



# Future of Health

## Closing the Digital Health Disconnect: A Blueprint for Optimizing Digitally Enabled Care



Research collaboration led by

manatt



## About the AMA

The American Medical Association is the powerful ally of and unifying voice for America's physicians, the patients they serve, and the promise of a healthier nation. The AMA attacks the dysfunction in health care by removing obstacles and burdens that interfere with patient care. It reimagines medical education, training, and lifelong learning for the digital age to help physicians grow at every stage of their careers, and it improves the health of the nation by confronting the increasing chronic disease burden.

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## Contributors

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# Executive summary

We have entered an era of digitally enabled care—fully integrated in-person and virtual care models that hybridize care delivery based on clinical appropriateness and other factors, such as convenience and cost. The evolution toward digitally enabled care, explored within the [AMA’s Return on Health report](#), is transforming how health care will be accessed, provided, managed and paid for in the decades ahead. Realizing the full potential of digitally enabled care will require fundamentally rethinking how care models are designed, implemented and scaled to solve for many of the challenges of today’s health care system. Since 2010, [over \\$100 billion](#) of venture funding has been invested in digital health companies, much of it in the past three years, accelerated by the COVID-19 pandemic and subsequent surge in telehealth adoption. This period has seen unprecedented levels of new company formation, digital health partnerships, and mergers and acquisitions. Yet, despite this decade of progress, the U.S. health care system has very little to show for it—in the past 10 years we have made minimal progress in addressing ongoing health care challenges of access, quality, outcomes, affordability and equity, even with the introduction of promising new digital health tools. In short, digital health to date has [not lived up to its fullest potential](#). This chasm between the transformative potential of digital health and the reality of its impact today is the “digital health disconnect.”

FIGURE 1. Blueprint for optimizing digitally enabled care

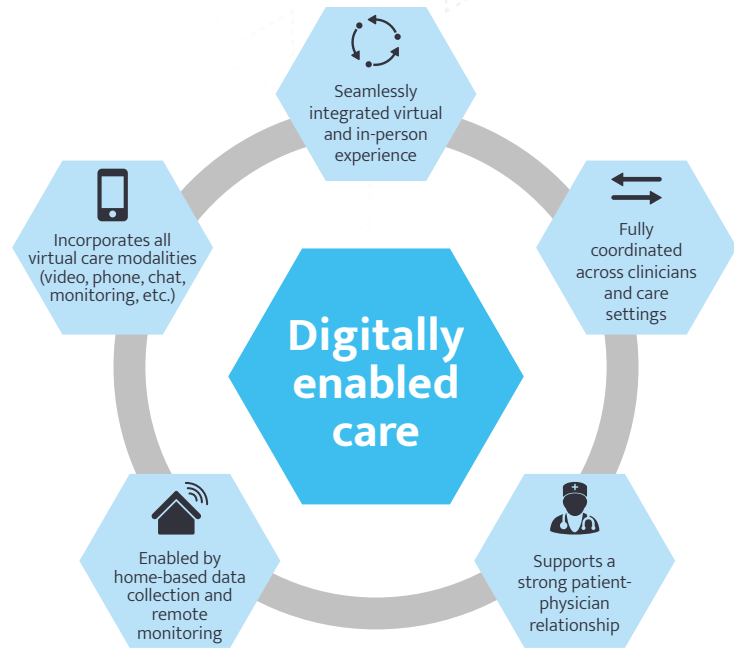
BLUEPRINT FOR OPTIMIZING DIGITALLY ENABLED CARE	
FOUNDATIONAL PILLARS	<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">  <p>Build for <b>patients, physicians and clinicians</b></p> </div> <div style="text-align: center;">  <p>Design with an <b>equity lens</b></p> </div> <div style="text-align: center;">  <p>Recenter care around the <b>patient-physician relationship</b></p> </div> <div style="text-align: center;">  <p>Improve and adopt payment models that incentivize <b>high-value care</b></p> </div> <div style="text-align: center;">  <p>Create technologies and policies that <b>reduce fragmentation</b></p> </div> <div style="text-align: center;">  <p>Scale <b>evidence-based</b> models quickly</p> </div> </div>
SHAREHOLDER OPPORTUNITIES	<b>Physicians</b> Implement workflow tools that create efficiency and optimize care; participate in technology design and implementation; connect with peers; optimize EHRs; partner to extend capabilities
	<b>Health plans</b> Evaluate effectiveness of new models; offer equitable payment; better design value-based payment (VBP); enable equitable cost sharing to in-person services; require information sharing with members’ primary care physicians (PCPs); simplify administrative burden
	<b>Employers</b> Incentivize employee relationships with PCPs; require information sharing with employees’ PCPs and adherence to quality metrics; develop multicondition platforms; create on-site virtual care environments
	<b>Policy makers</b> Permanently extend telehealth flexibilities; increase broadband and effectiveness research funding; strengthen interoperability; support equitable coverage and payment of telehealth services
	<b>Health tech companies</b> Seek patient and provider input; center designs in health equity; simplify provider workflows; incorporate “privacy by design”; improve coordination with other providers
	<b>Venture capital and private equity funds</b> Direct investments to companies that work with incumbents to help ensure coordination of care and reduced fragmentation, address needs of vulnerable populations and perform efficacy research of their products

Bridging the digital health disconnect will take time, resources, policy redesign, and a commitment by all stakeholders to build care models and companies differently than we have in the past. This will be the next great challenge in health care delivery and will progress iteratively given the incredible scale and complexity of the health care system. This report, prepared by the American Medical Association (AMA) and Manatt Health with input from dozens of experts representing a range of stakeholders, outlines foundational pillars for addressing the digital health disconnect and opportunities for stakeholders to realize the full potential of digitally enabled care (see Figure 1).

Achieving this potential will take an “all of health care” effort. As we enter the era of digitally enabled care (see Figure 2), each stakeholder—providers, health plans, employers, policy makers, health tech companies, investors and others—has a unique role to play to ensure we don’t repeat the failures of our current system and maintain focus on physician- and patient-centric care models.

The AMA, for its part, is committed to realizing the full potential of digitally enabled care and will continue to expand its digital health resources, federal and state advocacy efforts, and stakeholder engagement initiatives in order to meet the challenge of bridging the digital health disconnect. The AMA urges stakeholders to partner in working toward a coordinated, digitally enabled future and commit to this effort by joining the AMA as we share findings in national settings, communicate insights on additional areas of opportunities and convene stakeholders to build a better blueprint for optimal use of digitally enabled health care.

**FIGURE 2. Digitally enabled care**



# Introduction

Catalyzed by the COVID-19 pandemic, we have entered an era of digitally enabled care—fully integrated in-person and virtual care models that hybridize care delivery based on clinical appropriateness and other factors, such as convenience and cost. This evolution toward digitally enabled care, explored within the [AMA's Return on Health report](#), is transforming how we think about accessing, providing, managing and paying for health care.

Building on rapidly accelerating levels of investment in the digital health space over the past decade, the COVID-19 pandemic forced the [widespread adoption of digital health tools](#). Health care organizations are increasingly designing and implementing omnichannel digitally enabled care offerings and integrating new virtual care solutions, including video visits, remote monitoring, asynchronous telehealth, continuous and passive sensors, and augmented intelligence (AI) into everyday clinical practice.

Physicians, many of whom had reservations about telehealth prior to the pandemic, have found the experience of delivering care virtually to be quite [positive](#). Digital health companies have entered the market at a record pace, with many bypassing the traditional go-to-market strategy of selling to self-insured employers and health plans (e.g., business to business, B2B) and instead marketing directly to consumers, who often then encourage large enterprises to purchase the solutions (e.g., business to consumer, B2C, or [business to consumer to business, B2C2B](#)).

However, despite record levels of venture funding, new company creation and virtual care adoption, there are few clear signs that the digital transformation of health care is meaningfully improving access, outcomes, quality, care experience, clinician experience or health equity.

This report, jointly developed by the AMA and Manatt Health, aims to explore the digital health disconnect and propose opportunities for health care stakeholders to address it. This report also highlights the AMA's commitment to addressing the disconnect and empowering physicians in their journey to achieve the promise of digitally enabled care. The findings and opportunities featured in this report were gathered through a series of in-depth interviews and workshops with a wide range of physicians, patients, health plans, employers, health systems, investors, digital health companies and digital health experts (see Appendix).

## Definitions

- **Digitally Enabled Care:** Fully integrated in-person and virtual care models that hybridize care delivery based on clinical appropriateness and other factors, such as convenience and cost
- **Digital Health Disconnect:** The gap between the theoretical *potential* of digitally enabled care and today's reality of predominantly “parallel” care between virtual and in-person care settings
- **Digital Health Companies:** Companies that develop digital health tools, solutions and services that either directly provide care or support care delivery
- **Virtual Care:** A type of care that allows for health care providers to interact with and deliver care remotely to patients

“  
In order to close the digital health disconnect we need to decide if we should take the approach of an architect solving the issue from scratch, or a gardener seeking incremental improvements.  
”

Primary Care Physician

# Defining the digital health disconnect

In an ideal world, in-person and digitally enabled care models would be harmonized to amplify the value of health care and deliver highly effective, whole-person care. When thoughtfully integrated, appropriately utilized, and designed using human-centered approaches, digital health tools can effectively augment and enhance in-person care. Yet often, digital health products exist in silos and risk additional fragmentation, higher costs, and diminishing patient and provider experience. The “digital health disconnect” is the chasm between the theoretical potential that digitally enabled care models promise and the reality of “parallel” care that predominates today.

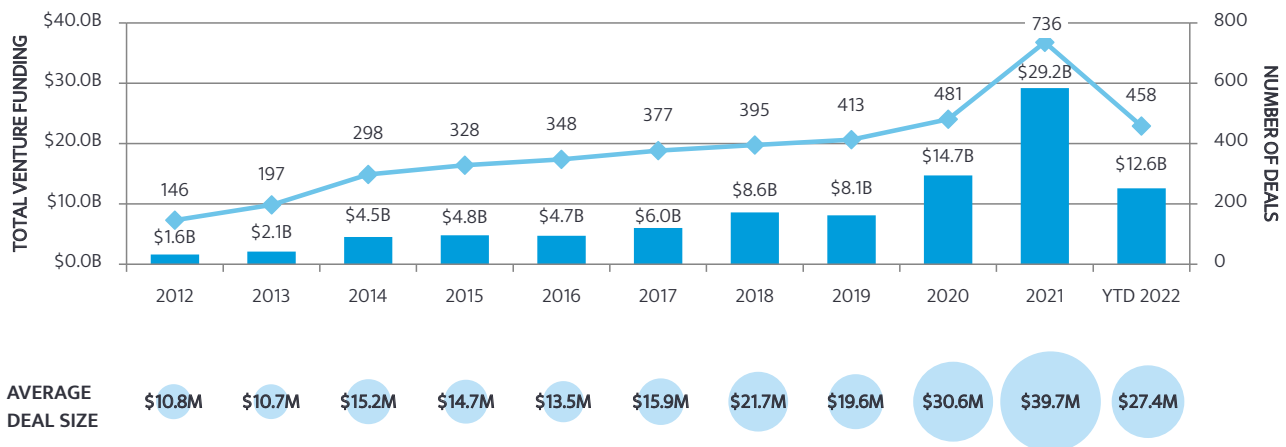
Health care is a \$4 trillion industry in the United States that touches every individual and nearly all businesses. Despite growing investment in digital health companies over the past decade (see Figure 3), the digital health industry is still nascent, and its funding is a fraction of that for the broader health care industry. A significant share of digital health funding from 2012 to 2019 was directed to “first generation” digital health companies, which often designed and sold products focused on wellness, urgent care and low-acuity primary care to health plans and employers. We are now moving into the “second generation,” where companies are designing solutions that deliver or enable the delivery of more

complex services and have a more diversified range of business models. It is still early in the digitally enabled care evolution, but this new era’s companies offer the potential to truly augment and enhance in-person care. They also have the opportunity to address issues of access, quality and equity. At the same time, if the models of care are not well connected, there is risk of negatively impacting continuity of care and the patient-physician relationship.

“We can’t expect digital health companies to solve U.S. health care in two years, it is going to take trial and error. We’re still in the first generation of digital health.”

Health Tech Investor

**FIGURE 3. U.S. digital health funding and deal size (Rock Health, October 2022)**  
2012–Q3 2022










Note: Includes U.S. deals >\$2M; data through September 30, 2022.

Source: [Rock Health Digital Health Venture Funding Database](#).



To fully realize the potential of digitally enabled care and appreciate the drivers of the digital health disconnect, we have sought to understand the range of stakeholder perspectives on how the digital health industry has evolved over the past 10 years. Figure 4 provides a synthesis of what we heard from stakeholders about the digital health disconnect.

**FIGURE 4. Stakeholder perspectives on the digital health disconnect**

 <b>Physicians</b>	 <b>Health plans</b>	 <b>Employers</b>	 <b>Health systems</b>	 <b>Patients and families</b>	 <b>Investors</b>	 <b>Health tech companies</b>
<p>Overwhelmed but interested</p> <p>Overwhelmed by options/operational considerations and rapidly changing ecosystem but interested in meeting the needs of their patients and staff. Conscious of telehealth reimbursement.</p>	<p>Motivated by savings and outcomes, including equity and experience</p> <p>Active in offering digital tools to members and exploring new models of care to the extent they reduce total cost of care or improve outcomes.</p>	<p>Overwhelmed by the options</p> <p>Interested and motivated by savings and employee experience but overwhelmed by the options and number of companies.</p>	<p>Thoughtfully integrating but generally risk averse</p> <p>Rapid adoption of telehealth during the pandemic; rethinking strategic integration of telehealth in the broader delivery of care while balancing the need for short-term returns.</p>	<p>Motivated by convenience and experience</p> <p>Enjoy the convenience and access provided by digital care but still appreciate face-to-face time with physicians and providers based on specific need(s) or symptom(s).</p>	<p>See huge opportunity but also signs of exuberance</p> <p>Explosive growth in digital health investments driven by the pandemic and accelerated adoption of digital tools; expecting a down year and significant consolidation.</p>	<p>See huge opportunity but pressure to show value and scale</p> <p>Explosive growth in digital health investments; volatile market requiring companies to show value and adjust to current economic conditions.</p>

**Though stakeholder perspectives varied, nearly all agreed that to close the digital health disconnect, we need to avoid perpetuating the failures of today’s health care system, including those described below.**

### Lack of patient, family and physician centricity in care model design

With few exceptions, to the detriment of the patient, family and physician experience, care models are designed to meet the operational needs of complex health care delivery organizations, federal and state regulatory requirements, and payers’ billing rules. Rare is the example where a care model is designed and implemented from the start with sufficient patient and physician input. This lack of patient centricity in care model design has also created and exacerbated health disparities.

### Care fragmentation

Fragmentation between health care providers is a perpetual failing of our current health care system and often leaves patients, or their families and caregivers, with the responsibility of trying to coordinate care across multiple care settings. Without designing for an integrated experience, we risk exacerbating this disintegration by replicating that fragmentation between primarily in-person practices and digital health

companies, and between digital health companies. Employer- and health plan-directed care across multiple types of providers is further exacerbating fragmentation.

## Data silos

Data sharing between health care delivery organizations is a persistent challenge. In 2009, Congress passed the HITECH Act, which aimed to modernize data sharing by incentivizing the establishment of regional health information exchanges (HIEs). Many states have since established HIEs; however, economic disincentives, disparate electronic health record (EHR) systems, overengineered interoperability frameworks, confusion around federal regulations and concerns about patient data privacy continue to limit effective information sharing in today's health care system. As of 2018, only 48% of office-based physicians could electronically exchange patient health information outside of their organization, and only 31% could integrate outside electronic health information into their own EHR system. Data silos will multiply with the proliferation of digital health companies if these barriers are not addressed.

“  
**Requiring different EHRs to talk to each other and easily share data would do more to reduce fragmentation than anything else.**

”

Health Tech Company Leader

## Overly complex payment models that disincentivize high-value care

Despite the move to and proliferation of value-based payment models in Medicare, Medicaid and the commercial market, these models are oftentimes overly complex and burdensome to implement. Research highlights that few impact cost, quality and equity as intended. At the same time, changes in the Medicare fee-for-service physician payment schedule enabled the rapid adoption of and payment for telehealth at the beginning of the pandemic. As we emerge from the pandemic, it will be important to renew work on implementation of alternative payment models. In addition, over the past 10 years, there have been many new CPT® and other codes created for a wide range of virtual care modalities such as interprofessional consultations, online digital evaluation and management visits, remote physiologic monitoring, remote therapeutic monitoring, and telephonic evaluation and management visits. Though these codes have been essential to enabling payment for virtual care to date, they are not always covered or paid and may require additional time outside the pandemic environment before they are seamlessly integrated into practice workflows.

## Asking too much of overburdened physicians

Physician burnout affects more than three in five physicians, and one in five physicians intend to leave practice in the next two years. Contributing factors include the stress of the COVID-19 pandemic, staffing shortages, bureaucratic tasks and documentation requirements, and work hours. Digital health tools have the promise to alleviate some of this burden, or the potential to exacerbate it. Achieving the former will require rethinking what we ask of physicians and designing tools that save time and improve care.

“  
**Physician practices are overwhelmed. Adding new things, such as digital health, can be overwhelming.**

”

Private Practice Physician







## Too slow to scale effective care models

On average, it takes 17 years for new biomedical innovations to translate “from bench to bedside.” We need to rapidly reduce the time it takes for evidence-based digitally enabled care models to proliferate. For example, there is an ample and growing evidence base for the effectiveness of digitally enabled care models such as Project ECHO, hospital at home and eConsults, yet national uptake remains modest. While it is essential to grow the evidence base for digitally enabled care models, rapidly scaling models that are working (while further testing and improving them) is equally important.

# A Blueprint for optimizing digitally enabled care

Addressing the digital health disconnect will take time, resources, policy redesign, and a commitment by all stakeholders to build care models and companies differently than we have in the past. This will be health care’s next great challenge and will progress iteratively given the incredible scale and complexity of the health care industry. Through our research, the AMA and Manatt have designed a blueprint to address the digital health disconnect and achieve optimized digitally enabled care.

FIGURE 5. A Blueprint for optimizing digitally enabled care.

BLUEPRINT FOR OPTIMIZING DIGITALLY ENABLED CARE							
FOUNDATIONAL PILLARS							
	Build for <b>patients, physicians and clinicians</b>	Design with an <b>equity lens</b>	Recenter care around the <b>patient-physician relationship</b>	Improve and adopt payment models that incentivize <b>high-value care</b>	Create technologies and policies that <b>reduce fragmentation</b>	Scale <b>evidence-based</b> models quickly	
	Physicians	Implement workflow tools that create efficiency and optimize care; participate in technology design and implementation; connect with peers; optimize EHRs; partner to extend capabilities					
	Health plans	Evaluate effectiveness of new models; offer equitable payment; better design VBP; enable equitable cost sharing to in-person services; require information sharing with members’ PCPs; simplify administrative burden					
	Employers	Incentivize employee relationships with PCPs; require information sharing with employees’ PCPs and adherence to quality metrics; develop multicondition platforms; create on-site virtual care environments					
	Policy makers	Permanently extend telehealth flexibilities; increase broadband and effectiveness research funding; strengthen interoperability; support equitable coverage and payment of telehealth services					
	Health tech companies	Seek patient and provider input; center designs in health equity; simplify provider workflows; incorporate “privacy by design”; improve coordination with other providers					
Venture capital and private equity funds	Direct investments to companies that work with incumbents to help ensure coordination of care and reduced fragmentation, address needs of vulnerable populations and perform efficacy research of their products						

## Build for patients, physicians and clinicians

Digitally enabled care models, whether delivered by digital health companies, large health systems, federally qualified health centers (FQHCs), physician practices or others, should be built using human-centered design approaches with input and direction from patients, families and caregivers, physicians, nurses, other clinicians, and office staff. Digitally enabled care models should be built around patient and provider needs first and regulatory and billing requirements second. Simplicity of the technology platforms is key

for patients, physicians and clinicians. Provider organizations like [One Medical](#), [Privia Health](#), [Oak Street Health](#) and [Kaiser Permanente](#), among others, have prioritized developing simple, patient- and provider-centric technology platforms and care models. Another example of building for providers is the AMA's [De-implementation Checklist](#), which is a list of processes and requirements that add little or no value to patients and their care teams and that health system leaders can de-implement.

## Design with an equity lens

Digitally enabled care models should be designed with an equity lens. The AMA's [In Full Health](#) initiative outlines principles for equitable health innovation, including these:

1. Dismantling structural racism, sexism and bias in health innovation resource allocation begins with organizational self-assessment.
2. Impact on health equity is a fundamental metric that should be used in assessing the value created by all health innovations.
3. Greater investment is needed in health innovations developed specifically to improve health in and/or eliminate inequities experienced by historically marginalized communities, with resources and support prioritized for innovators designing from within these communities.
4. More health innovation investment models should support asset ownership and wealth development within historically marginalized communities.
5. While health innovation funders, solution developers and customers have a significant opportunity for impact at the organizational level, we need industry influencers to engage in addressing systems-level barriers and needs.

As we build new and integrated care models for the future, it is critical to focus on patients' different circumstances—including age, gender, race, language and other social determinants of health—and ensure that digital tools are used as a bridge to more equitable care. A [recent study](#) found that 34% of people aged 18 to 24 had a digital app recommended by a physician, falling to just 4% in those aged 65 and over, even though more than half of those 65 and over support the move to digital health.

## Recenter care around the patient-physician relationship

The predominant business model for virtual care companies over the past decade has been to sell to large self-insured employers, who then offer the services to their employees. Health plans have also increasingly partnered with virtual care companies to offer services to their members. To the recent frustration of many employers and health plans, the services that these virtual care companies provide has largely been disconnected from individuals' regular source of care and has led to additional fragmentation. Having an established relationship with a primary care physician is essential to early disease detection and treatment. However, a [recent study](#) found that the percentage of adult Americans with an identified source of primary care declined between 2002 and 2015, with particularly steep drops among young adults. Moving forward, it will be critical to reemphasize the primacy of the patient-physician relationship, especially with patients' primary care physician, to ensure that care is optimally managed and coordinated.

## Improve and adopt payment models that incentivize high-value care

Though the creation of and payment for new CPT and other codes for a wide range of digital health modalities have been necessary for virtual care uptake to date, achieving the next level of adoption of digitally enabled care will require ensuring that these innovations are financially sustainable in the long run. It is not enough to remove the barriers on a temporary basis for this public health emergency; health care providers need to know that positive innovations in digital health modalities will continue to be supported by payment models. Multiple stakeholders pointed to [Kaiser Permanente](#) as an example of a financially and organizationally integrated organization that has fully embraced digitally enabled care. Other stakeholders pointed to nascent [hospital at home programs](#) that have delivered excellent results.

## Create technologies and policies that reduce fragmentation

In the future, digitally enabled care models need to be coordinated with each other, including across virtual and brick-and-mortar care settings. Today, a patient may have access to a health plan that covers visits to their primary care physician and use one digital health company for diabetes management, a second for virtual physical therapy and a third for mental health treatment. Physicians and clinicians often have no seamless method of communication with each other, and the patient's health information is distributed across multiple provider systems. The digitally enabled care models of the future need to be highly coordinated across both digital and primarily in-person sites of care. Innovators need to promote care models and develop technologies that reduce fragmentation. Policy makers need to continue to develop, refine and enforce information sharing rules focused on the technical, contractual and financial roadblocks physicians experience if we are to achieve true interoperability across the health care ecosystem.

## Scale evidence-based models quickly

It takes too long to scale evidence-based care models today, and speed of scale is often tied to misaligned financial incentives. Though it's critical that new care models be rigorously studied and tested to ensure patient safety and care model effectiveness, once care models have demonstrated value, they should be scaled as rapidly as possible while being further studied and refined. While experts agreed that "move fast and break things" doesn't work in medicine, it is not acceptable to wait decades for evidence-based models to achieve broad uptake. There are few incentives or forums for companies (e.g., EHR vendors, health plans, tech companies) and provider organizations to share pilot outcomes or aggregate data, though it is increasingly important to identify and showcase effective case studies and best practices. Organizations can build on each other's successes, learn and adopt from each other, and identify opportunities to partner on closing the disconnect if they are equipped with relevant data, knowledge and real-world research findings. Building care models in collaboration with interested stakeholders may accelerate adoption; health tech companies may consider testing and refining early pilot designs with patient advocacy groups, providers or academic medical centers.

# Stakeholder opportunities

Achieving the promise of digitally enabled care requires health care stakeholders to move in partnership. The following are opportunities for various stakeholders to adopt these principles and contribute to the full realization of digitally enabled care.

## Opportunities for physicians

- Implement digital health tools that enhance your workflow to create efficiencies, reduce administrative burden and optimize your patient care.
- Actively participate in the design, evaluation and implementation of new technologies using human-centered design approaches such as through involvement in AMA Physician Innovation Network.
- Connect with your peers to learn about what is, and what is not, working for them based on their specialty, use case and vendor experiences such as through the AMA Telehealth Immersion Program.
- Optimize and utilize the full functionality of existing EHR systems, leverage new laws that empower physicians as EHR technology consumers, and put in place processes for continuous EHR optimization (e.g., ask about your existing system’s “model experience” or case studies where digital health tools have been successfully integrated).
- Pursue partnerships with other providers and companies that allow clinicians to extend practice capabilities and offerings (e.g., after-hours, urgent care, behavioral health) while maintaining the primacy of the patient-physician relationship.

### Spotlight: Concert Health and Pursuing Clinical Partnerships to Expand Offerings

Concert Health, a digital behavioral health medical group, provides behavioral health services to primarily brick-and-mortar primary, pediatric and women’s health care providers through a partnership model. Concert Health uses the evidence-based collaborative care model, whereby a primary care team works with a behavioral health care manager and consulting psychiatrist as a team. Remote behavioral health clinicians are integrated into preexisting primary care teams, offering coordinated, digital services to patients, alongside their primary care team. This approach supports small and rural practices, as well as larger practices, allowing them to augment service offerings and improve access to behavioral health care.



## Opportunities for health plans

- Share outcomes data from digitally enabled care models.
- Use claims data to more rigorously evaluate the effectiveness of digitally enabled care models and more rapidly scale those that are working.
- Support providers in transitioning to digitally enabled care by ensuring coverage parity and equitable payment for virtual care and designing processes that do not increase administrative burden.
- Ensure copayments, coinsurance and deductibles for virtual services are not higher than for equivalent in-person services.
- Better design value-based payment models in collaboration with providers and patients that appropriately incentivize providers to advance evidence-based digitally enabled care models.
- Impose requirements on contracted virtual care providers to share patient encounter data with members' primary care physicians.
- Allow all contracted physicians to provide care via telehealth to their patients.
- Evaluate, review and significantly limit the volume of prior authorizations that impede patient care.

### Spotlight: Blue Cross Blue Shield of Michigan (BCBSMI) Supports Adoption of Digitally Enabled Behavioral Health Integration

A [BCBSMI analysis](#) highlighted that it was spending two or three times more on members with behavioral health issues than on members without. To address this discrepancy, BCBSMI supported practices in implementing the collaborative care model with financial incentives and awards. BCBSMI offered training to practices and provided compensation for the practices to close in order to attend the training and implement the model in their practices. BCBSMI has designed [213 collaborative care-designated practices that increasingly incorporate telehealth](#).

## Opportunities for employers

- Incentivize employees to establish and maintain a regular source of primary care in their communities, and ensure those clinicians are appropriately compensated for offering virtual care.
- Require that any contracted digital health companies share patient encounter data (and ideally, proactively coordinate care with) the employees' primary care physicians, and report on/adhere to quality and cost metrics.
- Accelerate the development of high-quality, multicondition digital health platforms that also deliver or are closely linked with primary care.
- Create safe and private environments to enable on-site virtual care.



## Opportunities for policy makers

- Permanently extend telehealth coverage policies that were adopted temporarily during the COVID-19 public health emergency.
- Expand funding to study and scale digitally enabled care models.
- Increase federal broadband funding, outreach and education to achieve universal and affordable broadband access and digital literacy for every American.
- Update, focus and enforce information sharing rules to address technical, contractual and financial roadblocks physicians experience when accessing patient data.
- State lawmakers and regulators should support coverage of telehealth on the same basis as in-person care, equitable payment for virtual care, and narrow exceptions to licensure for out-of-state physicians providing ongoing care to an existing patient via telehealth.

### Spotlight: National Cancer Institute (NCI) and Telehealth Research Centers of Excellence (TRACE)

Supported by Cancer Moonshot, the NCI's TRACE Initiative is funding several centers focused on the use of and effectiveness of telehealth for cancer care. Initiatives are focused on developing an evidence base for telehealth for cancer care, addressing gaps in access to digital care, studying novel tools and technologies for cancer care, and reviewing the digital policy and reimbursement landscape as it impacts cancer care. Participating centers include Memorial Sloan Kettering Cancer Center, Northwestern University, New York University Grossman School of Medicine and the University of Pennsylvania.

## Opportunities for health tech companies

- Seek clinician and patient input on the design of new digital health tools.
- Ensure that new digitally enabled care models are always developed with a health equity lens.
- Build solutions that simplify workflows for clinicians and caregivers and that save money and time for practices.
- Incorporate a “privacy by design” approach in the development of digital health tools to ensure patients' data are private and protected.
- Improve coordination of care with other health tech companies and predominantly brick-and-mortar providers (especially primary care physicians).
- Build integrated referral relationships with brick-and-mortar health care organizations, including ancillary services, to support patient access to comprehensive virtual and in-person care.

## Opportunities for venture capital and private equity funds







- Increase investment in companies that are committed to working with incumbent health care organizations, as companies that embrace integration will be best positioned to succeed in the future.
- Direct investments to more diverse founders and to companies that address the needs of vulnerable populations.
- Prioritize investment in companies that perform high-quality research studies of the efficacy of their products and services.
- Look for opportunities to drive healthy consolidation in a manner that reduces fragmentation and promotes comprehensive patient care models.

# Case examples

Below are two examples of organizations that have implemented care models that leverage digital care and illustrate several of the foundational pillars.

## One Medical

One Medical is a human-centered, technology-driven, membership-based primary care practice. It offers integrated in-person care and 24/7 access to virtual care to provide a seamless and patient- and provider-centric care model.<sup>1</sup>

FOUNDATIONAL PILLAR	ONE MEDICAL ACTIONS
 <p><b>Build for patients, physicians and clinicians</b></p>	<p>Patients have 24/7 access to digital health services and can easily navigate the platform to schedule appointments, review lab results, request a telehealth or in-person appointment, and message their care team. They have the option to communicate via various modalities, including messaging, text, voice and video. One Medical physicians and clinicians seamlessly communicate with team members across the country to review and collaborate on patient treatment plans. The practice's technology platform provides insights into patient needs to support care delivery and is designed to reduce administrative hassles. One Medical shares that <a href="#">45% of members use its digital services each month</a>.</p>
 <p><b>Design with an equity lens</b></p>	<p>One Medical highlights its <a href="#">LGBTQIA+ services</a>, noting its providers that specialize in LGBTQIA+ health and its compassionate and inclusive clinical environment. One Medical uses the patient's preferred name in their chart and offers gender-neutral bathrooms at clinics whenever possible.</p>
 <p><b>Recenter care around the patient-physician relationship</b></p>	<p>One Medical technology supports longitudinal relationship development between patients and providers. Regular engagement with the app, as well as relationships nurtured through digital outreach and responsiveness, <a href="#">builds trust between members and physicians and advanced practice providers</a>.</p> <p>One Medical members average <a href="#">10 engagements per year</a>—eight digital and two in-person.</p>
 <p><b>Improve and adopt payment models that incentivize high-value care</b></p>	<p>A <a href="#">recent study</a> found that One Medical members had 45% lower per member per month spending on a risk-adjusted basis than a matched cohort had.</p>
 <p><b>Create technologies and policies that reduce fragmentation</b></p>	<p>One Medical has established relationships with primarily brick-and-mortar health networks, augmented by clinical and digital integrations. These relationships enable coordinated care with partner facilities and specialists as needed. For example, hospital admissions/emergency room visits are <a href="#">coordinated for seniors with real-time notifications to One Medical providers</a>.</p>
 <p><b>Scale evidence-based models quickly</b></p>	<p>One Medical has national digital coverage and presence in <a href="#">25 markets</a>, with four market entries planned for 2022. Its membership grew to 736,000 in 2021, a <a href="#">34% increase from 2020</a>, and by 307% since 2016. One Medical works with over 8,000 companies to provide care to employees as a benefit.</p>

<sup>1</sup> In July 2022, Amazon and One Medical entered into a definitive merger agreement in which Amazon will acquire One Medical. The Federal Trade Commission is [reviewing the merger](#).

## Mayo Clinic and the OB Nest model

OB Nest is a digitally enabled care model for low-risk pregnancies developed and rigorously researched and tested by Mayo Clinic clinicians. The model was developed by the Mayo Clinic Center for Innovation in collaboration with the Department of Obstetrics and Gynecology. It redesigns traditional prenatal care and leverages in-person and virtual care to offer a convenient, high-quality, patient-centric experience for expecting pregnant individuals.

FOUNDATIONAL PILLARS	MAYO CLINIC OB NEST ACTIONS
 <p><b>Build for patients, physicians and clinicians</b></p>	<p>The OB Nest model was developed with patient and clinician needs at its core. Clinicians evaluated Mayo Clinic’s standard practice of care by observing clinical encounters and interviewing pregnant patients, staff, physicians and midwives, and then developed and tested new approaches to care. The standard model of prenatal care is highly medicalized and was developed before virtual care and home monitoring were widespread and when fewer women worked outside the home. The OB Nest model transforms standard prenatal care and reduces office visits, leverages self-monitoring (e.g., fetal doppler and blood pressure equipment), encourages virtual communication, and offers a forum for virtual community building. Despite changes to the care model, Mayo Clinic maintains quality of care and meets the needs of patients and providers.</p>
 <p><b>Design with an equity lens</b></p>	<p>The OB Nest model was developed applying a human-centered design methodology. This design model incorporates <u>cultural, technical and financial constraints</u>. For example, OB Nest makes it easier for expectant mothers who live far away to receive care from Mayo Clinic clinicians and reduces costs from missing work, child care needs, etc.</p>
 <p><b>Recenter care around the patient-physician relationship</b></p>	<p>This model enables clinicians to focus more resources on high-risk patients while building relationships with all patients. OB Nest nurses maintain communication through synchronous and asynchronous virtual care modalities, supporting patients throughout their prenatal journeys and the OB Nest program.</p>
 <p><b>Improve and adopt payment models that incentivize high-value care</b></p>	<p>The existing care model is <u>paid for as bundled care</u>, allowing flexibility in providing digitally enabled hybrid care models, which enabled Mayo Clinic to innovate within a set fee schedule.</p>
 <p><b>Create technologies and policies that reduce fragmentation</b></p>	<p>The OB Nest model thoughtfully integrates in-person and virtual care in a seamless, coordinated manner. To support the program, Mayo Clinic developed a custom knowledge-based tracking system to track low- and high-risk patients with a dashboard to support care coordination and interventions.</p>
 <p><b>Scale evidence-based models quickly</b></p>	<p>The OB Nest model is an example of how clinical teams can thoughtfully rethink and design innovative and successful care models that incorporate appropriate in-person and virtual care. The OB Nest model has garnered interest nationally and internationally, and clinicians from the Mayo Clinic have worked with other <u>U.S. sites to establish similar models</u>.</p>

# AMA commitment

As a key stakeholder, the AMA is committed to advancing digitally enabled care and bridging the digital health disconnect. Going forward, the AMA is committing to:

## Prepare and inform physicians by providing high-value insights and actionable resources

The AMA will amplify its commitment to engaging with the health care innovation ecosystem to best understand and influence industry developments and to serve as a conduit among physicians, digital health companies, investors and other industry stakeholders. The AMA will continue to expand the [AMA Physician Innovation Network](#) to better bridge connections between physicians and companies, continue to develop new toolkits and other resources to accelerate adoption of digitally enabled care, and explore new venues through which to deliver high-impact actionable resources on the topics most relevant to physicians.

## Expand federal and state advocacy agenda

The AMA is actively engaged in federal and state advocacy efforts related to advancing virtual care access, equitable payment and quality. The AMA will expand on these efforts by advocating for permanent extension of payment and coverage for digitally enabled care nationwide, policies to achieve universal broadband access and affordability as well as digital literacy, continued improvements to federal interoperability and data sharing policies, and efforts at the state level to support patient access to and continued inclusion of community physicians in digitally enabled care.

## Engage with key industry stakeholders

The AMA will build on its existing role as a convener of key industry stakeholders in the digital health space and the development of value-based care models. The AMA will continue to engage, as it has done through this research, with physicians, patients, other clinicians, health systems, FQHCs, health plans, employers, digital health companies, investors and policy makers on a regular basis to provide a forum to discuss and share outcomes data and successes in an effort to address the digital health disconnect. One vehicle for industry engagement is through [Health 2047](#), the AMA's incubator and investment arm, which will increasingly have a focus on incubating and investing in solutions that address the market friction points outlined in this report. Another is through [In Full Health](#), a community committed to advance equitable opportunities in health innovation investment, solution development, and purchasing; the initiative was sparked by the AMA and includes numerous collaborators such as Together.Health, MATTER, HIMSS and Business Group on Health.

# AMA call to action

The AMA is also committed to continued collaboration with stakeholders across the health care ecosystem in addressing the digital health disconnect. To that end, the AMA invites individuals and organizations to work with us toward a coordinated, digitally enabled future and join us as we convene future efforts on this topic, share findings in national settings and communicate insights on additional areas of opportunities.

Join us by expressing your intent to commit to the pillars outlined in the blueprint and to contribute to the following:

- Identify and showcase effective case studies and best practices across specialties, practice settings and stakeholders.
- Codevelop a common vocabulary for digitally enabled care to help ensure alignment and to avoid adding complexity.
- Share opportunities, best practices and learnings for how digitally enabled care can address workforce issues and industrywide burnout through AMA-convened efforts, pilots and organized (virtual and in-person) learning collaboratives.
- Collaborate to provide education on the approaches, outcomes and impact based on specialty, use case and patient population needs.
- Commit to the [principles of equity and innovation](#) recently released by In Full Health.
- Help ensure that the patient-physician relationship continues as the “heart and soul” of medicine and supports physician-led, team-based care.
- Collaborate on aligned advocacy efforts focused on addressing industry fragmentation, pursuing payment reform and advancing digitally enabled care.

## Example: American Academy of Pediatrics SPROUT Network

The American Academy of Pediatrics runs the [Supporting Pediatric Research on Outcomes and Utilization of Telehealth \(SPROUT\) Network](#) with funding provided by the National Institutes of Health. SPROUT’s mission is to promote, develop and disseminate multicenter value-driven research on pediatric telehealth. The SPROUT Network provides a rich resource of telehealth and research experts to exchange innovative ideas, offer mentorship and collaborate on multisite research and has hundreds of members globally across more than 140 institutions.

Join us in building the health care future that patients deserve.

Visit  
[ama-assn.org/practice-management/digital/ama-future-health-report](https://ama-assn.org/practice-management/digital/ama-future-health-report)

Email us at  
[digital.health@ama-assn.org](mailto:digital.health@ama-assn.org)  
 to learn more

# Appendix: Report methodology

## Stakeholder interviews

The AMA and Manatt Health teams conducted numerous interviews with a diverse set of health care leaders from physician practices, health systems, digital health companies, venture funds and health plans in order to understand their perspectives on digitally enabled care and the digital health disconnect.

INTERVIEWEE	ROLE	AFFILIATION
Sameer Berry, MD, MBA	Chief Medical Officer	Oshi Health
Patrick Carroll, MD	Chief Medical Officer; Board Member	Whoop; HIMS – HERS
Lawrence Cheung, MD	Dermatologist	Private Practice
Tracy Dooley, MD	Partner	Avestria Ventures
Josh Dunsby	Vice President, Client Advocacy and Consultant Relations	One Medical
Christina Farr	Principal Investor, Health-Tech Lead	OMERS Ventures
John Halamka, MD, MS	President, Mayo Clinic Platform	Mayo Clinic
Rhonda Hale, MA	Vice President, Finance	Baptist Health Medical Group
Kristi Henderson, DNP, FAAN	SVP & CEO; Board Chair	Optum Everycare, United Health Group; American Telemedicine Association
Marsha Hyslop, RN, MBA	Chief Clinical Officer	Catapult Health
Alyssa Jaffee, MBA	Partner	7wireVentures
Aditi U. Joshi, MD, MSc	Digital Health Consultant, Emergency Medicine Physician	Panda Health, MDisrupt (previously Thomas Jefferson University Hospital)
Kate Kirley, MD, MS	Director of Chronic Disease Prevention	AMA
Glenn Kotz, MD	Family Medicine Physician	MidValley Family Practice

INTERVIEWEE	ROLE	AFFILIATION
Adam Licurse, MD, MHS	Senior Medical Director, Interim Chief Medical Information Officer	Mass General Brigham
Okiki Louis, MD	President	Oscar Medical Group
Bill Marsh, MD	Vice President of Care Delivery IT and Products, Sales & Marketing	The Permanente Federation
Mike McSherry	Chief Executive Officer	Xealth
Ann Marie Morse, DO	Pediatric Neurologist and Sleep Medicine Specialist	Geisinger Health
Narayana Murali, MD	System Chief Medical Officer, Medicine Services	Geisinger Health
Joey Nichols, MD, MPH	Family Medicine Physician	Canopy Family Care
Brett Oliver, MD	Chief Medical Information Officer	Baptist Health
Sandhya Rao, MD	Chief Medical Officer and Senior Vice President	Blue Cross Blue Shield of Massachusetts
Peter Rasmussen, MD	Chief Clinical Officer	The Clinic by Cleveland Clinic
Matthew Sakumoto, MD	Virtual-First Primary Care Physician	Sutter Health
Lee Schwamm, MD	Vice President, Digital Patient Experience; C. Miller Fischer Chair in Vascular Neurology; Professor of Neurology	Mass General Brigham; Mass General Hospital; Harvard Medical School
Megan Zweig, MBA	Chief Operating Officer	Rock Health

## Expert workshop

The AMA and Manatt Health convened a panel of experts for a virtual workshop on Aug. 2, 2022, for a collaborative discussion on how to further empower physicians to adopt and scale evidence-based digitally enabled care models and to identify opportunities for different stakeholders to address the digital health disconnect.

PARTICIPANT	ROLE	AFFILIATION
Buffy Alegria	Managing Partner	SteelSky Ventures
Pooja Aysola, MD	Executive Medical Director, Head of Clinical Operations	Wheel
Jen Brull, MD	Vice President, Clinical Engagement	Aledade
Andrew Diamond, MD, PhD	Chief Medical Officer	One Medical
Carolynn Francavilla, MD	Family Medicine Physician	Green Mountain Partners for Health
Chris Gibbons, MD, MPH	Founder and Chief Executive Officer	The Greystone Group Inc.
Parinda Khatri, PhD	Chief Executive Officer	Cherokee Health Systems
Virna Little, PsyD, MSW	Founder and Chief Operating Officer	Concert Health
Joey Nichols, MD, MPH	Family Medicine Physician	Canopy Family Care
Sandhya Rao, MD	Chief Medical Officer and Senior Vice President	Blue Cross Blue Shield of Massachusetts
Peter Rasmussen, MD	Chief Clinical Officer	The Clinic by Cleveland Clinic
Charlotte Yeh, MD	Individual contributor	Chief Medical Officer AARP Services, Inc.



## Specialty society and expert workshops

The AMA and Manatt Health convened two specialty society and expert workshops on Sept. 19 and 21, 2022, to gain an understanding of how different specialty societies view the digital health disconnect and to identify opportunities to further support physicians in implementing evidence-based digitally enabled care models.

PARTICIPANT	AFFILIATION
Neil Busis, MD	American Academy of Neurology
Jeffrey Davis	American College of Emergency Physicians
Emily Hayden, MD	American College of Emergency Physicians
Ben Kummer, MD	American Academy of Neurology
Dennis Kuo, MD	American Academy of Pediatrics
Russell Libby, MD	Virginia Pediatric Group
Ana Maria Lopez, MD	American Society of Clinical Oncology
Simon Mathews, MD	Johns Hopkins Medicine
Vimal Mishra, MD	UC Davis Health
Michaela Read	American Academy of Neurology
Stephen Waldren, MD, MS	American Academy of Family Physicians
Dan Walter	American Academy of Pediatrics
Margo Williams	American College of Physicians

In addition to the individuals noted above, we spoke with additional physicians from various practice settings and specialties to inform this report.

## With acknowledgement for their review and contributions

- Digital Medicine Society (DiMe)
- Digital Therapeutics Alliance (DTA)
- American Telemedicine Association (ATA)

