Health care is the next battleground for big tech companies. Amazon, Google, Apple, and Facebook see health care as ripe for disruption—and an industry where they can make positive improvements.

Because of its scale and reach, Amazon could force established pharmaceutical companies, health care systems, and insurers to adapt and evolve.

COVID-19 accelerated the adoption of telemedicine visits, which spurred a new digital transformation effort in health care.

More diagnostic tests are being done at home using connected devices, including smart mirrors and smart toilets.

Last year was a sudden dress rehearsal for widespread remote patient monitoring.

The last few years saw the launch of smart fitness equipment, which includes mirrors, bikes, and treadmills. The pandemic accelerated sales and helped the market grow significantly.

Video games are being developed to treat certain conditions and diseases. Prescription-strength games even carry Food and Drug Administration approval.

Sleep tech is big business: By 2026, the market size could be upward of $30 billion.

This could be the year that Facebook and Apple launch their smart glasses.
Doctorless Exams

KEY INSIGHT
Advancements in diagnostic testing and remote monitoring, supported by cloud computing, machine learning, and low-cost technology, are upending traditional doctor visits. Patient data is triaged by algorithm, rather than human doctors alone.

EXAMPLES
Smartphones and smartwatches now take blood pressure readings and perform electrocardiograms, using apps approved by the Food and Drug Administration. Phones don’t just record data; they interpret it. People who wear an Apple Watch know that an unusually high or low heart rate or irregular rhythm may suggest atrial fibrillation. The VROR system, a VR-based eye exam, emulates an eye doctor’s ultra-widefield imaging machine but within a compact headset. Data is sent to a mobile app for an understanding of a patient’s optic nerve health. Steth IO is a mobile stethoscope that uses a smartphone to capture, decode, and analyze heart sounds. AliveCor is an FDA-cleared wireless personal EKG that connects to a phone. Butterfly iQ is a portable ultrasound device that delivers a 2D image. The ParatusPerio Test analyzes different bacteria and sources of inflammation in a patient’s mouth.

DISRUPTIVE IMPACT
Continual monitoring helps patients know their baseline vital stats and track any changes. This disrupts traditional health care in a few ways. First, with continual monitoring, patients are more likely to intercept an emerging problem in advance and seek out care. For example, some patients will call their doctor for next steps if their smartwatch warns of atrial fibrillation. This reduces strain on emergency departments. It also unlocks new opportunities for health care systems and insurers willing to use such data and to make medical records systems interoperable. Financial forecasting that harnesses real-time data could be algorithmically recalibrated and more accurately assess risk. But connected devices aren’t accessible to everyone, which means a new digital divide could be on the horizon, further reducing health equity in many communities.

EMERGING PLAYERS
- The Clue period tracking app
- Apple Health
- Steth IO
- Healthy.io
- Paratus Diagnostics
- Butterfly Network
- AliveCor
At-Home Medical Laboratory Tests

KEY INSIGHT

The everyday equipment in your bathroom will soon be used to collect biological samples for daily monitoring and testing. You won’t have to worry about making appointments to visit a diagnostic lab—and then wait in lines and wait even longer for results—as a new crop of technologies intends to conduct scans at home.

EXAMPLES

Because toilets are in direct contact with two key sources of data—our skin and our waste—they offer opportunities to analyze our real-time health. Stanford University researchers identified different cancers, liver diseases, and gut disorders using motion and pressure sensors, urinalysis strips, computer vision, and infrared sensors. Toto’s new Wellness Toilet builds on that research by using sensors to analyze “key outputs” and give users insights on hydration and their diets. Kohler’s smart toilet uses Amazon Alexa voice controls. Healthy.io’s Velieve, a urinary tract infection test kit, uses a mobile app to connect patients who have positive results with an online doctor and sends a prescription to a nearby pharmacy if needed. Healthy.io also partnered with the National Kidney Foundation to offer an annual kidney test kit to detect early disease.

DISRUPTIVE IMPACT

COVID-19 accelerated the use of telemedicine in the U.S. and other countries where remote visits were previously restricted. With telemedicine as a new normal, at-home lab tests will increase and disrupt diagnostic companies, such as Labcorp and Quest Diagnostics, and drugstore retailers with clinics, such as Target and CVS.

EMERGING PLAYERS

- Healthy.io
- Toto
- Everlywell
- Imaware
- FoodMarble
- Lumen
- LetsGetChecked
Telemedicine isn’t a new concept. The technology for facilitating and encrypting video consults has been available for years, but it represented a paradigm shift in the traditional doctor visit. COVID-19 forced an overnight change as lockdowns prevented health care providers from seeing patients except in cases of emergency.

Telemedicine had previously been offered only to people in difficult-to-reach locations, such as sparsely populated rural areas or the International Space Station. Medicare restrictions limited remote visits to patients who met certain criteria or forced them to travel to approved centers for the video meetings. But telemedicine has since flourished. A study by nonprofit group FAIR Health showed a 4,347% surge in telemedicine claims in the U.S. between March 2019 and March 2020.

The Centers for Medicare and Medicaid Services also added 80 more services to be delivered remotely and now allow providers to bill at the same rate as in-person visits. Artificial intelligence is part of telehealth’s evolution. Recognition technologies for voice, emotion, gesture, posture, and more can add to a doctor’s evaluation of a patient. AI can already detect whether someone has a cold or is despondent, relative to their normal disposition.

Telemedicine unlocks new opportunities for growth, not to mention easier access to health care and a chance to improve health equity. For example, telemedicine can address the rising challenges of provider workloads, hospital or clinic space, and labor-intensive data entry. Remote visits reduce strain on facilities, while adjacent technologies (automated medical transcription, fitness and health monitoring apps and wearables, at-home diagnostic tests) and machine learning can optimize the speed and scope of data collection. Clinics and hospitals can scale treatment without adding new staff resources and reduce hospital readmission rates by remotely coordinating with home care providers.

Emerging Players
- Eko
- Aluna
- Biofourmis
- Current Health
- Myia Health
- Olive
- Notable Health
- Alpha Health
- Qventus
- Augmedix
- Suki
- CloudMedX
- Corti
- Butterfly Network
- Arterys