A Lens on Health Equity in Digital Health:

Unlocking the Innovation Opportunity

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Acknowledgements

About RockHealth.org
RockHealth.org is a non-profit that advances equity-centered innovation in digital health. We take action towards a more inclusive digital health ecosystem by championing equitable design and innovation, supporting underrepresented innovators, and fostering a community of bold leaders across the healthcare landscape. Learn more about our industry-leading convenings and equity-focused investment and design initiatives at RockHealth.org.

Letter from RockHealth.org's CEO

Over the last decade, digital health has evolved dramatically, revolutionizing how millions access and manage their health. However, healthcare innovation has primarily reached a narrow demographic—typically young, white, high-earning, urban residents. Meanwhile, this progress has not been accessible to underrepresented communities.

This disparity highlights an urgent need to ensure that digital health solutions are equitable and accessible to all, regardless of age, race, geography, or ability.

At RockHealth.org, we recognize the imperative to address these disparities head-on. Today, we are thrilled to launch our latest endeavor, *"A Lens on Health Equity in Digital Health: Unlocking the Innovation Opportunity."* This report aims to shed light on how equity-focused digital health solutions can scale effectively and reach underserved populations.

Collaborating with entrepreneurs, investors, enterprise executives, ecosystem builders, and philanthropic supporters—including an expert Advisory Committee—this body of work seeks to showcase innovative solutions that prioritize health equity and are good for business. Our goal is to amplify innovations with sound business models that bridge the gap in healthcare access and outcomes.

This report builds upon Rock Health's ongoing commitment to equity-centered initiatives. It also acknowledges the invaluable contributions of leaders throughout the innovation space who have paved the way for progress in health equity. We hope to provide actionable insights for the broader digital health community by synthesizing and expanding upon this wealth of knowledge.

As we embark on this journey, we invite you to join us in our mission to ensure that digital health innovation serves everyone, leaving no one behind. Together, we can create a future where healthcare is truly equitable and accessible to all.

Sincerely,
Katie Drasser, CEO

"Advancing the State of Health Equity Innovation in Digital Health" Advisory Committee

The "Advancing the State of Health Equity Innovation in Digital Health" Advisory Committee comprises nine leaders who play a cross-section of roles in advancing health equity in or adjacent to the digital health space.

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Resources for Continued Learning

The RockHealth.org team developed this publication after conducting extensive field research on the integral role that digital health can play in closing health disparities across the United States.

Our insights build on extensive knowledge based on countless leaders and organizations that have studied and developed seminal knowledge products that explore the intersection of health equity and digital health.

This work also draws from the deep expertise and experiences of the *"Advancing the State of Health Equity Innovation in Digital Health"* Advisory Committee and other field experts who were directly engaged through these efforts.

Learn more about the broader base of knowledge and insights that inspired and informed this work:

Organizations and Initiatives
- AMA Center for Health Equity
- CHCF Innovation Fund
- Colectivo Health
- Deloitte Health Equity Institute
- Digital Medical Society (DiMe)
- In Full Health
- Consortium for Technology & Innovation in Pediatrics (CTIP)
- United States of Care

Seminal Texts
- Advancing Health Equity: A Guide to Language, Narrative and Concepts, AMA
- Building For Everyone, Annie Jean Baptiste
- Defining Women's Health, Halle Tecco and Julia Cheek
- Focusing on Digital Health Equity, JAMA
- How Health Systems Can Help Address Language Barriers to Achieve Digital Health Equity, CHOP PolicyLab
- Health Disparities in Employer-Sponsored Insurance, Morgan Health
- The Competitive Advantage of Racial Equity, FSG
- The Equitist, Lauren Powell
- The Cliff of Good Health, Camara Jones

Introduction

Digital health is at a crossroads. In the early portion of this decade there was exponential investment growth, followed by contraction. This speaks to the commoditization of digital solutions[1] in everyday healthcare but also a gap in meeting the needs of all population groups.[2] Historically the healthcare market has failed to address the challenges faced by communities that are experiencing persistent health inequities.[3] Digital health has the potential to expand access, improve experience, and make hyper-personalized care possible. However, the data tells us that massive missed business opportunities remain.[4] There are also signals from the funding landscape around who and what is being funded[5] that place digital health on a trajectory of repeating old patterns and creating further system inequities.

With health disparities contributing to an estimated $93B in excess medical care costs, equitable solutions are an emerging priority for those responsible for payment.[6] This is seen in the behaviors of consumers paying out-of-pocket and in the investments made by government and employer-sponsored health plans. This has created unique opportunities in both fee-for-service models and emerging value-based payment models, where metrics around reach and impact on a diverse array of communities are being centered. As the business case[7] for health[8] equity[9] comes into greater focus, leaders are still learning where digital health innovations can close equity gaps for specific populations. At the same time, proof points of businesses that have stood up these new innovations are still emerging. This is in addition to both conscious and unconscious bias affecting leaders' perceptions about whether or not these solutions meet the bar for institutional investors.

Across the ecosystem, designers, solution developers, investors, healthcare executives, and intrapreneurs are faced with a choice: *do everything possible to make digital health solutions truly equitable in design and practice,* **or** *ignore the data and maintain the status quo.* At stake is the reality of leaving entire communities behind—failing to deliver on our organizational statements and commitments to equity—and also exacerbating prevailing health inequities, increasing medical care costs for all.

[1] Rock Health, 2021
[2] Rock Health, 2021
[3] Rock Health, 2021
[4] Rock Health, 2023
[5] Rock Health, 2023
[6] W.K. Kellogg Foundation, 2018
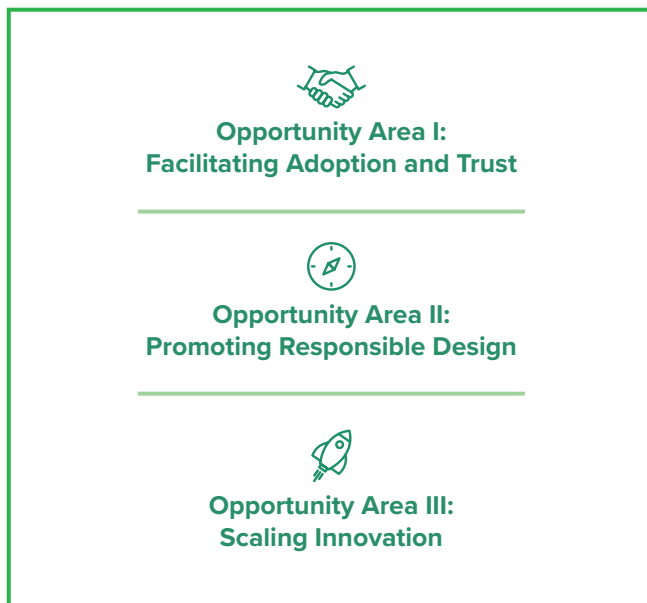[7] Deloitte, 2021
[8] McKinsey & Company, 2022
[9] Real Chemistry, 2023

Identifying Opportunities for Expanded Impact

In short, there is *not* a need for more data to prove that health equity is a worthwhile investment. However, there is a need to closely examine the existing challenges that prevent digital health innovations from equitably reaching persistently overlooked and underserved populations, and where opportunities exist to prompt meaningful impact.

The challenge now is for digital health and health equity leaders to work together to meet this moment head-on. Alternatively, if the field doesn't address these items, there is an outsized chance that health inequities will be exacerbated, continuing to adversely impact overlooked communities.

Emerging from our work, three potential opportunity areas were identified that, if prioritized and leveraged across the digital health industry, could accelerate equity-oriented digital health innovation in outsized ways.

Opportunity Area I:
Facilitating Adoption and Trust

Opportunity Area II:
Promoting Responsible Design

Opportunity Area III:
Scaling Innovation

These opportunity areas include:

+ **Opportunity Area I: Facilitating adoption and trust** among overlooked population groups

+ **Opportunity Area II: Promoting responsible design practices** that curate human-centered experiences for digital health users

+ **Opportunity Area III: Expanding growth opportunities** for digital health companies that are designed for and reaching overlooked and underserved end users

The remainder of this paper will examine each of these opportunity areas and outline ways that digital health innovators can consider them within their work. This paper will also:

+ **Amplify insights from solution developers and investors,** offering clear recommendations on approaches digital health leaders can use to become more effective.

+ **Spread awareness of emerging thinking at the intersection of digital health and health equity,** to ensure that time and resources can be devoted to scaling proven and impactful approaches.

+ **Identify potential opportunities to support and scale digital health solutions** capable of impacting communities facing persistent health inequities in the near term.

The hope is that this work will contribute to the growing knowledge base across the digital health industry committed to advancing equity-centered innovation. In the coming months, RockHealth.org will continue to convene digital health leaders to consider these questions and catalyze action.

Establishing Common Language

Throughout this report, key terms are used that were developed to orient this body of work. The intent in outlining these terms is to provide clarity and transparency on our Advisory Committee's thinking and to support broader learning among this publication's readership.

+ **Digital health innovations:** Rock Health defines digital health as solutions that sit at the intersection of healthcare and technology; and not solely in medicine, but across healthcare, including wellness and administration.

+ **Enterprise leaders:** Leaders who are working within corporations, payers, and employers.

+ **Health equity:** Health equity[10], according to physician and epidemiologist Camara Jones, is "assurance of the conditions for optimal health for all people." Achieving[11] health equity[12] "requires valuing all individuals and populations equally, recognizing and rectifying historical injustices, and providing resources according to need."[13]

+ **Investments:** Financial support and non-financial support (e.g., mentorship, strategic counsel, network access) provided to digital health innovators.

+ **Social determinants of health:** Social determinants of health[14] are the non-medical factors that influence health outcomes. They are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems. systems, development agendas, social norms, social policies and political systems.

+ **Solution developers:** Solution developers generally fall into two categories: **startup leaders** who are building products and services that can be leveraged by distinct end users, and **platform companies** that provide the underlying technology infrastructure required for all digital health companies to function.

+ **Structural vulnerability:** A term developed by Philippe Bourgois, Seth Holmes, and others to describe an individual's or a group's condition of being at risk for poor health outcomes through their interfaces with socioeconomic, political, and cultural/normative hierarchies.[15,16] Patients are structurally vulnerable when their location in society's multiple overlapping and mutually reinforcing power hierarchies, and institutional and policy-level statuses, constrain their ability to access healthcare and make healthy choices.[17]

[10] World Health Organization, 2024
[11] Robert Wood Johnson Foundation, 2024
[12] American Medical Association, 2022
[13] Medical Care, 2014
[14] World Health Organization, 2024
[15] Bourgois & Hart, 2011
[16] Holmes, 2011
[17] Bourgois, Holmes, Sue, and Quesada, 2017

Opportunity Area I: Facilitating Adoption and Trust

The common metrics around digital health solutions (e.g., money raised, satisfaction, usage, etc.) rarely provide insight into the population view of who has access and who the solution is working for.[18] Without a clear understanding of who your users are, it's nearly impossible to drive user adoption and engender trust between innovators and end users. One expert from our Advisory Committee who works with digital health innovators shared that they often have difficulty receiving input from their end-user populations due to a lack of trust.

+ With this context, it's easy to understand why digital health products that lack inclusive design face risks of not gaining marketing traction and underperforming with a self-limited trajectory. Consider the example of wearable technology. Wearable adoption is growing overall. While these devices hold so much promise to helping expanded communities of users (e.g., older adults with mobility challenges and risks, Black "sandwich generation"[19] caregivers, etc.), they aren't designed with these individuals in mind. As a result, we see underserved groups owning these technologies at higher rates, but reporting lower rates of satisfaction.[20]

Adoption exists on a continuum from having confidence that it is available for your use to actually being able to use it, and whether you might use it again for that same need.

AVAILABILITY → **ENGAGEMENT** → **ADOPTION** → **OUTCOMES**
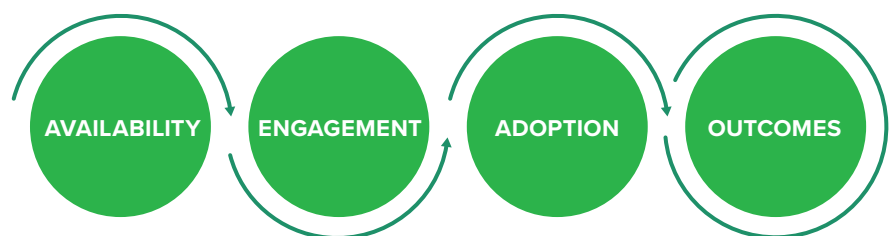
Trust is an enabling variable across these steps

[18] Rock Health, 2023
[19] Pew Research Center, 2022
[20] Rock Health, 2022

Opportunity Area I: Facilitating Adoption and Trust

Running underneath all phases is the essential element of any relationship: trust. Trust spans the end user's journey with each digital health innovation, including how they first learn about digital health solutions, how they continuously engage with digital health solutions in their daily lives, the degree to which their adoption of the innovation shifts their behaviors and choices, and ultimately, the ability for digital health solutions to influence health outcomes. Trust must be cultivated across each of these steps. Doing so enables the end user to move from a passive user of digital health technologies to a proactive healthcare consumer.

To prioritize this approach in your own work, you might ask: "What does trust mean to the population that I am trying to serve? What are the *specific* outcomes that this population cares about?" It's important to ask how and where end users learn of a new digital solution. Are those channels trustworthy?

In an effort to address these questions, experts noted that digital health innovators can take the following steps to both reach and engender trust among end users from underserved populations.

+ **Design for the end user.** Allow for community co-creation in the iterative design process to increase engagement with digital health solutions. Beyond showing respect for community members, this approach makes it easier to engage hard-to-reach populations that may be distrustful of existing healthcare systems. Experts noted that community co-design and definition setting increases trust, leading to increased engagement from individuals that innovators seek to serve. This kind of collaboration in the design process can also lead to more sustainable impact. Solutions are not "one size fits all," one leader stressed, and should be designed "by communities, for communities."

+ **Center user input to ensure solutions are accessible and actually useful.** Whether leveraging a *participatory* design approach or engaging in *co-design*, it is critical to center around the needs that the intended end users have identified and understand how the innovation may fit within their daily lives. Ideally, equity-focused solutions increase the efficiency of healthcare delivery. By integrating input from workforce providers and patients, innovators can better understand where gaps in care or limitations actually sit. Experts noted that this leads to user-centric solutions that address real healthcare challenges.

+ **Create agile approaches to understand outcomes.** Understanding the full impact that digital health innovations have on target populations does not happen overnight. Knowing how innovations influence health outcomes and shift user behaviors requires patience, flexibility, and deep curiosity. This is particularly important when analyzing outcomes in underserved populations, where countless variables may impact outcome or usage metrics. Experts named the importance of creating agile approaches to consider how innovations meet underserved populations' needs. This may include creating extended timelines to measure adoption by collecting, assessing, and interpreting user and outcome data.

Opportunity Area II: Promoting Responsible Design

The space between designing for health equity and good business is narrowing as solution developers increasingly look for ways to embed inclusivity across the design process and innovate around how populations experience these solutions. From design process to product, leaders are approaching digital health with a health equity lens across the spectrum of early stage to enterprise. As healthcare moves further in the direction of digitally-enabled tools and services, there is the potential to lose the human element of healthcare. "Equity work requires nuance, and therefore, so does digital health," one leader shared.

Field Observations: Selecting a Maternal Health Digital Solution

A large payer with 45+ million lives under management was looking for a commercial maternal health product. The leading solution identified in the traditional Request for Information (RFI) process was not representative of the problems in the maternal health space that the health plan was trying to solve. For example, how would they address the rural population, the mortality rate of Black moms, and the institutional and lived experiences from pre-delivery to one year post-delivery? The technology stakeholder in the payer organization leveraged a relationship they had with a VC firm with a thesis around underrepresented populations to identify two additional companies, one of which was ultimately selected and scaled successfully across their population. A key element in contracting with this company was the payer's existing playbook that laid out a pathway based on risk level by designing responsibly to meet the needs of increasingly savvy purchasers. For a company that was demonstrating outcomes and process measures in key populations, there was a pathway to manage risk. The company had a clear perspective on how it would move from pilot to scale, and the corresponding level of effort requirement from the health plan.

Opportunity Area II: Promoting Responsible Design

Building an ecosystem of solutions requires continuous evolution to address the nuanced, diverse set of lived experiences across a population. Organizations tend to apply the definition of "health equity" to a wide and varied range of populations. In an effort to promote responsible design, our experts noted three starting points for digital health innovators to advance their work.

+ **Be mindful of digital fluency and tech barriers to avoid deepening existing access disparities.** Solutions developers should seek to develop innovations that are positioned to have broad and deep impact, grounded in the curb-cut effect.[21] Experts emphasized that by acknowledging and addressing technology gaps, innovators can ensure that their solutions reach the underserved communities they are trying to reach. That said, leaders also stressed that innovators must not assume the digital fluency levels of particular communities. Making assumptions about if, when, and how communities adopt new digital products and services can create deeper inequities.

+ **Leverage digital health innovations to address inequities in both traditional healthcare and social determinants of health.** Experts shared that these innovations can lead to long-term sustainable impact, given that they tackle the root causes of disparities. An emerging area for innovation entails addressing the holistic needs of end users from underserved and overlooked populations that go on to influence health outcomes or exacerbate health inequities. Such solutions could support transportation access to provider appointments, connect patients to nutritional programs, or support individuals navigating a complex healthcare environment.

+ **"Do no harm."** Consider how users will interact with the technology and the safety profile of the technology. It is important to be very specific—name the populations that are included in the solution design or purchasing rationale and as you look under the hood of solutions, ask whether the data is representative and whether the solution scales across populations. Consider domains that encompass the phenotype of the user as well as the physical and technical environments that are intrinsic to the user's lived experience.

[21]SSIR, 2017

Opportunity Area III: Scaling Innovation

Digital health solutions can contribute to health equity in a number of ways. There are some solutions that target health equity directly, while others engage with populations in ways that will contribute to health equity at a higher level. Investors who support these kinds of health equity solutions can drive positive change in healthcare, accelerate groundbreaking innovations, and contribute to significantly better health outcomes for all populations.[22] How investors actively translate these intentions into powerful and wide-reaching investment mandates is not commonly understood.

Experts shared their insights and considerations to spur investments in health equity solutions, which fit into two broad categories:

1. **Pre-investment identification and framing:** how investors initially identify and frame potential health equity investments.

2. **Post-investment assessment and support:** how investors continuously assess and support health equity investments once they have entered their portfolios.

22 McKinsey & Company, 2022

Opportunity Area III: Scaling Innovation

Pre-Investment Identification and Framing Insights

One common challenge that investors shared, also validated through previous work[23] with health equity innovators, is that there is still limited agreement on how health equity innovations are positioned and framed in the digital health sector. Investors noted that using new frames to enter investing conversations may support clearer, perhaps even transformative, discussions about these innovations and the opportunities they facilitate. To support these shifts, investors raised the following pre-investment recommendations for field consideration:

+ **Invest in health equity as a profitable business decision.** Digital health solutions that cater to underserved populations have tremendous potential to access previously untapped markets while reaching populations that have been underserved. Investing in health equity not only leads to improved health outcomes as a result of reaching these populations, but also positively impacts the economy.[24] Investors currently integrate environmental, social, and governance (ESG) criteria into investment decision making, and health equity has the potential for being embedded within that frame.[25] Furthermore, existing frames around health equity solutions as "philanthropic" or "social impact" plays also limit robust discussion about the innovative economic, operating, and engagement models that these businesses are implementing.

+ **Clarify the distinct market opportunities that exist for health equity innovation.** Far too often, a blanket frame is applied to the myriad of innovations that serve overlooked and underserved populations. This indiscriminate approach hinders robust discussions about the unique avenues for innovations to reach increasingly diverse populations. For example, this existing framing leads to a conflation of the Medicaid market with communities of color at large, rather than seeing CMS engagement as a growth path for discrete clinical issues. Crisper analyses of specific consumer groups, clinical issues, and emergent engagement approaches can highlight the unique ways that innovations may be designed and scaled to reach structurally vulnerable populations. Though currently underfunded due to prevailing, yet shifting, assumptions[26] that these solutions produce lower margins, emerging Medicaid innovations[27] point toward profitable opportunities in this large, untapped market.

23 Rock Health, 2022
24 McKinsey & Company, 2022
25 Deloitte, 2022
26 Axios, 2022
27 Rock Health, 2023

Opportunity Area III: Scaling Innovation

Questions to support investors as they explore health equity endeavors

+ **Where are there clear, sizable opportunities for digital health to reach underserved populations?** What additional insights are needed to "make the case" for these issue areas? If the timing is not right for this product or service today, under what conditions would the timing be right in 3-5 years?

+ **What are the structural (regulation, market insights) and relational (network connections, field exposure) resources that health equity innovators need to succeed in the current digital health landscape?** Where are these resources being deployed effectively? Where is investor support lagging behind?

Post-Investment Assessment and Support Insights

Once an investor chooses to work with an organization, there is ongoing assessment and support required beyond the investment itself. What makes for a successful partnership between an investor and a health equity investment? Experts proposed the following recommendations to the field:

+ **Seek alignment on mission and values.** Cultural gaps persist between traditional venture investors and companies that intend to serve diverse and underserved populations. The reasons for this may lie in growth timelines, profitability expectations, and a general desire to adapt to the rapid pace of innovation of the tech ecosystem. Investors should have transparent discussions with their portfolio companies on how they will manage the oftentimes competing interests of *health outcomes* and *growth/profitability*.

Opportunity Area III: Scaling Innovation

+ **Establish shared goals and incentives.** Creating shared language to discuss progress on health equity will keep a partnership strong post-investment. This involves clarifying and aligning how both parties will define and measure value, including key metrics. To this end, it is helpful for investors and entrepreneurs to consider how they will *collaboratively* identify growth and value metrics, the timeline that those metrics will be achieved, and mitigation approaches for goals that may go askew. Per one expert, investors should encourage the companies they invest in to measure clinical quality, outcomes, and metrics granularly, emphasizing equity between different populations who may use their products or services.

+ **Bring a deep learning orientation to the work.** When applied in practice, this requires both investors and portfolio companies to identify areas of learning and experimentation that will support an organization's growth and impact. From the experience of one expert, this stance sees all stakeholders as holders of knowledge and expertise given their unique roles and/or vantage points. It uses data and experiences from various information-gathering approaches, including evaluation, to inform strategic decision-making. For example, innovators with lived experience bring a competitive edge to their organizations by reflecting the demographics of their end-users.

> ### Questions for investors as they assess the potential for scale and impact of health equity investments
>
> + **Where are there opportunities in your investment process to discuss and align on mission and performance indicators?** How will you address moments where these points may be in conflict with one another?
>
> + **How are you creating room in your investment relationships to facilitate ongoing learning?** How can these learnings support and accelerate broader understanding of the corresponding market(s) and clinical area(s)?

Conclusion

The opportunity to advance equity across digital health is broad and constantly evolving. The goal of this work is to build upon the countless efforts driven by leaders across the industry, while presenting new insights that can be used to accelerate other impactful initiatives.

As RockHealth.org advances this work, potential collaborators and thought partners who can bring additional insight and expertise will be continuously engaged—based on their unique interests and vantage points—to expand how health equity solutions are embedded and elevated across the industry.

Innovators and organizations are specifically encouraged to consider the following exploratory questions:

+ **What role can digital health play in addressing health inequities and reaching overlooked and underserved communities?** What is the market opportunity, and what is the long-term opportunity cost and associated risks if digital health does not play a significant role here?

+ **What is the current state of play for health equity-focused digital health innovations (e.g., consumer adoption, investment trends, design processes etc.)?** Where are there opportunities and challenges?

+ **Where are companies propelling novel products and services** designed for/with communities in ways that center equity?

+ **What communities are positioned as potential "early adopters" for solutions at the intersection of digital health and health equity?** What communities are at risk of being left behind?

To learn more about this exciting effort or explore potential collaboration opportunities, please reach out to the RockHealth.org team at hello@rockhealth.org.

Community Spotlights

There are a number of communities who have been engaging with digital health products at an increasing rate. However, solutions are not actively developed for these communities' unique needs. The specific communities included here are: older adults, rural populations, Black consumers, and Latine consumers.

Each of the following Community Spotlights contain information about how the population is currently interacting with digital health products, action steps that leaders can take to impactfully serve these populations, and examples of organizations that are already reaching these populations.

These spotlights are illustrative and are intended to support communities who are in a position to benefit from digital health innovation in the near term.

+ **Older Adults**

+ **Rural Populations**

+ **Black American Digital Health Consumers**

+ **Latine Digital Health Consumers**

Within each Community Spotlight, there are action steps that are connected to each Opportunity Area mentioned in the report. You will know which Opportunity Area is being referenced based on the associated icon:

Opportunity Area I:
Facilitating Adoption and Trust

Opportunity Area II:
Promoting Responsible Design

Opportunity Area III:
Scaling Innovation

COMMUNITY SPOTLIGHT

Older Adults

The opportunity for digital health innovations to reach older adults is growing at an increasing rate. While the COVID-19 pandemic introduced many older adults to virtual care, older adults' usage rates remain steady four years after COVID-19's onset.[1,2] For many older adults, digital health is here to stay—and considering that Americans aged 65+ make up 17% of the population, but drive more than 50% of U.S. healthcare spend, digital innovators should keep this user community top-of-mind.[3,4]

Designing health technology for older adults entails looking past generational stereotypes and actually getting into the data of how Americans live and access care as they age. The diversity of older Americans is increasing, and older adults' care realities differ drastically by factors like race, ethnicity, income bracket, and zip code.[5] New ideas will come from observing and designing for older adults' care experiences, and giving them a seat at the table to provide feedback and co-iterate on improvements.

DIGITAL HEALTH ADOPTION SNAPSHOT

According to Rock Health's 2023 Digital Health Consumer Adoption Survey, of respondents aged 65+:[6]

- 70% have received virtual care at some point
- 27% own or have owned a wearable device
- 67% have searched for healthcare information online
- 39% have searched for a care provider online

1 National Poll on Healthy Aging, 2020
2 Fierce Healthcare, 2023
3 Peterson-KFF, 2024
4 United States Census Bureau, 2023
5 Stanford Medicine, 2020
6 Analytical cohort selected based on "65 to 75 years" or "Age 75 or older" response to Survey question, "What is your age?"

COMMUNITY SPOTLIGHT: Older Adults

TAKING ACTION

Design for the care journey beyond 65. "Older adults" tends to refer to anyone aged 65 or older, but in this category, people's ages can differ by more than 30 years. Ability, mobility, socioeconomic status, and personal needs all change drastically within that time frame. Designers must consider how to serve older adults on a spectrum, with built-in flexibilities to account for shifts like vision, memory, and mobility changes. Go-to-market and consumer support strategies should also account for different consumer personas within the 65+ cohort.

Assured Allies works with health plans to create personalized healthy aging plans for senior members. By comparing each member to population data sets, Assured Allies flags individual risks along the aging trajectory and implements evidence-based interventions to mitigate them.

Acknowledge cost as a reality of care. Today, older Americans have less income and carry more debt than ever before, creating risky situations of financial vulnerability.[7] Nearly 1 in 10 older adults has medical debt, and that number rises to more than 1 in 5 for older adults with annual incomes under $25,000.[8] Innovators need to prepare systems and processes that help older adults manage the costs associated with health technology or digitally-enabled care tools, and should consider how cost impacts routines like prescription adherence. Cost should also be recognized as a barrier to technology adoption, not folded into a "non-adopter" storyline.

DUOS, a care navigation startup for older adults, helps older adults apply for discount and savings programs for medical and household bills if expenses are impeding their ability to afford care.

7 U.S. Government Accountability Office, 2021
8 National Council on Aging, 2020

COMMUNITY SPOTLIGHT: Older Adults

Understand the complexities of the home. Most older adults want to age in place, but doing so isn't straightforward.[9] For many older adults, their home is their most valuable asset,[10] and home modifications or in-home care can be prohibitively expensive. Aging-in-place questions are even trickier for the growing number of older adults who rent, experience homelessness, or live far away from medical infrastructure.[11] There's a market need and opportunity to help older adults plan for home modifications and set up their spaces for tech-enabled care.

Rosarium Health is a platform that connects older adults and individuals with disabilities to occupational therapists and home contractors for accessible home assessments and modifications.[12]

Embrace on-ramps to digital. Older adults are open to digital innovation, but that's not a green light for digital-only engagement. Phone and mail communication remain important to older adults, and multichannel strategies are critical for marketing, customer support, and patient engagement. Every virtual-first approach should have an easy-to-find, low-tech touchpoint for maximum senior comfort.

Best Buy introduced Ask Lively, an always-available phone service that connects older adults who call in to live Care Advisors to navigate technology challenges. Care Advisors help older adults send texts and save contacts on their Best Buy phones and home devices, in addition to helping with everyday tasks like providing weather updates or scheduling rides.

9 Michigan Center on the Demography of Aging, 2021
10 AAG, 2021
11 Joint Center for Housing Studies, 2022
12 Rosarium Health is a Rock Health Capital portfolio company

COMMUNITY SPOTLIGHT: Older Adults

Support caregivers, and older adults who live without them.
Many older adults receive help from family, friends, neighbors, and paid caregivers to manage their medical care, households, or just to help with daily tasks. It's important to consider the role of the caregiver, while also investing in opportunities to support older adults who don't have consistent caregiving support (perhaps their children live far away) or any support at all. As many as half of older adults who need daily support don't get that assistance[13], and tech-enabled programs are well-positioned to support gaps in care.

Avanlee Care is a senior care management app for caregivers who support aging relatives from afar. In 2022, Avanlee Care partnered with Walmart to enable caregivers to remotely coordinate grocery ordering and delivery via the Avanlee app.

[13] Population Reference Bureau, 2022

COMMUNITY SPOTLIGHT

Rural Populations

Rural communities demonstrate a strong readiness for digital care innovation. Though rural Americans differ from urban and suburban counterparts by average age, income, and access to broadband connectivity, live video virtual care use among rural survey respondents grew 16 percentage points between 2020 and 2023 according to Rock Health Consumer Adoption data.

Engaging with rural communities requires a deep sense of place; digital health stakeholders must first understand the norms, preferences, and needs of rural communities they hope to serve. Rather than implementing new offerings as substitutes to existing care models, innovators should view new launches as extensions of existing community care infrastructure.

DIGITAL HEALTH ADOPTION SNAPSHOT

According to Rock Health's 2023 Digital Health Consumer Adoption Survey, of rural respondents:[1]

- 71% have received virtual care at some point
- 34% own or have owned a wearable device
- 70% have searched for healthcare information online
- 49% have searched for a care provider online

[1] Analytical cohort selected based on "Rural" response to Survey question, "Which of the following best describes the area you live in?"

COMMUNITY SPOTLIGHT: Rural Populations

TAKING ACTION

Respect the community's existing health culture and infrastructure. In many rural communities, there's an established pace of life and a way of doing things. New healthcare stakeholders should plan to support existing care frameworks, rather than trying to "disrupt" the status quo. Collaborating with and supporting existing community care professionals like community health workers, pharmacists, and doulas can help build trust and tap into community knowledge. Once operating, it's important to maintain consistent program evaluation standards that prioritize community feedback.

Main Street Health partners with existing providers and community health centers in rural communities to provide value-based primary care. Main Street embeds a local Health Navigator to build trusted relationships in each rural community they work in.

Extend the specialist infrastructure. Though local health support cultures may be strong, many rural Americans lack access to specialized care providers for certain cancers or rare conditions—but digital solutions can help to close those gaps. Digital solutions can connect on-the-ground healthcare teams with academic medical centers, large hospitals, and urban healthcare hubs for expert consultations and collaboration.[2] Innovative virtual care solutions like specialist e-consults and virtual tumor boards can supercharge the work of local clinicians.

Hippo Technologies combines a voice-activated wearable headset with virtual care consultations, enabling rural clinicians to consult with remote specialists during appointments or procedures, and coordinate care with a patient's far-away specialist clinician if needed.

2 Pew Research Center, 2018

COMMUNITY SPOTLIGHT: Rural Populations

Embrace multiple approaches to connectivity. While rural broadband and cell networks have improved in the wake of the COVID-19 pandemic, the reality is that rural internet connectivity is still less reliable than in urban areas of the U.S., and one in four rural Americans report lack of internet access as a major issue in their community.[3,4] Digital innovators coming into rural communities can't have a virtual-only mindset. Care models must combine digital, in-home, and community sites of care, and digital solutions need to have in-person partners and champions to help patients navigate periodic internet challenges.

Homeward provides virtual and in-person value-based care to rural communities. Homeward healthcare providers and team members see patients in their homes, in neighborhood Homeward clinics, and via phone and video appointments.

Consider the relationships between community, industry, and environment. It is common for rural communities to have one or two dominant industries such as hospitality, manufacturing, or lumber. Many residents may work for the same employer for long periods of their careers, which makes employer-sponsored healthcare investments and innovations especially important. Top industries impact the environment that individuals live in and the occupational risks they're exposed to at work. Digital health startups working with employers in rural areas must consider how they meet the personal, environmental, and occupational realities of the community via their offerings.

Sword Health provides digital care programs for musculoskeletal (MSK) physical therapy and pain management. In 2023, Sword Health published results from a single-arm trial demonstrating that their program was effective in improving clinical endpoints such as pain, mental health, and work productivity in both rural and urban program employees. Rural trial enrollees showed higher engagement with educational content and higher rates of program completion than urban enrollees.[5]

3 The Pew Charitable Trusts, 2022
4 Pew Research Center, 2018
5 JMIR mHealth and uHealth, 2023

Black American Digital Health Consumers

Black Americans lead the way as digital health adopters; Rock Health Consumer Adoption Survey data indicates that Black respondents report high rates of virtual care adoption and are more likely to own wearables compared to non-Black communities in the United States.[1] With an estimated $1.6T in buying power and 19% higher spending on hospital care than the general population, Black Americans are a key consumer group in healthcare.[2,3] Virtual care solutions are especially well positioned to deliver culturally-concordant care and provide access to high-quality care for Black Americans—helping to address historic (and still present) gaps within the U.S. healthcare system.

For digital health designers and innovators, centering the lived experience of Black communities in design is key to continued engagement and improved outcomes. Despite high levels of adoption, Black consumers also have historically reported high levels of dissatisfaction with their experiences of digital solutions.[4] Understanding the needs and preferences of Black consumers is key to unlocking opportunities to deliver value along the continuum of health and wellbeing.

DIGITAL HEALTH ADOPTION SNAPSHOT

According to Rock Health's 2023 Digital Health Consumer Adoption Survey, of Black respondents:[5]

- 78% have received virtual care at some point
- 49% own or have owned a wearable device
- 73% have searched for healthcare information online
- 65% have searched for a care provider online

TAKING ACTION

> Black Americans are leading the way as digital health adopters and are 1.2 times more likely than non-Black respondents to own a wearable.[1]

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1 After adjusting for covariates (age, gender identity, transgender identity, household income, health insurance coverage, ethnicity (Hispanic/Latina/o/x)), the odds of wearable ownership was 1.2 times as great for Black/African-American respondents compared to non-Black/African-American respondents. This effect was significant (p = .033). Source: Rock Health 2023 Digital Health Consumer Adoption Survey

2 Nielsen, 2024

3 JAMA, 2021

4 Source: Rock Health 2021 Digital Health Consumer Adoption Survey

5 Analytical cohort selected based on "Black or African-American" response to Survey question, "Please specify the races you identify with. Select all that apply."

COMMUNITY SPOTLIGHT: Black American Digital Health Consumers

Prioritize Black representation, starting with your data. Relative to their makeup of the U.S. population, Black Americans are underrepresented in the research, design, and development processes for new (and old) drugs, medical devices, and even consumer tech.[6,7] Ensuring that Black communities are centered in clinical research and design helps not only to improve the efficacy of these assets, but increases the chances of building long-term customer loyalty. Make sure representation starts at your most basic research levels. This is especially important as more digital devices incorporate artificial intelligence algorithms, which can encode biases based on underrepresentation in training data.

Acclinate connects pharma companies and healthcare researchers with communities of color to improve representation in clinical research. Acclinate's educational community, NOWINCLUDED, provides Black consumers who are interested in clinical trials with educational content, in-person events, and online peer communities for specific health conditions.

ACCLINATE

Build trust as the foundation of your go-to-market strategy. Black Americans are less likely to trust the health system to do what is right for them and their communities.[8] Digital relationships that center trust-building as part of their product design and go-to-market strategies have an opportunity to connect with Black users and build long-term loyalty. Whether partnering with anchor groups or engaging Black innovators who share lived experiences in common with their end users, there are a multitude of approaches to building effective solutions and consumer trust.

Blackfullness is a mental health and mindfulness app made by and for Black people. Blackfullness provides culturally relevant meditation and breathing exercises as well as mood tracking and journaling tools.

black full ness

6 Pew Research Center, 2024
7 JAMA Network Open, 2021
8 KFF/The Undefeated Survey on Race and Health, 2020

COMMUNITY SPOTLIGHT: Black American Digital Health Consumers

Champion providers from the community. Many Black consumers are looking for healthcare solutions that offer the option to connect them to providers who look like them and understand their lived experiences. Nearly one-third of Black Americans prefer to receive care from a Black provider, and seeing a provider of the same race can improve patient outcomes and satisfaction, enhance communication and increase adoption of preventative care.[9,10,11,12] For digital health teams that employ providers, prioritizing hiring and retaining Black caregivers is an investment in your business.

Mae provides culturally responsive pregnancy and postpartum support to expectant mothers, with an early focus on Black birthing people via weekly health tracking, educational resources, and connections to culturally congruent birth workers, doulas, care coordinators and other health experts. Mae's solution has 60% reach across all of its health plan partners and 90% consumer engagement.[13]

Tailor to Black experiences that intersect with priority health innovation areas. Black Americans' health needs and experiences vary across gender, ability, age, and other axes of identity. For example, Black elders, Black trans individuals, and Black women have intersectional needs that are deserving of specific care products, expert care providers, and extended care offerings.

Therify is a personalized provider matching application that leverages a multi-dimensional approach to connect employees with in-network mental health providers and content. With this approach, 94% of users report a strong fit with the initial provider match, in contrast to one-dimensional matching which is associated with a 67% fit.[14]

[9] AAMC, 2023
[10] Pew Research Center, 2023
[11] JAMA Network Open, 2023
[12] KFF/Survey on Racism, Discrimination, and Health, 2023
[13] Reach and engagement data provided by Mae.
[14] Provider fit data provided by Therify.

Latine Digital Health Consumers[1]

Latines are the fastest-growing ethnic or racial demographic group in the U.S. and wield over $3.2T in purchasing power. If counted as its own GDP, the U.S. Latine economy would rank as the fifth largest in the world—larger than that of the United Kingdom.[2] Latine culture is hugely influential to the American social fabric, and Latines contribute significantly to the healthcare ecosystem as patients, clinicians, and consumers.

Despite these realities, Latines continue to be underserved by the U.S. healthcare system. Not only do they experience significant access barriers to care, but they also often report that the systems aren't designed to support their full selves in language, identity, or culture.[3] Centering Latine experiences and identities in the development of digital tools and programs can unlock massive opportunity—but requires an intentional process of considering actual Latine experiences.

DIGITAL HEALTH ADOPTION SNAPSHOT

According to Rock Health's 2023 Digital Health Consumer Adoption Survey, of Latine respondents:[4]

- 80% have received virtual care at some point
- 58% own or have owned a wearable device
- 77% have searched for healthcare information online
- 72% have searched for a care provider online

1 In 2023, RockHealth.org partnered with the California Health Care Foundation Innovation Fund and Colectivo Health to explore the opportunity that digital health innovation could play to reach and improve health outcomes for Latine communities across the United States.
2 Official LDC U.S. Latino GDP Report, 2023
3 Pew Research Center, 2023
4 Analytical cohort selected based on "Yes" response to Survey question, "Do you identify as Hispanic or Latino/a/x?"

COMMUNITY SPOTLIGHT: Latine Digital Health Consumers

TAKING ACTION

Recognize diversity within the Latine community. "Latines" are often referred to as one population, but the term encompasses people from over 29 countries and territories in North America, Central America, South America, and the Caribbean.[5] Nationality also intersects with factors like language (e.g., Spanish, Quechua, Portuguese) and race, with many Latines identifying as multi-racial. Individuals are looking for care experiences that reflect their individual and cultural nuances, even within the Latine community.[6]

Sanarai provides virtual mental health support to individuals and couples seeking Spanish-speaking clinicians. Users can view therapists by country of origin to select a provider that best aligns with their preferences and needs.

Invest in supporting the Latine workforce. Latines make up 19% of today's U.S. workforce and are projected to account for an astounding 78% of net new workers between 2020-2023.[7,8] However, most employee healthcare solutions aren't designed for Latine employees, especially those who prefer to receive their healthcare in Spanish or would like to be seen by a culturally competent care provider. There's an opportunity for employers and startups to differentiate in-market (and attract or retain employees) by addressing Latine preferences.

MiSalud works with employers to provide Latine employees with bilingual virtual care. In addition to physical and mental health care, MiSalud offers onsite health screenings, proactive care engagement, and an employee wellness program.

[5] Britannica, 2017
[6] Pew Research Center, 2023
[7] Bureau of Labor Statistics, 2023
[8] U.S. Department of Labor, 2021

COMMUNITY SPOTLIGHT: Latine Digital Health Consumers

Design for mobile experiences. Latines adopt digital health at high rates, with 80% reporting prior use of virtual care and 68% tracking at least one health metric digitally.[9] Specifically, the Latine community leads the way in mobile adoption, and some individuals rely on mobile devices for digital experiences, healthcare, or otherwise. Approximately one in four Latines report using a smartphone as their sole method of connecting to the internet.[10] Mobile-first needs to be a consideration for digital product development, and designers can lean into existing mobile routines and preferred channels like WhatsApp, which are central to many Latine communities and relationships.[11]

VeMiDoc connects patients with bilingual physicians via a mobile app to support preventative care engagement. The recently-launched VeMiDoc mobile app provides appointment scheduling and virtual care options designed to serve the Latine population in El Paso, Texas.

Support family-focused approaches to health. Familismo refers to dedication to and close relationships with biological or chosen family, and is an important cultural value in many Latine communities. In healthcare contexts, familismo draws attention to the importance of recognizing caregiver relationships, acknowledging intergenerational living, or accounting for families that share medical decision-making. Designing with familismo in mind means accounting for the full breadth of potential stakeholders that could be included in a patient's care journey.

Zócalo Health offers comprehensive virtual care designed for Latine individuals and families. Zócalo's family membership offers 20 doctor visits per year for an entire household, including primary care visits, wellness checkups, and access to a team of bilingual care providers.

9 Pew Research Center, 2021
10 Pew Research Center, 2021
11 Pew Research Center, 2018

COMMUNITY SPOTLIGHT: Latine Digital Health Consumers

Understand personal contexts and preferences for discussing health. Personal, familial, and cultural traditions make some Latine patients more comfortable communicating about their health, symptoms, and needs using spiritual, emotional, or otherwise holistic terms—instead of medical language. It's important to build care teams with patient advocates, care navigators, and doulas that understand relevant cultural contexts of illness and can be trusted supports for patients.

Patient Orator is a patient-focused digital diary app that empowers patients to share health experiences in their own words via text and voice-based note taking. The app also offers medication reminders and educational content.

Appendix: Methodology

From January through September 2023, RockHealth.org engaged an intentionally diverse group of experts—including a core group of nine leaders who represent a cross-section of digital health (and adjacent) actors—to explore the state of health equity innovation in digital health and its potential for outsized impact in the years ahead. These experts elevated insights grounded in their unique lived experiences, perspectives, and areas of expertise. They are all meaningful contributors to Rock Health's community and actively lead solutions, strategies, and approaches to scale health equity innovations across the digital health landscape. These experts shared their questions and insights for the field, generating new knowledge.

RockHealth.org also identified communities engaging with digital products at increasing rates during the same period. Yet, solutions weren't readily developed for their unique needs: older adults, rural populations, Black consumers, and Latine consumers.

To do this, Rock Health Digital Health Consumer Adoption[28] data was gathered and assessed. Each year since 2015, Rock Health has surveyed a U.S. Census-matched sample of adult consumers in order to benchmark behaviors and attitudes toward digital health and virtual care. Over the last four years (2020-2023), approximately 8,000 U.S. adults were surveyed each year, with 2023's cohort totaling 8,014 respondents. The 2023 Survey was administered from October 12 to November 30, 2023. Respondents used their personal desktop, laptop, smartphone, or tablet to complete the survey in English.

Insights from this consumer adoption data, as well as from leaders who are actively deploying strategies and resources to meet the needs of the identified populations, have been included in the *Community Spotlights* section of this report.

28   Rock Health, 2024

Appendix: Methodology

The "Advancing the State of Health Equity Innovation in Digital Health" Advisory Committee comprises nine leaders who play a cross-section of roles in advancing health equity in or adjacent to the digital health space.

+ **Entrepreneur:**
  - *Rajaie Batniji, MD PhD,* Co-Founder and CEO of Waymark

+ **Investors:**
  - *Meera Mani, MD PhD,* Partner at Town Hall Ventures
  - *Ulili Onovakpuri, MBA,* Managing Partner at Kapor Capital
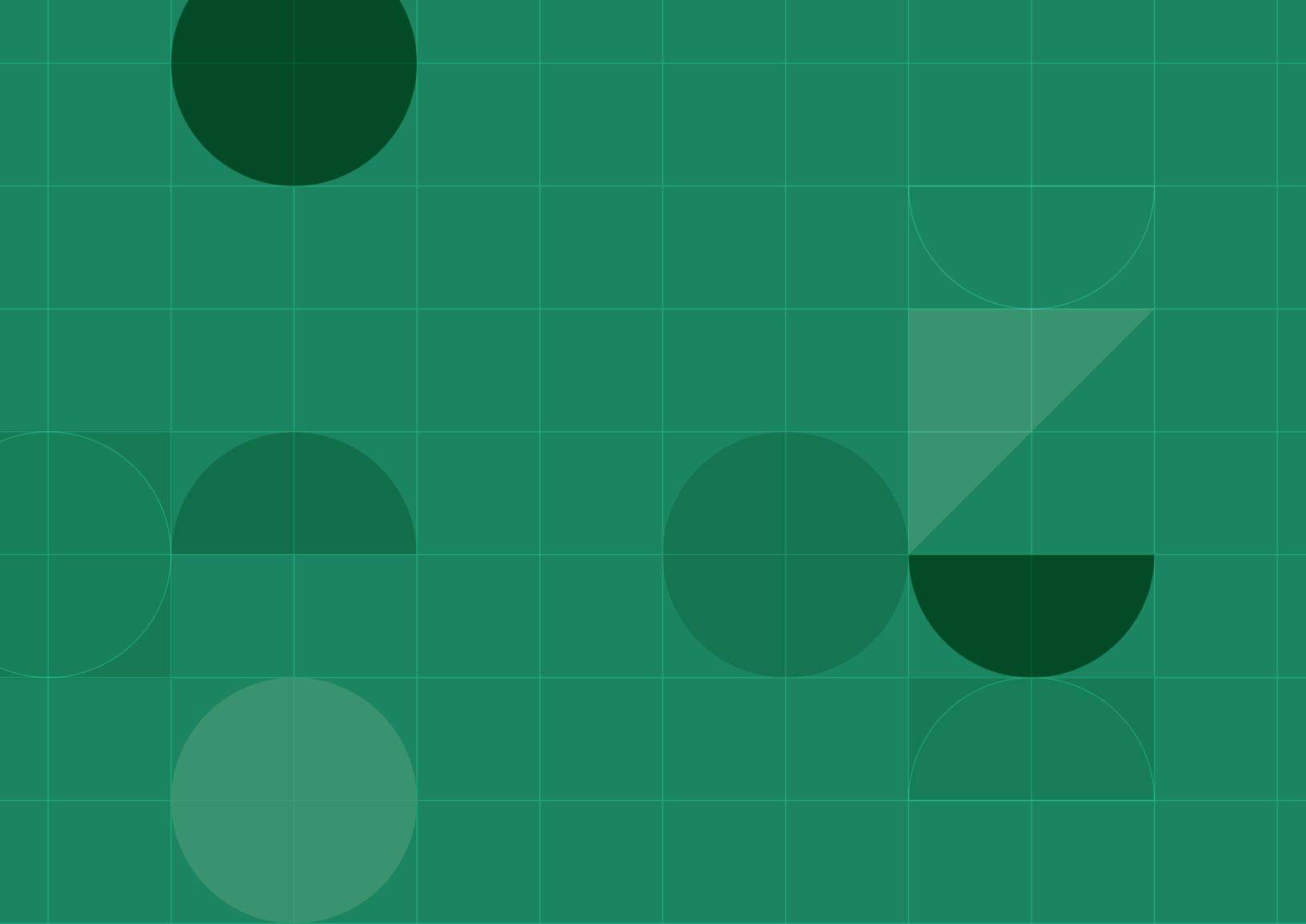
+ **Enterprise Leads:**
  - *Megan Jones Bell, PsyD,* Director, Consumer and Mental Health at Google
  - *Kameron Matthews, MD,* Chief Medical Officer at Cityblock Health
  - *Shantanu Nundy, MD MBA,* Chief Medical Officer at Accolade
  - *Deepti Randhava, MSW,* SVP of Enterprise Whole Person Health Technology Strategy at Elevance Health
  - *Nilay Shah, PhD,* Managing Director, Health Analytics and Innovation at Delta Air Lines

+ **Knowledge Developer:**
  - *Shalini Agrawal,* Founder of Public Design for Equity

This project builds on the work of RockHealth.org's *Equitable Investments* and *Responsible Design* initiatives, which jointly seek to spur innovations developed by underrepresented founders and grounded in equitable design principles. It also leverages ecosystem relationships stewarded by RockHealth.org to spur innovation in digital health products, services, and spaces that are designed for and to reach populations that face systemic inequities.