet as described in sections I and II, this research remains underrecognized and underfunded. The field is hindered by disconnected efforts across subject areas, limited follow-through to put research findings into practice, and a lack of clear communication about the purpose and value of this work. By working together, the research community and its partners can take practical steps to close these gaps. Funders can play a pivotal role in turning this missed opportunity into broader societal benefit by:

- Serving as neutral conveners to bring together constituencies that may not otherwise collaborate, connecting the research community with other stakeholders and outside experts who can help find paths to ensuring health solutions science is fulfilling its enormous potential and that funders perceive its potential and value its impact.
- Producing and disseminating compelling, evidence-based narratives that demonstrate how the results of studies have improved lives and how greater investment could deliver transformative gains.
- Increasing private and public funding by building advocacy coalitions uniting community leaders, health systems, and private-sector voices to raise awareness and momentum, and by educating federal and state governments on the health and economic benefits of investment.

Drive Policy and Practice Innovation Through Bold Funding Models

As highlighted in the preceding sections, traditional funding models for health solutions science are not designed to bring proven solutions to scale. Too often, promising ideas are confined to short-term pilots that fade before achieving impact while the community-based organizations essential for trust and relevance remain underfunded. Funding streams frequently reward novelty and academic outputs over implementation, making it difficult to expand known solutions. Preventive and care delivery interventions also require varying timelines to demonstrate results, yet they struggle to attract support in systems that either demand quick returns or move too slowly to align with research cycles. These shortcomings extend to the workforce as well, leaving critical roles such as community health workers and behavioral health specialists underdeveloped and undervalued.

Funders can help close these gaps by testing new models of support that emphasize translation of research into practice; long-term sustainability; community impact; and workforce development. Specifically, funders can drive health innovation that benefits the population by:

- Building implementation partnerships with health systems, payers, and large employers by aligning shared priorities and identifying gaps that prevent progress, so promising care and prevention models can move beyond pilots into durable, scalable programs.
- Incentivizing and rewarding research that advances real-world solutions by (1) supporting evaluation frameworks that capture long-term returns—such as reduced disparities, improved quality of life, and avoided health costs—so results can be measured beyond short-term pilots; (2) experimenting with funding models that fit the spectrum of research and translation timelines; (3) revising proposal criteria to prioritize health impact over academic outputs; and (4) resourcing community-based organizations as equal partners in research and implementation, ensuring interventions are trusted, culturally grounded, and widely adopted. See Appendix E for considerations for supporting health solutions science.
- Expanding training and career pathways for professionals who connect research and practice—including community health workers, behavioral health specialists, and other interdisciplinary roles—so that interventions are applied effectively and designed to meet the needs of diverse populations.

Partnerships at Ariadne Labs

Ariadne Labs treats partnerships as the engine for turning ideas into scalable improvements by co-designing with health systems, governments, nongovernmental organizations, funders, and patients across its Design–Test–Spread continuum. Ariadne leans on implementation platforms to share tools, capture lessons from partners, and support cross-program learning so solutions succeed in diverse settings. Program teams pair with mission-aligned implementers—from multilateral agencies and national health services to community groups—to reach patients. They also invite foundations and delivery organizations into collaborations that fund evidence-building, test innovations, and spread what works.

Such partnerships help turn promising ideas into solutions that stick; build local capacity and data feedback loops so teams can improve in real time; and align incentives across funders, delivery organizations, and government so innovations get embedded in routine policy, payment, and practice. Because solutions are co-designed with patients and communities, they reach high-need groups, strengthen trust, and deliver measurable gains in outcomes and cost.

> We don't focus on sustainability. We get grants, we publish, and then we're off to the next thing.
>
> **Brian Rivers**, Morehouse School of Medicine
> Connecting Research to Health Justice in Local Contexts Symposium

Deploy the Full Spectrum of Capital to Ensure Sustainable Investment

As emphasized in section IV, grants alone cannot sustain the level of investment required to transform health outcomes. By strategically deploying the full spectrum of capital—ranging from grants and concessionary financing to market-rate investments—funders can bridge the gap between promising pilots and widespread adoption. Equally important, funders can draw federal partners and private investors into the field, multiplying the impact of every dollar and ensuring that relevant and trusted innovations have the resources to grow and endure. Specifically, funders can drive relevant and sustainable investments toward improvement in health outcomes by:

- Encouraging alignment across public and private capital by demonstrating how different forms of investment can build on one another, creating a clearer pathway for innovations to grow from pilots to scale.
- Mobilizing new investment by deploying catalytic tools—such as recoverable grants, program-related investments, and social bonds—and by using evidence and impact frameworks to demonstrate the long-term value of health solutions science innovations.
- Building shared investment platforms—such as revolving loan funds and blended finance facilities—that bring partners together to scale proven solutions, while enabling community-based organizations to access these resources and sustain their impact.

The three strategies outlined above provide a strong starting point for coordinated investment. However, realizing the full potential of health solutions science will require continued learning and refinement. Progress will depend on identifying what works best to uplift, advance, and translate this research, building shared evaluation frameworks that articulate which forms of capital to deploy and when and collaborating with partners who have already developed innovative investment models. Together, these efforts will accelerate learning and strengthen the pathways that connect research to real-world progress in health and well-being.

A Direct Call to Action: Funders as Catalysts for Health Transformation

The nation's stagnant health outcomes and persistent disparities call for a new approach—one that recognizes the power of the full spectrum of health research. This roadmap outlines a path for funders to act strategically: investing in research that reflects the full range of drivers and influencing factors shaping health, and mobilizing diverse forms of capital to translate evidence into lasting impact.

The Collective to Strengthen Pathways for Health Research invites funders and partners to join in advancing the three strategies outlined in this section—elevating visibility, driving innovation, and deploying capital to bridge discovery and practice. Now is the time for funders to align their efforts, scale promising approaches, and turn proven solutions into measurable gains in health and well-being across the nation.

References

In addition to the in-text citations throughout the Roadmap, these references informed key elements including Figure D in section III and definitions in Appendix B.

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Appendix A. National Symposia on Health Solutions Science

The Collective to Strengthen Pathways for Health Research issued a competitive request for proposals and funded 18 nationwide symposia on reimagined funding models, policy changes, innovative health care delivery approaches, systemic shifts, and cross-sector investments that can produce transformative gains in health outcomes. These symposia informed the content of the roadmap, elevating existing societal needs and innovative research opportunities. Symposia titles, location, directors and co-directors, dates, and hosting organizations are listed below.

1. **Catalyzing Innovation in Learning Health Systems Through Research.** New York, New York, April 29, 2025. Directed by Leora Horwitz, MD. Hosted by NYU Grossman School of Medicine.
2. **Prevention and Treatment of Chronic Disease in the Southeast.** Atlanta, Georgia, April 30, 2025. Directed by Kenneth Thorpe, PhD. Hosted by Emory University.
3. **Advancing Precision-Based, Integrative, and Individualized Healthcare.** San Juan, Puerto Rico, May 1, 2025. Co-directed by Marianyoly Ortiz-Ortiz, PhD and Kenneth Ramos, MD, PhD. Hosted by Puerto Rico Science Technology and Research Trust.
4. **Dartmouth Rural Health Symposium.** Hanover, New Hampshire, May 8–9, 2025. Co-directed by Amber Barnato, MD, MPH and Mark Creager, MD. Hosted by Dartmouth College.
5. **Evolving Better Health Care for Every American.** Washington, DC, May 13, 2025. Directed by Gillian Schmidler, PhD. Hosted by Duke-Margolis Policy Institute.
6. **The United States Street Medicine Summit.** Los Angeles, California, May 15, 2025. Co-directed by Kaitlin Schwan, PhD and Corinne Feldman, MMS, PA-C. Hosted by University of Southern California.
7. **Arizona Digital Health Symposium: Charting a Course for Advancing Digital Health.** Phoenix, Arizona, May 16, 2025. Co-directed by Michelle Govani, PhD and Matthew Buman, PhD. Hosted by Arizona State University Foundation.
8. **Advancing Patient Safety and Healthcare Quality: Bridging Research, Policy, and Implementation.** Washington, DC, May 16, 2025. Co-directed by Laura Sigman, MD, JD and Ayodele McClenney, JD. Hosted by Johns Hopkins Armstrong Institute for Patient Safety and Quality and Patients for Patient Safety.
9. **Whole Health, Whole Communities: Dialogues to Reduce Rural Health Disparities.** Roanoke, Virginia, May 19, 2025. Directed by Tina Savla, PhD. Hosted by Virginia Tech Foundation.
10. **Extending Return on Investment: A Multi-Sector Approach to Whole-Person Health.** Salt Lake City, Utah, May 22, 2025. Directed by Amy Locke, MD, FAAFP. Hosted by the University of Utah.
11. **Re-Engineering Health Decision-Making Environments: Aligning Research, Policy, and Innovation for Societal Benefit.** New York City, New York, June 2, 2025. Directed by Anna Harvey, PhD. Hosted by the Social Science Research Council.
12. **Symposium to Strengthen Maternal Health Research: Payer Strategies to Improve Maternal Health Care.** Boston, Massachusetts, June 4, 2025. Co-directed by Laura Garabedian, MPH, PhD and Emily Oken, MD, MPH. Hosted by Harvard Pilgrim Health Care Institute.
13. **Chicago CARE: Connecting and Aligning Research to Achieve Health Equity.** Chicago, Illinois, June 5–6, 2025. Co-directed by Jasmin Tiro, PhD and Erin Adams, PhD. Hosted by the University of Chicago.
14. **Breaking the Boundaries: Reimagining Research and Clinical Practice for a Healthier Tomorrow.** Birmingham, Alabama, June 9–10, 2025. Co-directed by Jennifer Croker, PhD and Timiya Nolan, PhD, ANP-BC, FAAN. Hosted by University of Alabama at Birmingham Heersink School of Medicine.
15. **Connecting Research to Health Justice in Local Contexts: Community-Driven Research Priorities and Opportunities for Scalable and Sustainable Impact.** Atlanta, Georgia, June 18, 2025. Directed by Muhammed Idris, PhD. Hosted by Morehouse School of Medicine.
16. **Fostering Collaborations: A Symposium to Advance Equitable Heat Health Actions.** Boston, Massachusetts, June 18, 2025. Co-directed by Van Du, MS, Kat Kobylt, MS, and Gregory Wellenius, ScD. Hosted by the Metropolitan Area Planning Council and Boston University Center for Climate and Health.
17. **The Promise of Integrated Behavioral Health Care: Improving Health Outcomes.** Washington, DC, July 10, 2025. Co-directed by Rosha McCoy, MD and Jennifer Faerberg, MHSA. Hosted by Association of American Medical Colleges.
18. **Symposium to Strengthen Health Research.** Phoenix, Arizona, July 23, 2025. Co-directed by Lila Rutten, PhD and Aaron Mangold, MD. Hosted by Mayo Clinic.

Appendix B. Definitions of the Drivers of Health Outcomes and Influencing Factors

Definitions of the drivers of health outcomes

Biological drivers are the genetic, molecular, and physiological factors that influence individual and population health. This includes inherited traits, immune system functioning, metabolic conditions, microbiome composition, and biological aging processes.

Behavioral drivers encompass individual-level behaviors, beliefs, preferences, and psychosocial characteristics that shape health outcomes. This includes lifestyle choices, mental health, coping skills, cultural beliefs and traditions, and health literacy.

Clinical drivers involve access to, quality of, and interactions with health care services. This includes the availability of care, provider practices, care coordination, digital health tools, and clinical guidelines.

Environmental drivers are the physical, built, and ecological conditions that influence health. These include housing, air and water quality, climate change, transportation systems, and neighborhood design.

Social and economic drivers are the conditions in which people live, work, learn, and age that shape their opportunities for health. These include income, education, employment, social support, neighborhood safety, and access to resources like food and childcare.

Definitions of the influencing factors

Implementation practices are the strategies, tools, and delivery models that support the adoption, scaling, and sustainability of effective health interventions. These may include care coordination approaches, workflow redesign, technology-enabled delivery systems, and quality improvement processes.

Policies, laws, and regulations include federal, state, and local laws and administrative rules that influence the availability, accessibility, and quality of services and supports that affect health—such as housing, nutrition, education, health care, and environmental protections.

Commercial practices are the business strategies, market structures, and financial mechanisms—such as insurance benefit design, provider payment models, and service marketing—that shape how people access and experience clinical and social services.

Infrastructure and technologies refer to the physical, organizational, and digital systems that enable health-related services and research. This includes health care facilities, public health systems, data infrastructure, interoperability of information systems, and digital health tools that shape how care is delivered, coordinated, and evaluated.

Workforce encompasses the availability, distribution, skills, and support of individuals who deliver health and related services. This includes clinicians, public health professionals, community health workers, behavioral health specialists, and other interdisciplinary roles, as well as the training, working conditions, and incentives that affect recruitment, retention, and performance.

Patient, caregiver, and community engagement is the active involvement of these stakeholders in setting research priorities, informing program design, and shaping policy.

Funding availability refers to the public and private financial resources that support the design, implementation, and sustainability of health-related interventions. It also includes investment in research and data infrastructure.

Appendix C. Disciplines That Are Part of Health Solutions Science

Discipline	Definition
Behavioral and social science research	Investigates how individual and group behaviors, social norms, identity, and community context influence health outcomes and decisions.
Comparative effectiveness research	Compares different interventions or strategies to determine which work best for particular populations or contexts.
Health economics research	Studies how health resources are allocated and used, evaluating costs, value, and efficiency to improve health outcomes and affordability.
Health services research	Examines how people access health care, how care is organized and financed, and what outcomes result from care delivery.
Health systems research	Analyzes how health systems function and how they can be improved to achieve better access, efficiency, quality, and equity.
Implementation science	Studies how evidence-based interventions are adopted, implemented, and sustained in real-world settings.
Population health research	Investigates health outcomes across groups and identifies social, behavioral, and environmental factors that contribute to those outcomes.
Public health research	Focuses on protecting and improving community health by preventing disease, promoting health, and implementing policy.

Appendix D. Areas of Opportunity for Advancing Health Solutions Science

Funders can rally around health solutions science in three critical areas with the potential for significant impact: improving prevention, addressing persistent disparities, and harnessing emerging technologies. Although promising approaches exist in each area, major gaps remain. Accelerating progress will require both creating new people- and community-centered knowledge and ensuring that evidence-based solutions are implemented, adapted, and scaled in real-world settings.

This appendix highlights opportunities for two complementary types of investment:

1. Discovery and validation research to generate or strengthen evidence on what works and why
2. Implementation and scaling to translate proven approaches into practice, expand their reach, and embed them sustainably within systems and communities

Drawing on discussions from the 18 national symposia that informed this roadmap, the sections below illustrate areas where funders can advance both forms of progress. Although the symposia primarily revealed opportunities within the health care system, there are also important avenues for advancing prevention, reducing disparities, and leveraging emerging technologies within communities and the organizations that serve them. Additional areas of opportunity may involve public health departments, environmental agencies, and policymakers.

Prevention

Preventive care has been proven to improve health and reduce spending, yet it remains underfunded and unevenly delivered (Institute of Medicine Roundtable on Evidence-Based Medicine, 2010). The symposia underscored that real progress depends on redesigning care around people's goals, extending services into trusted community settings, and rewarding prevention through payment and policy.

Funders can promote this shift by (1) advancing novel research into prevention by supporting studies that test new approaches for whole-person care, integration of preventive services, and culturally tailored outreach; and (2) accelerating implementation and scale by investing in the infrastructure, incentives, and partnerships that embed prevention into communities and sustain the workforce that delivers it.

Areas of opportunity for prevention research include:

- **Make whole-person prevention the default in primary care.** Redesign health care visits and care teams around people's goals so screening, vaccination, and self-management become routine and reduce avoidable use of emergency departments.
- **Embed prevention within trusted community organizations.** Deliver outreach, navigation, and group programs through faith, civic, and neighborhood organizations (with community health worker and peer support) to boost uptake and trust.
- **Offer preventive services outside of standard care delivery centers.** Shift appropriate tests, screening, and counseling to mobile, home, pharmacy, and tele-prevention workflows while safeguarding quality and equity.
- **Adjust digital outreach and navigation efforts to meet user needs**. Deploy and govern tech-enabled messaging and navigation that meet communities' cultural, language, and literacy needs to increase participation in prevention practices without amplifying bias.
- **Measure what matters to people.** Use a shared set of community or patient-prioritized measures and costs to allow clear comparisons across prevention models and transparent accountability.
- **Pay for prevention and sustain the workforce.** Align payer incentives and philanthropic capital to reward upstream results and stabilize community health worker roles with reimbursement and retention models that preserve trust.

Health disparities

Large gaps in health outcomes persist across populations, regions, and income levels, reflecting systemic barriers in access, financing, and trust. The symposia highlighted that many effective models for addressing these disparities exist but remain too small, underfunded, or poorly adapted to local context.

Funders can (1) support new research that identifies the conditions, incentives, and partnerships needed to reduce inequities in care delivery; and (2) invest in implementation and scale to expand proven models to diverse communities.

Areas of opportunity for health disparities research include:

- **Scale integrated behavioral health where disparities are concentrated.** Identify the integrated behavioral health models and payment or staffing adaptations that deliver the largest gains in safety net and rural settings while minimizing burnout and improving continuity.
- **Redesign rural health systems around essential services and sustainable financing.** Compare essential services hubs and global or geographic budgets against hospital-centric, fee-for-service models to improve access, outcomes, and workforce stability in high-need regions.
- **Institutionalize care for people experiencing unsheltered homelessness.** Standardize street medicine team models, data-sharing, and payment so preventive and ongoing care reliably reach people outside clinics—closing some of the starkest gaps in morbidity and mortality.
- **Advance maternal health equity through payer-led strategies.** Evaluate and scale effective payer innovations (early pregnancy identification, doula coverage, perinatal psychiatric access, respectful-care metrics, maternity bundles) that reduce severe maternal morbidity.
- **Put communities in the lead.** Back community co-led research, shared decision or governance boards, and multiyear, values-aligned funding so equity interventions stick and scale beyond pilots.

Emerging technologies

Emerging technologies like artificial intelligence (AI) and digital health tools can make care safer, more accessible, and more efficient. Yet without validation and strong implementation support, they may widen gaps instead of closing them.

Funders can (1) invest in early-stage problem-driven innovation that codesigns and tests new tools with patients, providers, and communities; and (2) strengthen adoption and sustainability by funding pragmatic evaluations, training, and data infrastructure that enable safe, unbiased use at scale.

Areas of opportunity for research on emerging technologies include:

- **Prove real-world benefit of emerging technologies within learning health systems.** Test whether AI and other digital tools measurably improve outcomes, reduce missed follow-ups, lessen clinician workload, and deliver return on investment; identify the supports needed to replicate and sustain validated tools across sites.
- **Apply an equity-first validation approach for these technologies and ongoing bias surveillance.** Co-design pre- and post-deployment standards (calibration, error rates, disparate impact) with community partners to ensure tools perform fairly and earn trust.
- **Make diagnosis safer by embedding technologies into electronic health records.** Evaluate how combining AI-powered alerts and automatic follow-up tracking (abnormal results, missed appointments) with standard care-team routines and patient outreach affects early detection of stroke, sepsis, and cancer; measure time to diagnosis, clinician workload, and safety.
- **Make data useful with interoperable, cross-sector pipelines.** Integrate electronic health records, data on social needs, and patient-generated data to target resources, track equity gaps, and strengthen governance.
- **Invest in problem-driven, user-designed technologies.** Provide flexible capital for tools co-created with clinicians, patients, and community partners to address high-friction workflows; pair development with embedded evaluation and return on investment thresholds to speed adoption.

Across these three domains, funders can advance discovery and action, investing both in generating evidence and translating it to improve lives. By balancing support for innovation with commitments to implementation, funders can help transform promising ideas into measurable, lasting gains in health.

Appendix E. Considerations for Supporting Health Solutions Science

Funding does not guarantee impact on its own. To move beyond promising ideas and change health outcomes, several qualities of the organizations, teams, and approaches involved in supporting and conducting health solutions science can accelerate the likelihood of success. Strong leadership, thoughtful planning for sustainability, meaningful community engagement, and the ability to measure and adapt are just as important as technical expertise. By considering these attributes, funders can make it more likely that their investments lead to lasting improvements in care, policy, and population health.

1. Leadership engagement and alignment

When senior leaders of health care organizations are actively involved, research projects gain the visibility, resources, and organizational support they need to succeed. Effective engagement goes beyond simply signing off on a project. It means leaders champion the work, dedicate resources, and make learning and improvement a core institutional priority.

The symposia offered examples of what this looks like. At New York University Langone Health, leadership engagement meant co-funding and co-prioritizing projects with health system executives and frontline clinicians, ensuring that innovations advanced both institutional strategy and day-to-day clinical needs. The symposium hosted by the University of Alabama at Birmingham highlighted how university and health system leaders sustained prevention and implementation efforts by building multisector partnerships—such as Live HealthSmart Alabama and the Obstetrical Digital Regionalized Initiative—that align academic, governmental, community, and philanthropic actors around shared goals. At the Association of American Medical Colleges, participants provided examples of engaging health system executives to build integrated behavioral health programs into core operations. At the University of Chicago, the Chicago CARE symposium brought academic, health system, community, and civic leaders together to realign research priorities, funding structures, and cross-sector partnerships as a strategy for reducing persistent neighborhood-level health gaps in Chicago. And at the Duke-Margolis Health Policy Conference, federal and state policymakers, private sector leaders, and health system innovators demonstrated how public-private partnerships can drive and sustain innovation in health systems change.

Such commitment signals to clinicians, researchers, and staff that innovation is not a temporary add-on but part of the organization's culture. With this level of backing, new ideas are more likely to be adopted, scaled, and sustained across the system. Leadership engagement also helps remove barriers to change, such as competing priorities or staff burden, by aligning projects with organizational goals, providing dedicated time and resources, and modeling openness to new ways of working.

2. Integrate implementation science at the outset and de-implement what no longer works

Implementation science helps anticipate how new ideas will fit into real-world settings. This includes understanding how an intervention would work in different contexts, which barriers might slow adoption, and what strategies could support scaling and adaptation over time. By paying attention to feasibility, sustainability, equity, and cost, funders can support innovations that are not only effective in research settings but also in practice.

The symposia highlighted the importance of embedding implementation science principles early on. For example, Arizona State University discussed co-designing digital health tools with patients, clinicians, and industry to ensure usability and early integration into workflows, reducing the risk that promising technologies would stall at the pilot stage. At the Mayo Clinic, leaders called for clinical trials that combine traditional efficacy testing with real-world evidence so that effectiveness in diverse populations is established before rollout. The Harvard Pilgrim Health Care Institute's maternal health symposium demonstrated how integrating payer-led interventions such as coverage for doula services can advance implementation of evidence-based strategies and long-term outcomes. Finally, the Social Science Research Council's discussions on re-engineering decision-making environments illustrated how behavioral science and systems design including decision-architecture changes such as EHR-embedded nudges, artificial intelligence (AI)-driven triage tools, and redesigned clinical workflows can support adoption and scale of proven, evidence-based practices across settings.

Equally important is de-implementation—the process of phasing out practices, programs, or policies that no longer serve patients well. At the University of Southern California's Street Medicine symposium, participants discussed replacing current models of care delivery for unhoused populations with evidence-based street-care teams. Similarly, in Greater Boston, the heat-health symposium hosted by the Metropolitan Area Planning Council and Boston University highlighted the need to move away from siloed infrastructure planning and outdated infrastructure, and to support locally grounded, community-driven, evidence-informed heat resilience actions through sustained cross-sector collaboration among municipalities and partners. A commitment to implementation therefore requires both adding what is new and letting go of what no longer works.

3. Commit to sustainability

Planning for sustainability helps ensure that evidence-based strategies become integrated into health care delivery instead of fading when the initial funding ends. This may involve securing new funding streams, weaving innovations into existing budgets, or aligning innovations with broader policy priorities. Sustainability also depends on relationships with the partners and community members who continue to carry the work forward. Considerations include capital to move research into implementation, infrastructure to support long-term sustainability, and workforce capacity to keep practices alive beyond a pilot phase. For example, the symposium hosted by the University of Alabama at Birmingham emphasized building infrastructure that outlives a single grant through enduring partnerships, workforce training, and community engagement. Additionally, at the symposium hosted by Virginia Tech, organizers sustained post-convening momentum for whole health by offering flash funding to interdisciplinary teams to develop early-stage ideas focused on prevention, care delivery, community engagement, or implementation science.

4. Meaningfully engage patients and communities

Engagement of patients and communities refers to their active involvement in helping define questions, choosing meaningful outcomes, and guiding decisions so research aligns with lived experience. Many symposia, including those hosted by Dartmouth College, University of Chicago, Morehouse School of Medicine, and University of Alabama at Birmingham, all highlighted the importance of co-creating solutions with historically marginalized communities, underscoring the need for trust, community partnership, and locally grounded priorities in advancing health equity.

Across the symposia, there were numerous examples of what this engagement could look like. At the symposium hosted by Johns Hopkins University on patient safety, advocates emphasized shifting from doing safety work for patients toward doing it with them. That shift was reflected in strategies such as co-creating tools, using real-time feedback, being transparent about harms, using patient-reported data, and having partnerships that make patients co-designers of safer, more supportive systems. Virginia Tech's whole health symposium highlighted how community centers, senior centers, and libraries can serve as venues for peer-led support groups and interventions to support connection and whole person health, while mutual aid networks and local nonprofits can provide services to address health-related social needs. And the University of Southern California's Street Medicine symposium demonstrated deep engagement of people who had experience with unsheltered homelessness whose insights shaped the symposium's agenda and ensured that discussions and policy recommendations reflected the realities of this population.

5. Cross-disciplinary and sector partnerships

Health outcomes are shaped by more than doctors and hospitals; policy, community organizations, payers, and industry all play essential roles. The most effective teams bring together clinicians with different training and perspectives alongside nonclinical partners who understand policy, financing, community needs, and technological innovation. When these disciplines and sectors work in concert, solutions are not only more comprehensive but also more readily adopted and sustained.

Across symposia, cross-disciplinary partnerships were presented not as an add-on, but as the mechanism that makes research usable in the real world. Participants emphasized shared design and shared accountability, with academic and clinical teams working alongside community partners so priorities, outcomes, and implementation strategies reflect lived experience and are built for uptake. A second theme was the need to align the incentives and infrastructure that sit outside any single institution, especially financing, policy, and technology. Several symposia underscored that prevention- and equity-oriented strategies are difficult to sustain without payers, policymakers, employers, and philanthropy working in concert to support delivery-system capacity and realign incentives. Others made a similar point about innovation, arguing that tech-enabled tools and new evidence models move more efficiently from pilots to scaled implementation when developers, health systems, payers and regulators, and communities set evidence expectations early, so solutions are adoptable and scalable across settings.

Taken together, the symposia emphasized that when research is supported by cross-disciplinary and cross-sector partnerships, its reach and impact expand well beyond the clinic—into communities, markets, and policy systems that ultimately determine whether innovations thrive.

6. Culture of learning and adaptability

Effective research teams engage in learning not as a one-time event but as an ongoing cycle of testing, refining, and improving. Teams that adapt quickly can respond to new challenges and apply lessons in ways that move faster and remain relevant to real-world needs.

Across symposia, several strategies illustrated what this looks like in practice. The symposium hosted at New York University Langone Health emphasized embedding rapid-cycle testing, including capacity for rapid randomized controlled trials, into everyday clinical operations, supported by real-time data dashboards, human-centered design, and aligned incentives to accelerate continuous learning and implementation of evidence-based innovations. At Arizona State University, digital health leaders highlighted how embedding evaluation into real-world implementation can help close the 17-year translation gap, ensuring that tools such as wearables and AI-driven platforms continuously adapt to community needs through co-design and iterative refinement. And at the Mayo Clinic symposium, participants urged integrating pragmatic elements into trial design and using innovative approaches such as basket trials, umbrella trials, aggregated N-of-1 trials, and AI-enabled prescreening platforms to improve access, enhance real-world relevance, and better meet the needs of diverse populations.

Beyond rapid-cycle testing inside clinical and research workflows, several symposia emphasized that a culture of learning also depends on the structures that make feedback actionable, including shared governance with communities, cross-sector coordination, and incentives that reward adaptation over time. Complementing the patient co-design and cross-sector partnership previously described, several symposia underscored how governance and incentives can make learning continuous rather than episodic. The Morehouse School of Medicine symposium emphasized models of community co-leadership that pair mutual accountability with fair compensation, reinforcing that learning systems improve when communities help set agendas and define what success looks like. The University of Utah's whole person health symposium similarly reframed adaptability in economic terms, highlighting how traditional return on investment approaches can miss long-term and community-level benefits and calling for new measurement and value frameworks that enable multisector partners to adjust priorities and investments over longer horizons as evidence evolves.

These approaches illustrate how a culture of learning can be sustained through rapid, embedded testing; transparent use of real-world data; accountable partnerships with patients and communities; and flexible frameworks that evaluate, validate, and adapt models across populations and contexts.

7. Ability to address measurable gaps in health outcomes

A defining aim of health solutions science is to generate evidence that translates directly into better health outcomes, especially for underserved groups. Projects should not only describe how systems can improve but should demonstrate, through rigorous evaluation, that the changes they test reduce measurable gaps in outcomes across populations. Funders can strengthen the field by prioritizing research that begins with clear definitions of the disparities it seeks to address, such as differences in life expectancy, preventable hospitalizations, or maternal morbidity, and that tracks whether interventions narrow those gaps over time.

Across the symposia, participants repeatedly emphasized the importance of linking innovation to measurable progress in improving outcomes and reducing disparities. At Emory University, prevention researchers working in the Southeast, a region with a disproportionate burden of chronic disease, called for predictive modeling to demonstrate the return on investment from preventive interventions. The Harvard Pilgrim Health Care Institute's maternal health symposium highlighted payer strategies to improve maternal health care, with a focus on reducing maternal mortality and severe maternal morbidity, and addressing racial and ethnic disparities. The Association of American Medical Colleges symposium on integrated behavioral health shared evidence that embedding behavioral health in primary care settings improved clinical outcomes and reduced emergency department use for patients with complex needs who often fall through the cracks of fragmented systems. The Dartmouth Rural Health symposium underscored the need to address structural and systemic challenges to close the rural–urban life expectancy gap. Finally, the University of Utah's discussions on whole person health highlighted collective return on investment frameworks designed to capture population-level well-being gains and to show measurable improvement in underserved and rural regions.

Building on these lessons, funders should encourage projects to link innovation and implementation to quantifiable results—tracking not only processes or participation but also real-world changes in health, cost, and patient experience among the populations experiencing the worst outcomes. Evaluation frameworks should include metrics that disaggregate data by race, ethnicity, geography, and income to reveal who benefits. Finally, research should capture the long-term societal and economic value of outcome improvement, demonstrating that investments in prevention, care redesign, and community partnership yield measurable, durable gains.

8. Avoid concentrating funding

Although well-known institutions often receive repeat funding, this approach can unintentionally narrow the field of innovation and miss opportunities to build capacity elsewhere. Supporting a wider range of organizations and interventions not only generates new ideas but also fosters local ownership and incorporates perspectives that large academic centers alone may overlook.

The symposia highlighted the value of diversified funding. For example, the Mayo Clinic and Arizona State University symposia highlighted how technology companies, AI developers, and private-sector leaders can help advance innovation beyond traditional academic approaches. Funders were also encouraged to support cross-sector intermediaries that can amplify local voices. For example, the Metropolitan Area Planning Council and Boston University's climate health symposium showed how regional planning agencies and community-based organizations can convene municipalities, academic institutions, and residents to co-develop a localized, evidence-informed research and action agenda. Additionally, the Puerto Rico Science Trust illustrated the potential of regional innovation hubs, bringing precision medicine and integrative health approaches to communities that are often excluded from large mainland research initiatives.

By diversifying the organizations that receive funding, research ecosystems gain agility, cultural relevance, and broader legitimacy. This approach strengthens local capacity, brings overlooked perspectives to the table, and ultimately ensures that promising ideas have more pathways to scale.

Funder's checklist for building stronger pathways from research to practice

Drawing on the themes above, funders should look beyond scientific novelty to assess whether projects are positioned to make a lasting impact. In addition to assessing feasibility and sustainability, funders should consider whether proposed projects define a clear community need and focus on populations most at risk of poor outcomes. The most effective initiatives demonstrate not only that outcomes improve overall, but that there are measurable reductions in avoidable illness, premature death, or other indicators among high-need populations. Research is most likely to spread, adapt, and sustain when organizations demonstrate strong leadership, authentic partnerships, attention to implementation, and strategies for diversity and scale. The following checklist highlights discrete attributes and practices that signal whether a proposed project is designed not just to generate evidence, but to be embedded into real-world systems where it can improve health outcomes. Not all considerations will be relevant to all health solutions science research and translation projects. The checklist is intended as a flexible guide, helping funders focus on the factors most likely to translate evidence into lasting improvements in health outcomes. A condensed version of this checklist is also included in section III of the Roadmap.

Organizational attributes

- Demonstrated **leadership engagement** (senior executives visibly championing, co-funding, or embedding research in institutional strategy and holding teams accountable for measurable improvements in outcomes and disparities).
- A **culture of learning** with structures for rapid-cycle testing, transparent data use, and blameless problem-solving.
- **Sustainability planning** beyond a single grant (integration into ongoing operations, infrastructure, or policy).
- **Capacity building for diverse organizations** (inclusion of minority-serving institutions, community-based groups, and regional hubs, not just well-resourced academic centers).
- **Existing cross-sector relationships** or plans to build them (with policy, community, industry, payers, or public health).

Implementation and evaluation strategies

- Plans to **collect and disaggregate data** by important subgroups to identify who benefits and whether disparities are narrowing.
- Clear use of **implementation science methods** (testing feasibility, scalability, cost, and equity from the start).
- **De-implementation strategies** to phase out outdated or ineffective practices that compete with new innovations.
- Plans for **real-world evaluation** (for example, dashboards, rapid trials, real-world evidence, or embedded research approaches).
- Evidence of **linkage between implementation and quantifiable outcomes** such as improved clinical indicators, fewer preventable hospitalizations, or increased life expectancy in target populations.
- Explicit strategies for **scaling and adaptation** across different settings, not just pilot success.
- Plans for evaluating **long-term societal and economic value**, including return on investment or cost savings from improved outcomes.
- Metrics for both **effectiveness and sustainability** (uptake, reach, cost-effectiveness, long-term adoption).

Community and patient engagement

- Evidence of **patient and community co-design** in setting agendas, selecting outcomes, and governance, with transparent reporting on resulting health improvements.
- Fair **compensation and voting rights** for community partners rather than token advisory roles.
- Use of **trusted intermediaries** (faith leaders, extension services, advocacy groups) to expand reach and relevance.
- Mechanisms for **ongoing feedback loops** (patient-reported data, town halls, advisory councils, transparency on results).

Diversity considerations

- Involvement of **diverse organizations** (rural providers, nonprofits, startups, regional health collaboratives) in conducting evaluation and implementing effective interventions.
- Strategies to ensure **equitable adoption** (testing and evaluating impact across diverse populations, bias checks in tools like AI).
- Plans to strengthen **local ownership and capacity** so benefits endure in underserved or under-resourced communities.