



Tech Giants Race to Fix Health Care

What Apple, Google, and Amazon's visions mean for medical affairs

Part 1: Five ways Apple is transforming health care

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Executive summary

Technology keeps creeping further and further into our lives. It's changing everything—especially how we connect. For health care, that means transformational opportunities to predict, measure, and communicate the value of medicine.

Trend-setting technology innovators will create opportunities for medical affairs leaders to do their jobs better: understand customers, generate meaningful evidence, and communicate value to key stakeholders. Apple will facilitate direct connections with patients to generate real-time, patient-reported outcomes and expedite care management. Google will enable use of nontraditional sources of health data to predict and demonstrate meaningful real-world clinical effectiveness. Amazon will provide insight into how large employers will influence product adoption and utilization. The company will also disrupt the health care supply chain in major ways—changing which stakeholders medical affairs might prioritize.

Read on to learn how investments from tech giants today might shape the future health care landscape. Our observations will help you plan for opportunities and challenges your medical affairs organization will face in the next five years.

Visions for the future of health care

Part 1: Five ways **Apple** is transforming health care

- Let patients connect their iPhones directly to their providers' EHRs
- Help providers monitor their patients' health in new ways
- Help researchers recruit hundreds of thousands of study participants—in a snap
- Allow users to monitor their health via Apple devices (and convince health insurers to foot the bill)
- Pioneer a wellness-based approach to employee health care

Part 2: Six ways **Google** will move into health care in the next five years

- Store your health care data
- Crunch all that data
- Diagnose diseases better than human doctors
- Build “smart” health products, with or without industry partners
- Sell Internet of Things (IoT) devices for your home—and nursing homes
- Cut the burden of clinical documentation

Part 3: What “**Amazon health care**” could look like in five years

- Employer aggregator
- Next-generation retail pharmacy
- Global health care logistics specialist
- Consumer-focused technologies
- Primary care operator

Five ways

Apple is transforming health care

In a recent interview with Jim Cramer on “Mad Money,” Apple CEO Tim Cook asked what people in the future will think Apple’s greatest contribution was to mankind?

His answer: **It will be about health.**

Apple's ambitions are bold, but they're not just talk.

In the past year, Apple has [hired](#) dozens of doctors to expand its digital health products, [grown](#) its employee health and wellness clinics, and [rolled out](#) a long-anticipated Apple Watch equipped with an electrocardiogram (ECG).

Perhaps because of the wide breadth of Apple's ambitions, it can be tough to pin down exactly what Apple wants to do in the health care space. To help, we've distilled all the confusing, and sometimes contradictory, reporting into the five concrete ways the company is seeking to transform the health care industry.

What Apple has done in health care so far

Apple's biggest venture into health care so far is its Health app, which it launched in 2014 and now comes preinstalled on every iPhone. The app includes features such as activity tracking, sleep monitoring, and mindfulness support.

But those built-in features are only the starting point. Apple has also created three "kits" that help developers build health-related apps for the iPhone and Apple Watch:

- **HealthKit:** Allows developers to feed information to and from the app, and provides a framework for connecting new apps
- **ResearchKit:** Helps developers create apps for medical research or clinical trials
- **CareKit:** Lets developers create apps to manage patient care and connect patients with providers

So what's next? Given Apple's notorious penchant for secrecy, it's hard to say for sure. But here's what analysts and experts say are five likely aspects for Apple's ambitions in health care.

1 Apple wants to let patients connect their iPhones directly to their providers' EHRs.

In January 2018, Apple [rolled out](#) a feature in its Health app that allows users to download, store, and share parts of their medical records. In turn, participating providers can send lab test results, medication regimens, and other data directly to a patient's iPhone. More than 300 health care organizations have already come on board, including Cedars-Sinai, Geisinger Health System, Dignity Health, and Johns Hopkins Medicine. At the same time, Apple announced it was teaming up with several EHR vendors—including athenahealth, Cerner, and Epic—to help users view their personal health records on iPhones.

Apple isn't the first company to try to bring health records to mobile devices. Google, Microsoft, and others have tried and failed—at least for now. But Apple has unique advantages. Its Health app is already installed on the phones of [140 million](#) Americans. And it has a strong reputation with consumers for safeguarding the privacy of its users' sensitive data. This commitment is perhaps best summed up in its recent billboard at the CES show in Las Vegas: "What happens on your iPhone stays on your iPhone."

Apple's most important advantage may be its high-profile status as America's leader in consumer technology, which has health systems beating down its door to partner up.

2 Apple wants to help providers monitor their patients' health in new ways.

Soon after Apple released HealthKit, it announced that partners including Duke University School of Medicine and Stanford University Hospital already were using the technology to help chronically ill patients remotely track and manage their symptoms. Those high-profile partnerships soon led to high-profile endorsements. Ricky Bloomfeld, the director of mobile technology strategy at Duke's hospital, said the [platform](#) "worked as seamlessly as we'd hoped."

Apple's future ambitions may be much grander. Its CareKit offers providers tools to connect with patients throughout the care pathway. This could potentially support population health interventions aimed at promoting large-scale behavioral changes, such as improving medication adherence and diet.

3 Apple wants to help researchers recruit hundreds of thousands of study participants—in a snap.

Because so many Apple customers already use the Health app, the company can recruit patients for medical studies rapidly and at a large scale. This dramatically lowers costs for providers, pharmaceutical companies, and medical device manufacturers.

One of the first examples is the [Apple Heart Study](#), currently being conducted in partnership with Stanford Medicine. The study, which recruited more than 400,000 participants via their iPhones, compares Apple Watch's ability to detect atrial fibrillation against standard detection methods. As Alan Yeung, medical director for Stanford Cardiovascular Health, explained: "To get 10,000 people enrolled in a medical study normally, it would take a year and 50 medical centers around the country."

Duke University Health, meanwhile, recently completed a [study](#) using iPhone's facial recognition technology to screen young children for autism and other neurodevelopmental disorders. The app was downloaded more than 10,000 times, and usable data was collected on 88% of the videos that parents uploaded.

But Apple's not partnering with just providers for clinical research. In January, the company announced a multiyear partnership with Johnson & Johnson (J&J). They are running a randomized control trial testing if the combination of the Apple Watch's ECG function with J&J's patient engagement app can detect and diagnose atrial fibrillation in patients over 65 earlier than standard methods. Apple has also partnered with Zimmer Biomet and GlaxoSmithKline to create apps and launch clinical studies to track symptoms and outcomes throughout a patient's care journey. By working with Apple, life science firms could not only improve patient recruitment, but also gain access to extensive health and behavior data. Coupled with other clinical and cost information, these new sources of evidence may help firms accelerate diagnoses, enable more precise treatment planning, and support manufacturers' claims of differentiable value.

Interestingly, it's not yet clear how—or if—Apple will earn money from recruiting study participants. As Tim Cook told [Fortune](#): "We put out ResearchKit and made it a source so that people could run enormous-sized studies...Honestly, we don't make any money on that. But it was something that we thought would be good for society, and so we did it."

4 Apple wants more users to monitor their health via Apple devices (and is convincing health insurers to foot the bill).

The iPhone and Apple Watch are already sophisticated medical tools, offering features ranging from ECGs to fall detection. As such, these tools can help providers enlist their patients in monitoring and improving their health.

Toward that end, Apple has aggressively pitched its consumer technologies to industry stakeholders. Apple is [reportedly](#) in talks with at least three Medicare Advantage plans about providing subsidized Apple Watches to the plans' patients in hopes of detecting atrial fibrillation early. It also signed deals with Aetna and UnitedHealthcare to provide discounted watches to health plan beneficiaries who walk at least 10,000 steps a day.¹

These partnerships are a win-win for Apple. The company sells its products to the plans—and it gains consumers among an older, generally less affluent population that hasn't yet started using Apple Watches in large numbers.

As the iPhone and Apple Watch become increasingly sophisticated, Apple's partnerships could grow even bigger. The company has already provided Apple Watches for studies examining the device's ability to monitor migraines, blood pressure, and adherence to psychiatric care—and even to act as a virtual therapist for arm recovery in stroke patients. And Apple has filed patents suggesting that [future versions](#) of its devices might let users measure their blood pressure, body fat, and heart rate simply by pressing a finger on the screen.

1) Advisory Board is a subsidiary of UnitedHealth Group, the parent company of UnitedHealthcare. All Advisory Board research, expert perspectives, and recommendations remain independent.

5 Apple wants to pioneer a wellness-based approach to employee health care.

Last year, Apple took its first big step into the direct provision of health care by launching its own primary care group, AC Wellness, for Apple employees. The company currently has clinics only in Santa Clara County, California, but it's aggressively ramping up. Recent hires include Sambul Desai, formerly chief of Stanford's Center for Digital Health, and M. Osman Ahktar, former COO of Fairview Health.

Apple isn't alone in venturing into employee health care. The much-ballyhooed Amazon-Berkshire Hathaway-JPMorganChase venture, Haven, may also be exploring primary care offerings. Apple's venture is, in fact, so similar that Cramer, CNBC's "Mad Money" host, recently joked that Apple should join the famous partnership itself.

But Apple may be unique in its emphasis on overall wellness. According to CNBC, many of the doctors that the company has hired have a background in alternative care management or wellness. They've also hired dozens of nutritionists and at least a half dozen non-physician "care navigators," who can direct patients to the most appropriate care setting.

If Apple's approach is successful, it may inspire other large companies to adopt a clinic-based wellness approach. Plus, the clinics could provide Apple with an excellent venue to test, pilot, and iterate on its own pre-market health care products.

Our recommendations

Prepare to connect directly with patients.

Direct connections to consumer data will catalyze patient-centric evidence generation.

Apple is one of the leaders (if not *the* leader) in consumer technology, and its reputation for innovation is unparalleled. Its health ambitions center on applying deep consumer expertise to diverse challenges. Apple's expanding capabilities will help medical affairs leaders change how studies are designed, patients are recruited for trials, and data is collected.

Millions of people use iPhones and Apple Watches every day. And the company's openness to industry partnership signals great opportunities for life sciences. Apple solutions will continue to empower patients to track their outcomes, monitor their treatment, and connect more directly to health care providers. Life sciences firms will systematically partner with Apple to engage patients across the product lifecycle: in clinical development, pre- and post-launch evidence generation, and "beyond-the-pill" education and adherence initiatives.

CMS continues to broaden coverage for remote monitoring, and the FDA is now willing to consider wearable device data in regulatory submissions. Because of these factors, it's time for medical affairs leaders to turn "patient-centric" treatment monitoring and evidence generation into reality.

Questions

to take back to your team

- ▶ If Apple (or other companies) can facilitate large-scale clinical trials, how will your strategies change? What will be the new “gold standard” in study design?
- ▶ What are your top concerns about the clinical accuracy and reliability of studies that use data from wearable devices? How can Apple-enabled solutions address these concerns?
- ▶ What patient outcomes, beyond safety and efficacy, will a company like Apple prioritize if it moves into providing care directly for its employees? (Possible examples: quality of life, patient experience, adherence support.)

This is just one part of an **ongoing series**.

To learn more about what other tech giants are doing in the health care space in the next five years, reach out to us at advisory.com/medaffairs.

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Sources

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