COALITION FOR INNOVATION

HealthTech Blueprint for the Future

Coalition for Innovation, supported by LG NOVA

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The views and opinions expressed in the chapters and case studies that follow are those of the authors and do not necessarily reflect the views or positions of any entities they represent.

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Preamble

The Coalition for Innovation is an initiative hosted by LG NOVA that creates the opportunity for innovators, entrepreneurs, and business leaders across sectors to come together to collaborate on important topics in technology to drive impact. The end goal: together we can leverage our collective knowledge to advance important work that drives positive impact in our communities and the world. The simple vision is that we can be stronger together and increase our individual and collective impact on the world through collaboration.

This "Blueprint for the Future" document (henceforth: "Blueprint") defines a vision for the future through which technology innovation can improve the lives of people, their communities, and the planet. The goal is to lay out a vision and potentially provide the framework to start taking action in the areas of interest for the members of the Coalition. The chapters in this Blueprint are intended to be a "Big Tent" in which many diverse perspectives and interests and different approaches to impact can come together. Hence, the structure of the Blueprint is intended to be as inclusive as possible in which different chapters of the Blueprint focus on different topic areas, written by different authors with individual perspectives that may be less widely supported by the group.

Participation in the Coalition at large and authorship of the overall Blueprint document does not imply endorsement of the ideas of any specific chapter but rather acknowledges a contribution to the discussion and general engagement in the Coalition process that led to the publication of this Blueprint.

All contributors will be listed as "Authors" of the Blueprint in alphabetical order. The Co-Chairs for each Coalition will be listed as "Editors" also in alphabetical order. Authorship will include each individual author's name along with optional title and optional organization at the author's discretion.

Each chapter will list only the subset of participants that meaningfully contributed to that chapter. Authorship for chapters will be in rank order based on contribution: the first author(s) will have contributed the most, second author(s) second most, and so on. Equal contributions at each level will be listed as "Co-Authors"; if two or more authors contributed the most and contributed equally, they will be noted with an asterisk as "Co-First Authors". If two authors contributed second-most and equally, they will be listed as "Co-Second Authors" and so on.

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The Coalition is intended to be a community-driven activity and where possible governance will be by majority vote of each domain group. Specifically, each Coalition will decide which topics are included as chapters by majority vote of the group. The approach is intended to be inclusive so we will ask that topics be included unless they are considered by the majority to be significantly out of scope.

We intend for the document to reach a broad, international audience, including:

- People involved in the three technology domains: CleanTech, AI, and HealthTech
- Researchers from academic and private institutions
- Investors
- Students
- Policy creators at the corporate level and all levels of government

Chapter 13: The Impact of AI on Caregiving, Personalized Care, and Health Coaching

Authors: Qiana Martin, Ann M. Marcus

Introduction

Artificial intelligence is no longer confined to research labs or specialized clinics; it is rapidly becoming a practical tool for addressing some of the most pressing challenges in healthcare. Two areas stand out as particularly ripe for transformation: the hidden labor of caregiving and the growing demand for personalized health coaching. Family caregivers represent an invisible workforce whose unpaid contributions sustain millions of patients, yet often at the cost of their own well-being and economic stability. At the same time, patients themselves are seeking tailored guidance that fits their individual health profiles, habits, and life circumstances.

AI offers a powerful bridge between these realities. On one side, it can help caregivers manage complex care tasks, reduce stress, and prevent burnout. On the other, it enables highly personalized health coaching that empowers individuals to take proactive control of their health. Together, these developments point toward a more integrated, patient- and caregiver-centered model of healthcare. The sections that follow explore both dimensions: first, the potential of AI to support caregivers, and second, its role in advancing personalized care and coaching.

Why AI for Caregivers Is the Missing Link in U.S. Healthcare

An invisible workforce contributes $600 billion dollars in value to the U.S. economy each year. These unpaid employees are informal and family caregivers, working an average of 26 hours per week in addition to their paid full-time or part-time jobs. Many of these patient supporters do not think that assisting a loved one with errands, giving rides to appointments, completing online medical tasks, handling prescription management and taking the reins of patient navigation as caregiving. However, the impact of these irreplaceable healthcare workers is clear, and the task of taking on this additional workload is having far reaching consequences.

Harvard Business School's white paper, "The Caring Company", determined that 73% of all employees are serving in some form of a caregiving capacity. A sizable fraction of these caregiving employees are a part of the approximately 53 million Americans juggling the responsibilities of "caring for a spouse, elderly parent or relative, or special-needs child." It has created $33 billion in yearly lost workplace productivity, due to absences, reduced hours, rearranged work schedules and declined promotions. Moreover, this extra workload has caused an estimated $13.4 billion in increased health care costs annually for employers.

Between the growth of the aging population and demands placed upon working caregivers, our society could reach a breaking point without the

intervention of digital innovation by way of AI. According to the 2023 Profile of Older Americans Report, the overall percentage of older Americans relative to the population has been growing since Baby Boomers started turning 65 in 2011. Helpr's 2025 Blueprint for Better Care Benefits Report estimates that the number of adults aged 65 or older will grow to 20% of the population by 2030. It's important to note that, due to increased longevity among older Americans, "the 85 and older population is projected to more than double from 6.5 million in 2022 to 13.7 million in 2040 (a 111% increase)." Sandwich Generation caregivers, those who care for their children and elders simultaneously, are expected to be 25% of the workforce by this same period. In the past families and healthcare systems have been able to rely on immigrants for home health and long-term care support. Comprising 30% of personal care staff and 40% of home health aides, these needed employees are part of a shrinking workforce due to the federal administration's push to strip them of their work authorizations.

Challenges to Personalized Care

Unfortunately, the desire for offloading responsibilities is at odds with the realities of caregivers, the current healthcare landscape, and traditional medical protocols. The constant flow of caregiving responsibilities prevents overwhelmed caregivers from having the time, attention, and financial outlay to put towards finding, using, and adopting tailored care and health coaching resources. Helpr's 2025 Blueprint for Better Care Benefits Report highlights that caregivers who are women, frontline workers, low-income employees, or from families with special care needs face systemic barriers to care resources.

According to Deloitte's 2025 Global Health Care Outlook, 81% of surveyed hospital leaders acknowledge Gen AI is a trend that will have a moderate or serious impact on health care this year. Many shared that their hospital systems are exploring or planning to explore use cases in 2025, and 40% revealed that they are seeing a significant-to-moderate return on their Gen AI investments. However in Forbes article "Accelerating Healthcare With AI: Reducing Administrative Burdens", "healthcare workers are facing burnout as they struggle to meet the needs of the expanding patient population." Research published in the American Public Health Association's Official Journal of the Medical Care determined that the average primary care visit lasts 18 minutes, leaving a small window of opportunity for caregivers to learn, process, and ask follow-up questions about their loved one's current health condition.

Lastly, although there have been great strides made with digitizing medical records, integration across health systems, and implementing national efforts to improve continuity of care, a recent Mathematica article on fragmented care "suggests initiatives seeking to improve continuity, coordination, and comprehensive care more broadly may have to focus on a broader array of providers beyond the primary care setting if they are going to have an impact."

For example, my mother's medication protocol involved a process of switching from infusion treatments to an at home injectable. The approval plan for her to receive the medication with patient assistance from the manufacturer entailed my completion of an online application on behalf of my mother, a faxed form to her specialist from the manufacturer's representative, and a faxed completed form from her specialist's office. What should have been a day long, one-time process was stretched to a month long back and forth of constant phone calls to the manufacturer's customer service to find out why they had not received the faxed form from the physician's office, frustration on behalf of the healthcare professional that their multiple faxes were not being received and logged by the manufacturer's customer service center, and our worry about the effectiveness of a delayed treatment for her condition.

For already burdened caregivers, fragmentation adds additional stress, work, and increased possibility for negative health outcomes for their loved ones. The introduction of AI tools can create a layer of support that makes every day experiences such as the one above more efficient.

There is an overlooked and untapped opportunity to create AI tools to help this volunteer workforce tackle their invisible labor duties. Currently, caregivers must resort to sourcing suggestions from Reddit threads and news articles when it comes to AI tools for meal planning. ChatGPT has a directory of Custom GPTs for this task. One example is Meal Planner, Diet Advisor, and Private Nutritionist (by OG), which bills itself as a private professional nutritionist that will create structured meal plans with detailed recipes and provide dietary advice. Additionally, there are AI apps like ChefBot which touts itself as "an artificially intelligent cooking companion" that will generate unique recipes based on entering ingredients, dietary restrictions and preferred cooking style.

Case Study: The Primary Caregiver AI Toolbox

One day I blinked, and I was a caregiver. As with millions of Americans, this overnight promotion was the result of my mother's health collapse. She had been neglecting her own personal care at the expense of serving as the primary caregiver for her 95-year-old mother and 94-year-old father. After three months apart, my mother was soon rushed to the hospital, and my caregiving journey began. That was seven years ago.

Every caregiver's story is similar in different ways; my experience mirrors the reality of over 53 million unpaid caregivers. They are thrust into a job that requires them to shoulder invisible healthcare responsibilities, often without resources, training, or time. It is a tall order to juggle complex decisions that impact a loved one's health alongside one's own productivity, mental wellbeing, and finances. In a 2024 Otsuka study conducted by Columbia University Mailman School of Public Health, research found that caregiving-induced declines in health contribute an estimated $28.3 billion annually to healthcare costs, highlighting the profound economic impact of deteriorating caregiver well-being.

To ease the burden of invisible labor on caregivers, I created the Primary Caregiver AI ecosystem. The system currently contains six vertical AI agents that can do the heavy lifting for caregivers in the following areas:

- **Ready to Care** – Provides personalized, step-by-step caregiving guides.
- **RxWiz** – Gives simplified, reliable medication insights.
- **Ask the Doc** – Creates tailored questions for upcoming doctor visits.
- **Next Option** – Helps you discover breaking research & clinical trials
- **Out of Pocket** – Offers affordable, local healthcare service suggestions.
- **Conditional Eating** – Outlines meal plans and localized menu options for special diets

For example, a working mother caring for an aging parent with diabetes uses "Ask the Doc" for visit prep and "Conditional Eating" to find meals that align with her parent's dietary restrictions while they are out shopping for groceries.

Currently, The Primary Caregiver Toolbox offers a direct-to-consumer collection of AI tools with at-home and on-the-go support for a broad cross section of invisible labor tasks. Learn more by visiting the website: theprimarycaregiver.com

Outside of providing meal prep support for caregivers, TCARE.ai is "a digital platform that utilizes AI to assess the risks of caregiver burnout algorithmically." After an initial assessment, the algorithm will provide a care plan with interventions to best support the caregiver. This service is offered through managed care programs, insurance providers and employers.

AI's Role in Streamlining Healthcare Interactions

In the Future Healthcare Journal article "Artificial Intelligence in Healthcare: Transforming the Practice of Medicine," the authors wrote that "AI could significantly reduce inefficiency in healthcare, improve patient flow and experience, and enhance caregiver experience and patient safety through the care pathway.

For example, an AI tool to provide hyperlocal insights for members of the Infusion Access Foundation community would be an invaluable resource" noted Executive Director Alicia Barron. She recalls how – as a national resource provider – something as simple as securing transportation for a patient in the Houston area can be a complex endeavor due to the county borders and areas served by their transport partners. She remarked, "I was thinking how it would be great to have an AI tool to help with this, but I'm just not exactly sure how to go about it."

From easing the burden on healthcare stakeholders such as the Infusion Access Foundation to reducing healthcare costs, AI tools can serve as a 24-hour information resource and line of defense that yields better health outcomes. AI agents, for instance, can highlight overlooked prescription side effects (such as sunlight sensitivity or avoiding grapefruit) that patients or their caregivers might overlook. Bringing attention to these important medication details could result in preventable ER visits for adverse reactions.

Challenges to AI Adoption for Caregivers

The journey from developing AI tools that address caregiver needs to mass adoption has a number of barriers. Some statistics featured in athenahealth's "Patient Engagement in the Age of AI" white paper point to how digital literacy, privacy, ethics, and demographics can pose challenges for digital adoption. Older populations are not as tech savvy as younger generations. Women are more engaged than men. Rural patients lag behind those living in metropolitan areas. Moreover, there is higher usage of the tools by White and Asian users as opposed to Black and Latino users.

A necessary foundation to equitable access to these AI tools is broadband access. Considered a "super-determinant of health," it influences many of the socio-economic factors mentioned above that serve as barriers to AI adoption. As it stands, the current federal administration is pausing and dismantling a popular broadband grant program, which would prevent the awareness and adoption of these AI tools.

Additionally, AI tools need stringent guardrails to ensure that they do not misuse confidential health data, misinterpret caregiver inquiries, and provide responses that are outside of their scope. Deloitte's 2025 Global Health Care Outlook mentions that skepticism around AI tool effectiveness can halt or slow the adoption of these resources. There are concerns about blind spots, such as biased or unbalanced data used to train AI models, as well as documented instances of Gen AI technology "hallucinations" that produce false information.

Fortunately, programs such as Mayo Clinic's Platform Solutions Studio can provide an opportunity for AI-driven health tools to be "trained, tested, and deployed in a streamlined and accelerated manner." Innovators have access to high quality, de-identified data to train their tools and a comprehensive evaluation from teams of world-class physicians, data scientists, and AI experts.

Pioneering AI for the Caregiving Economy

For personalized care to be effective, digital innovation is needed to support caregivers. AI tools have the potential to aid in this revolutionary step towards more efficient, integrated care. With comprehensive vetting and strategic partnership among hospital systems, employers, insurance

companies, foundations, and other stakeholders, we can achieve mass adoption and ease burdens, improve healthcare interactions, and create sustainable, personalized patient support.

AI-driven personalized coaching and care is likely to have a significant impact on the roles and expectations of caregivers. While caregiving and health coaching may appear to be distinct aspects of healthcare, they are deeply interconnected. Family caregivers shoulder the burden of coordinating treatments, managing medications, and navigating fragmented systems, often without formal support. As described in the previous section, AI tools can ease these invisible responsibilities by streamlining logistics and offering decision support. Building on this foundation, let's look at how AI's ability to personalize care — through predictive analytics, adaptive coaching, and real-time monitoring — extends beyond caregivers to the patients themselves. Together, these two perspectives demonstrate how AI can simultaneously lighten the load for caregivers and empower individuals to actively shape their own health journeys.

AI in Personalized Care and Health Coaching

Personalized Care: How AI Is Transforming the Experience

Artificial intelligence (AI) is changing healthcare at a fundamental level by enabling a more personalized, proactive, and continuous model of support for patients and caregivers. By harnessing vast amounts of health data, AI technologies can improve the precision of diagnosis, tailor interventions to the needs of individual patients, and extend care beyond the clinic into daily life.

AI enhances the delivery of personalized care by analyzing data drawn from electronic health records (EHRs), wearable devices, and even genetic profiles. Predictive analytics makes it possible to forecast conditions such as diabetes, cardiovascular disease, and mental health deterioration with far greater accuracy and speed than traditional methods. For example, algorithms can adjust dietary, medication, and activity recommendations in real time, providing truly individualized treatment plans.

Virtual health assistants such as Babylon Health and Ada Health are already offering 24/7 support, enabling patients to check symptoms, receive health advice, and schedule follow-ups. These tools extend clinical care into the everyday lives of patients, easing the burden on medical professionals while improving access for users. A pioneering example is IBM Watson for Oncology, which was originally deployed to match cancer patients with the most effective treatments based on individual characteristics and current clinical literature.

AI in Health Coaching: A More Responsive and Scalable Model

Beyond direct clinical support, AI is also reshaping the field of health coaching. By recognizing behavioral patterns, AI can detect user-specific triggers — such as missed medication, poor sleep, or sedentary behavior — and provide tailored interventions. These tools dynamically adjust goals in real time, ensuring that coaching remains relevant and motivating as patients progress or encounter challenges.

AI-driven coaching platforms use multiple modes of engagement, from text messages and voice prompts to video consultations, to deliver nudges and positive reinforcement. Examples include Noom, which integrates psychology with real-time tracking to support weight loss, and Lark Health, which offers AI-powered coaching for diabetes, hypertension, and behavioral health. These platforms illustrate how AI can scale individualized support to millions of users simultaneously.

Challenges and Risks

Despite the promise of AI in personalized care and coaching, challenges remain. Protecting sensitive health data is paramount, requiring strict compliance with regulations such as HIPAA in the

U.S. and GDPR in Europe. Another concern is bias: when AI systems are trained on non-representative datasets, their recommendations may be less accurate or even harmful for certain populations, reinforcing health inequities.

There is also the risk of over-reliance on automation, which could reduce human oversight in critical areas of care. Finally, AI's rapid evolution often outpaces regulatory frameworks, leaving uncertainty about standards, liability, and accountability.

Emerging Trends and Future Directions

Several innovations point to the future of AI in health coaching and personalized care. Digital twins — virtual models of individual patients — are beginning to be used to test interventions before they are applied in real life, potentially reducing risks and improving outcomes. Conversational AI systems are becoming more emotionally intelligent, providing not only medical guidance but also mental and emotional wellness support.

Meanwhile, federated learning allows AI models to be trained across decentralized data sources, enhancing privacy by keeping sensitive data local while still improving accuracy. The fusion of wearables with AI, such as the Apple Watch or Oura Ring, enables real-time health monitoring and analysis, delivering insights that can support continuous care outside of clinical settings.

Key Considerations for Implementation

For AI to reach its potential in healthcare, ethical and practical considerations must guide implementation. Transparency and explainability are critical to building trust among patients and providers. Inclusivity in data sourcing will help ensure that AI recommendations are equitable and representative of diverse populations. AI should be integrated with, not replace, human professionals to ensure empathy and oversight remain central to healthcare delivery. Finally, alignment with evolving regulations and deliberate efforts to build public trust will determine whether AI's promise translates into lasting improvements in health outcomes.

Conclusion

Caregiving and personalized health coaching are often seen as separate domains, yet this chapter has shown how deeply they intersect. Both rely on continuous support, tailored information, and timely decision-making: areas where AI offers unprecedented potential. For caregivers, AI can streamline complex care coordination, reduce burnout, and provide much-needed decision support. For individuals, AI-powered health coaching extends those same principles into daily life, enabling proactive management of chronic conditions, healthier behaviors, and more personalized care pathways.

Several themes cut across both areas: the need for trustworthy and explainable AI, the importance of equitable data sourcing to avoid bias, and the opportunity to integrate human expertise with digital tools rather than replace it. These common challenges also highlight shared opportunities: developing AI systems that are interoperable across health platforms, accessible to diverse communities, and adaptable to the dynamic needs of both caregivers and patients.

Looking forward, there is ample room for further study. Research into the economic impact of AI-driven caregiving tools, long-term outcomes of AI-enabled health coaching, and the intersection of broadband equity with health access will provide a deeper understanding of AI's role in reshaping healthcare. Those interested in the most innovative developments should look to collaborations at the intersection of healthcare providers, AI startups, and academic research institutions: particularly initiatives emerging from digital health accelerators, medical AI research hubs, and partnerships between hospitals and technology companies. These frontiers are where we will see the most promising advances, not only in reducing costs and improving efficiency, but also in creating a more compassionate,

personalized, and resilient healthcare system for both caregivers and patients.

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For more information about the Coalition for Innovation, including how you can get involved, please visit coalitionforinnovation.com.

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