minuteful kidney | by Healthy.io

Advancing Health Equity

How Health Plans Can Advance Health Equity with Innovative Technology: Lessons from the Field

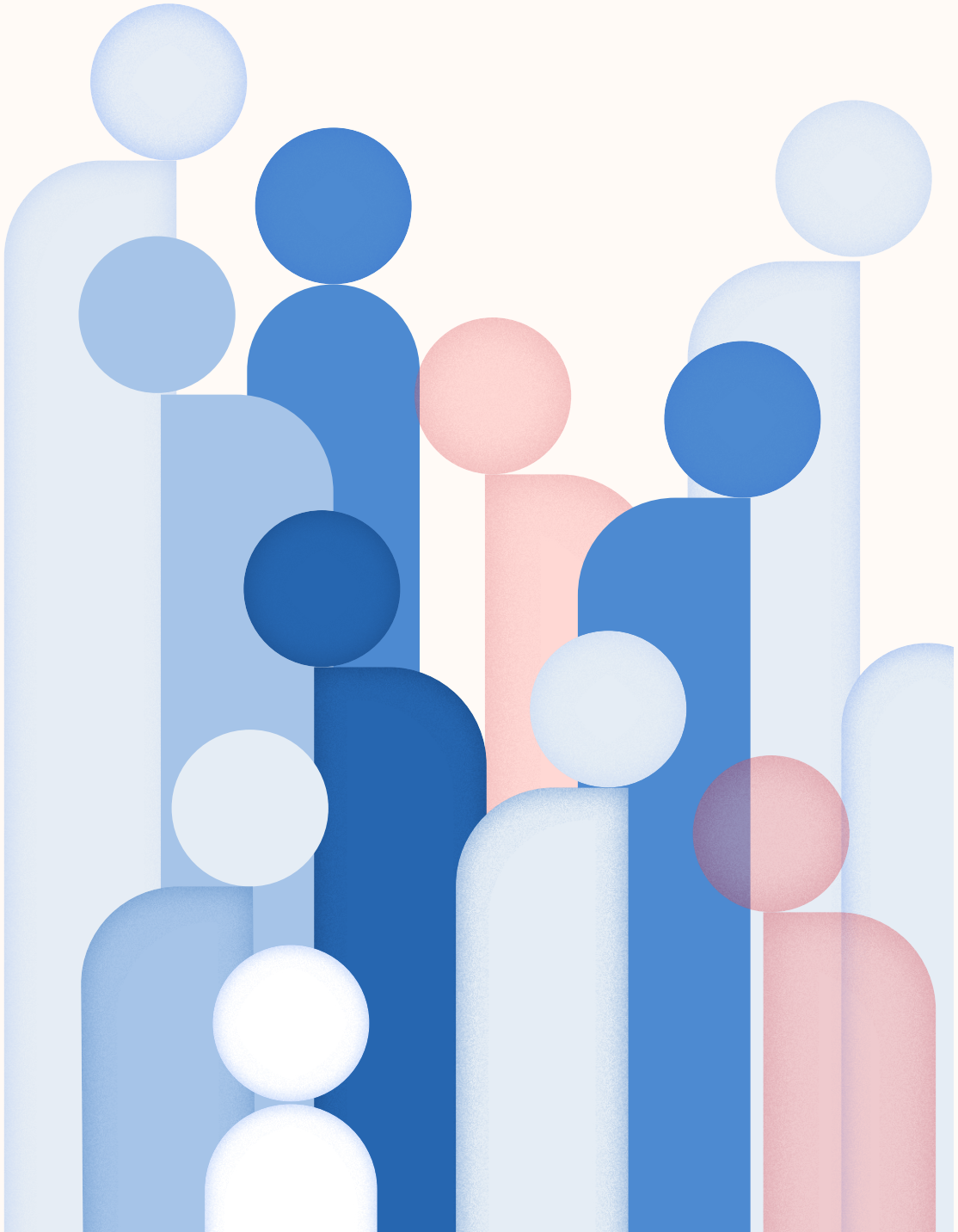


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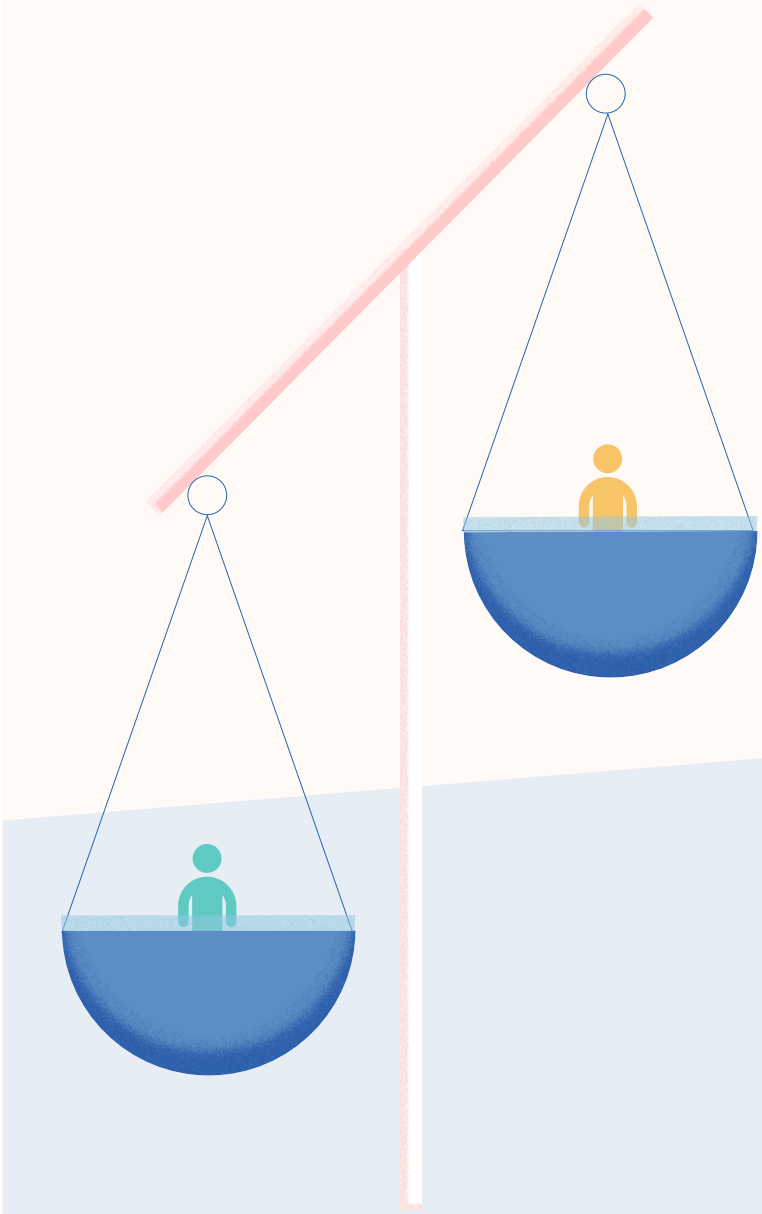
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> Of all the forms of inequality, injustice in health is the most shocking and the most inhuman because it often results in physical death."

When Rev. Dr. Martin Luther King Jr. spoke those words in 1966, the concept of health equity was in its infancy. The need to eliminate health disparities in order to ensure that everyone has an equal opportunity to live a long and healthy life may seem self-evident today, but nearly 60 years after Dr. King condemned it in the harshest of terms, health equity remains an unachieved goal.

The 2022 National Healthcare Quality and Disparities Report (NHQDR) stated that even for conditions where healthcare delivery has improved for all populations, "disparities by race, ethnicity, household income, and location of residence persist because the gains experienced by disadvantaged populations have been insufficient to close the gap between advantaged and disadvantaged populations. In some cases, a disparity has widened."[1]

The alarming legacy of health inequities is most evident when examining the prevalence of chronic conditions



[1] 2022 National Healthcare Quality and Disparities Report, Agency for Healthcare Research and Quality

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among minority groups, who are often several times more likely to suffer from diseases such as diabetes, heart disease, or asthma.[2] Chronic kidney disease (CKD), which can result in kidney failure if left untreated, places every third American adult at risk. But Black Americans are almost four times more likely than White Americans to develop kidney failure.[3] Furthermore, Hispanics are 1.3 times more likely to suffer kidney failure, and the number of Hispanics with kidney failure has increased by over 70% since the year 2000.[4]

Today's health disparities become all the more disturbing when you consider the fact that at least 80% of health outcomes are not determined by the quality of medical care but by a host of non-medical factors called social determinants of health (SDOH).[5]

This complex web of socio-economic variables, environmental factors, and behavioral elements means that an individual's ZIP code matters more than their genetic code when determining their prospects for a healthy life.[6] Researchers have demonstrated that socioeconomic factors have an important role to play even when the condition in question, such as obesity, has a strong genetic component.[7]





[2] Minorities and Chronic Disease: Obstacles to Care, WebMD

[3] Race, Ethnicity, & Kidney Disease, National Kidney Foundation

[4] Race, Ethnicity, & Kidney Disease, National Institute of Diabetes and Digestive and Kidney Diseases

[5] Social Determinants of Health, World Health Organization

[6] Graham, Garth N. "Why Your ZIP Code Matters More Than Your Genetic Code: Promoting Healthy Outcomes from Mother to Child." Breastfeeding medicine : the official journal of the Academy of Breastfeeding Medicine vol. 11 (2016): 396-7. doi:10.1089/bfm.2016.0113

[7] Saelens, Brian E et al. "Obesogenic neighborhood environments, child and parent obesity: the Neighborhood Impact on Kids study." American journal of preventive medicine vol. 42,5 (2012): e57-64. doi:10.1016/j.amepre.2012.02.008

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Post pandemic health equity

While COVID-19 left no one unaffected, it had a disproportionate impact on minority populations, who suffered higher hospitalization and mortality rates.[8] As a result of the pandemic, life expectancy in the United States declined for the first time in a century. That decline was greater for communities of color, further widening the existing health disparity.[9]

However, amidst the devastation of the pandemic, a glimmer of hope for health equity emerged: the rapid adoption of remote care. As healthcare providers shifted to virtual care during the pandemic, patients who previously had limited access to health services due to geographic, financial, or other barriers could connect with their providers from the safety of home.

In the aftermath of the pandemic, remote care is no longer a public health necessity, but it can play a powerful role in closing care gaps and improving health equity. The root causes underlying SDOH are oftentimes systemic and thus require sweeping, system-wide policy changes.

The CMS framework for health equity

The Centers for Medicare & Medicaid Services (CMS) Framework for Health Equity 2022-2032 was developed to support the CMS Strategic Plan and to "advance

[8] Vasquez Reyes M. The Disproportional Impact of COVID-19 on African Americans. Health Hum Rights. 2020 Dec;22(2):299-307. PMID: 33390715; PMCID: PMC7762908.

[9] 2022 National Healthcare Quality and Disparities Report



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health equity by designing, implementing, and operationalizing policies and programs that support health for all the people served by our programs, eliminating avoidable differences in health outcomes experienced by people who are disadvantaged or underserved, and providing the care and support that our enrollees need to thrive." Updated in 2024, the framework has 5 key priorities:

Priority 1 Expand the collection, reporting, and analysis of standardized data.

Priority 2 Assess causes of disparities within CMS Programs, and address inequities in policies and operations to close gaps.

Priority 3 Build capacity of healthcare organizations and the workforce to reduce health and health care disparities.

Priority 4 Advance language access, health literacy, and the provision of culturally tailored services.

Priority 5 Increase all forms of accessibility to health care services and coverage.

Addressing remote care accessibility

Thanks to innovative technology, some of the major barriers to care, that until now were closely associated with SDOH and seemed insurmountable, can be bypassed.

For example, the transportation barriers that prevent 3.6 million Americans from accessing medical care each year are in many cases no longer relevant in the age of remote care.[10] Another important barrier is affordability. Nearly one in three American families opt not to seek medical care due to prohibitive costs.[11] The flexibility and relatively low cost of remote care solutions can help reduce that number.

Such solutions aren't a panacea for the hardships of poverty or rural life, but when strategically deployed at scale, they can chip away at the determinism of social factors, and increase the impact of medical care on health outcomes. Recently-announced HEDIS® quality measures relating to race and ethnicity data and gender-relevant care measures further underscore the need for bold steps that can close health gaps.[12] Health plans must now decide whether to revert back to traditional methods of care or to take advantage of their members' newfound openness to digital health tools that harness enabling technologies to close care gaps.

At Healthy.io, we've seen firsthand how innovative technology can remove major barriers to care and advance health equity by providing new ways for health plans to engage with members. In this white paper, we'll share the lessons we learned while working with health plans to raise their members' adherence to testing for kidney disease, allowing for early interventions to prevent disease progression. We'll explain the methods we use to enable large-scale testing that reaches people across all demographics, providing equitable, clinical-grade care to people in the comfort of their homes.

[10] Social Determinants of Health Series: Transportation and the Role of Hospitals, American Hospital Association

[11] Survey: As coronavirus spreads, nearly 1 in 3 Americans admit to not seeking medical care due to cost, Bankrate

[12] NCQA Adds New HEDIS Quality Measures to Improve Race, Gender Health Equity, HealthPayerIntelligence

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1. Embracing ubiquity to remove barriers

When deploying solutions that can benefit entire populations, plans should first look at what their members already have at their fingertips. 85% of Americans own smartphones.[13] Even in rural communities, 80% have smartphones, while only 72% have access to broadband internet,[14] making a smartphone-based solution a robust platform for solutions targeting rural, suburban, and urban populations.

One such solution is Healthy.io's Minuteful Kidney, a urine test kit that allows health plan members at risk for kidney disease to test at their convenience from home—with no need for broadband. After doing the test, they scan the dipstick using their smartphone camera and receive instant, clinical-grade results from the app, shortening the testing process from days to minutes.

Ubiquity doesn't need to be limited to devices. The growing use of pharmacies and retail clinics for walk-in low-acuity consultations, vaccinations, and the like is another example of how existing infrastructure can be leveraged to expand access to healthcare. Surveys show a growing openness to receiving primary care in such settings.[15] Many people, particularly those in underserved communities, may not have a primary care physician or may face long appointment wait times. By using pharmacies as a point of care, patients

[13] Mobile Fact Sheet, Pew Research Center

[14] Some digital divides persist between rural, urban and suburban America, Pew Research Center

[15] US survey signals big shifts in primary care to pharmacy and clinic settings as consumers seek lower medication and healthcare costs, Wolters Kluwer



Access to care is often a challenge. Many of our community members may not have reliable transport to go for doctor's visits or testing. How may we bridge that gap by providing those point-of-care services at home? That's why Healthy.io is really appealing: it allows people access to care where they want it, in the privacy of their own home.

Dr. Setu Vora, MD
Pequot Tribal Chief Medical Officer



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can receive quick and convenient access to basic healthcare services, without having to schedule an appointment or travel long distances. This approach also helps to alleviate the burden on emergency rooms, which can be overcrowded with patients seeking non-emergency care.

2. Data-driven interventions

The nexus of a person's personal health details and data relating to their race, ethnicity, and socio-economic status constitutes their most private information. But high-quality data on race, ethnicity, and other attributes is foundational to efforts to reduce healthcare inequities. The mere identification of existing inequities is impossible without asking the right questions first; implicit biases will remain hidden until data shines a light on them.

Building the trust necessary for members from disenfranchised communities to willingly share their personal information requires a combination of transparency, community engagement, and the ability to demonstrate robust privacy guardrails. Sometimes, the legal protections that were intended to prevent discrimination need amending to enable the data collection required to advance health equity goals.[17]

Only by overlaying data on health outcomes with demographic information can health plans reveal the disparities unique to their members, and begin to characterize and design the necessary interventions.

3. Tailoring solutions for equitable care delivery

A one-size-fits-all approach rarely works in healthcare. A closer look often reveals that such approaches typically reflect implicit cultural biases that do not take the unique characteristics of minority groups into account, leading in turn to mistrust and low engagement.[18]

In the age of digital healthcare delivery, the messaging and methods that suit the specific needs of individuals and groups are infinitely customizable. For Minuteful Kidney, that means creating an experience tailored to the specific needs of the people using the kit, including support for multiple languages. That also means ensuring that people of all ages and at every level of technological literacy feel comfortable and empowered to perform the test, by simplifying and streamlining it. The result is a 99.5% usability score among patients aged 16-81.

For a clinical test, communicating the result clearly to each individual user is no less important than the usability score or adherence rate. Thus, the messages people receive after completing a Minuteful Kidney test are carefully crafted to their unique characteristics, making sure that they understand their test result and the necessary follow-up steps.

[16] How Digital Technologies Are Advancing Health Equity, Healthy.io

[17] Collection of Race and Ethnicity Data for Use by Health Plans to Advance Health Equity, Urban Institute

[18] Addressing Healthcare Disparities With Community-Tailored Programs, American College of Osteopathic Family Physicians

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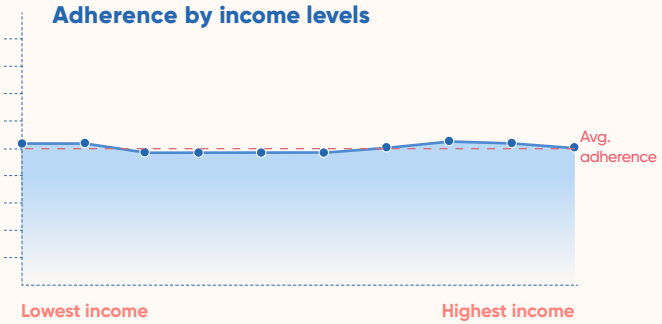
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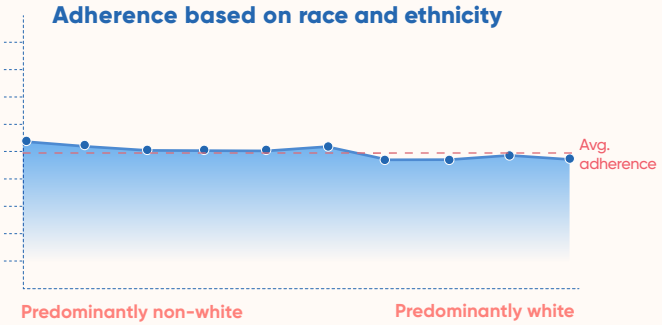
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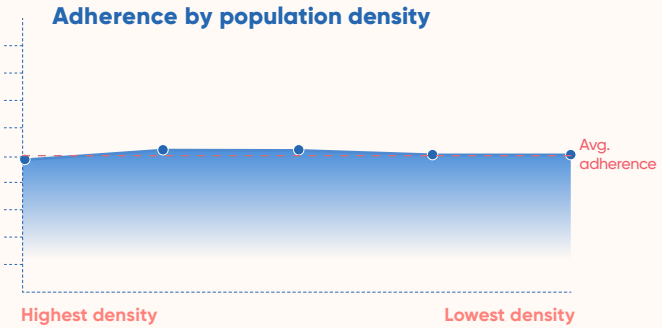
Minuteful Kidney shows how combining a carefully tailored patient-centric approach with the flexibility afforded by smartphone-powered technology can have a dramatic impact on health equity. The urine albumin-to-creatinine ratio (ACR) test is an important early, actionable indicator of CKD and cardiovascular disease, but only 20% of people at risk take it annually. Allowing at-risk members to take the test from home and bypass barriers to care has raised test adherence up to 50%.

What's more, an analysis of a heterogeneous group of 23,000 members across most US states revealed that adherence to Minuteful Kidney was consistent across race or ethnicity, income levels, and population densities, indicating equitable access to care.

Consistent Adherence Across All Demographics







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4. Improving outcomes with engagement and activation

Patient activation, the concept describing the "knowledge, skills and confidence a person has in managing their own health care,"[19] is another important tool in closing health gaps. Empowering people to take an active role in their own health can help to reduce disparities and improve health outcomes across populations.

The concept has been translated into a quantitative measure—the Patient Activation Measure, or PAM—that is shown to accurately predict patient outcomes. Members with higher activation scores are more likely to engage in preventive behaviors, such as regularly attending check-ups and tests. This correlates with lower health care costs because such members have lower rates of hospitalization and emergency room admittance. They are also more likely to have better blood pressure, blood sugar, BMI, and cholesterol levels.

Members with a lower activation score are less likely to follow the ideal medical regimen and are often in a different risk category altogether from their activated counterparts. Their health outcomes—and the associated costs—are likely to suffer.

Solutions such as Minuteful Kidney are designed to be friendly, convenient, and engaging—a far cry from the typical urine test at a clinic. And because the test is self-administered at the user's convenience, it builds a sense of ownership that motivates patients to take control of their health, restoring trust in the system that engages them as partners in their journey to better health. As a result, members using Minuteful Kidney show high motivation to heed the prompts encouraging them to follow up with their provider. And even when members lack a primary care provider, Minuteful Kidney has been shown to activate people back into care.



By focusing on patient activation and providing members with the knowledge, skills, and confidence they need to manage their own health, plans can help uproot key factors in health inequities, such as low health literacy and poor health behaviors. When a patient takes an at-home kidney test, they might not immediately become a highly-activated patient, but they've taken a significant step in that direction by independently taking a test that might save their life.

[19] Supporting people to manage their health: An introduction to patient activation, The King's Fund

[20] Internal data on file

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5. Healthcare at the speed of life

Utilizing smartphone ubiquity to make data-driven, personally-tailored interventions that engage and empower members all converge in what we at Healthy.io call healthcare at the speed of life. Our experience shows that providing members with the flexibility and comfort to access care at the time and place most convenient for them is an efficient and impactful way to create better health outcomes.

A recent survey of members who completed the Minuteful Kidney test demonstrates the power of the speed of life principle, with 97% of survey respondents reporting a positive experience using the test (Fig. 1). When given the opportunity to test at home, at the time most convenient to them, most choose early in the week, and prefer the later hours of the day (Fig. 2 and 3).

Technology provides us with the opportunity to care for people in every sense of the word:

• Deploy large-scale solutions that can reach millions of people, regardless of demographics or physical location

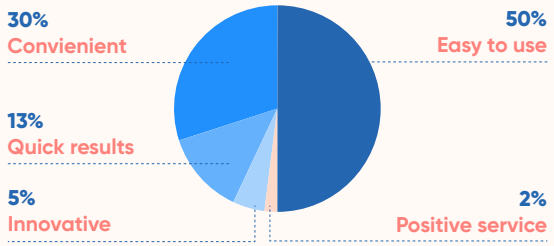
• Customize solutions to the specific needs and preferences that have all too often gone overlooked and underserved

• Allow each and every individual the flexibility to use those solutions from the comfort of their home

> "It was easy, perfect step-by-step instructions. It saves everyone time compared to the doctor's office."

[21] Healthy.io Survey Report: Transforming Member Experience with At-Home Kidney Testing.

Figure 1 - Survey report



97% of respondents had a positive experience using the at-home kidney test.

Figure 2 - Testing by day of the week

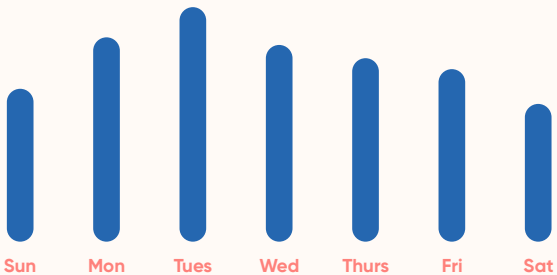
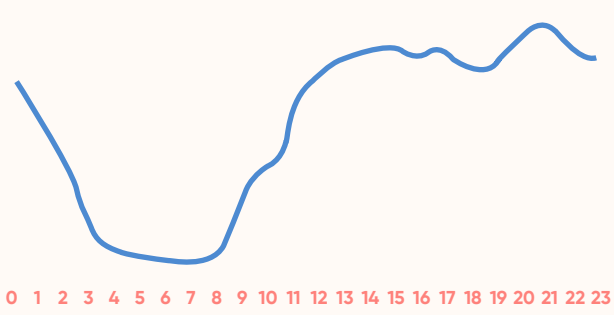


Figure 3 - Testing by time of day



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Healthy.io transforms the smartphone camera into a medical device to deliver healthcare at the speed of life. The company's at-home urinalysis and digitized wound care services enable providers and healthcare systems to close gaps in access and care while increasing patient satisfaction. Healthy.io's Minuteful Kidney service is the first and only FDA-cleared smartphone-powered home kidney test.

Founded in 2013, Healthy.io is partnered with the National Kidney Foundation, NHS England, and leading national health plans, among others. The company is a global leader in digital health and is a recipient of the CNBC 2020 Disruptor 50 Award, Fast Company's World's Most Innovative Companies 2020 Award, and the Financial Times 2020 Boldness in Business Award. The company has offices in Boston, London, and Tel Aviv.

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Founded in 2013

Offices in Boston (US), London (UK) and Tel Aviv (Israel)

Serves over 1,000,000 patients worldwide

Partnerships with:

- The National Kidney Foundation
- Leading national health plans
- NHS England
- Walgreens Boots Alliance