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THE MEDICAL FUTURIST**

TOP 100 COMPANIES IN DIGITAL HEALTH

2019



**TOP 100 DIGITAL HEALTH
COMPANIES ADDRESSING
REAL-WORLD NEEDS
2019**

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INTRODUCTION

At the gateway of the transformation of the global healthcare industry by digital technology players, the market is extremely volatile. Start-ups show up, promise to disrupt the entire health scene, but go down just as fast having not received the necessary funding. Others change their profiles, partner with big pharma companies or lose the battle with another start-up providing a better technology. In addition, there is the issue of hype, buzzwords and overmarketing, which calls for careful consideration. In spite of all the challenges, The Medical Futurist team is working tirelessly to stay ahead of the turbulent market changes and bring you the list of the top 100 companies every year.

This year, we posed the question not just what the features are to gain ground on a turbulent market, but what the key is for a company to remain a significant player for a longer time, and we found that if a venture, start-up, or enterprise comes up with a solution that addresses a real-world need, it will definitely find its place on the digital health market for many years. Of course, ‘real-world need’ is a fairly broad category, but it basically means touching upon a patient need or a healthcare issue that has not been solved before in any other way.

‘Real-world needs’ require solutions that put humans in the center of care, which are accessible, sustainable, take into account the diversity of our communities and cater to every special need. That’s why we appreciate the ‘femtech’ revolution, which started to unfold in front of our eyes in the last couple of years, with digital health companies that aim to solve issues that were pushed to the background before. For example, [Bonzun](#) developed a digital midwife, which it aims to bring to developing countries to save the lives of mothers; or [NextGen Jane](#) aims to detect early biomarkers for endometriosis, cervical cancer, or other conditions through blood squeezed out of the tampons that women send back to them.

When looking at accessible solutions, we appreciate the work [SkinVision](#) is doing, which lets users connect to a vast dermatology database as well as real dermatologists via one tap on the phone. Regarding sustainability, there is no better example than [Circulation](#), which enables non-emergency medical transportation via its platform optimizing medical processes. And finally, when looking for companies who cater to special needs, we have to mention [ReWalk Robotics](#), which is developing exoskeletons that enable people with disabilities to use their limbs for walking again; or [Pilleve](#) that wants to help people struggling with opioid abuse through an integrated pill bottle to adhere to their treatment.

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23andme

Genomics



One of the most popular and “oldest” personal genetics companies, established in 2006, offers easy and affordable access to genetic information. Its name comes from the fact that human DNA is organized into 23 pairs of chromosomes. The Mountainview-based 23andme has already built up the biggest database of patients’ DNA information with [more than 2,000,000 genotyped customers and 600 million phenotypic data points!](#)

Originally, the company offered services to tell anyone their likelihood to get certain diseases, as well as information about their family tree, however, in 2014 the FDA restricted 23andme’s operations saying that the health information services were not clear or complete enough for customers. So, the genetic testing company scaled back its activity mostly to provide data about ancestry. They have also [linked together long-lost family members](#) and have built family trees. In April 2017, however, [the FDA re-approved 23andme’s services](#), which aim to tell people which diseases they are susceptible to. They currently have [over 5 million genotyped customers.](#)

Acurable

Digital health device



Headquartered in London, Acurable **has been developing a wearable medical device, the AcuPebble sensor, to diagnose and manage respiratory conditions non-invasively, anywhere, anytime, and as accurately as possible.** The company was founded in 2016 and their product of 10 years of research at Imperial College London won the [XPrize in 2014](#), one of the most prestigious prizes in the medical technology industry.

Their mission is to understand human biosignals so well that nobody dies of a treatable condition ever again. If you place the sensor on the neck of the patient, it records respiratory and cardiac acoustic signals. Then, from those signals the patented signal treatment algorithms extract the main parameters required for the diagnosis and treatment of sleep apnea, epilepsy, asthma, and chronic obstructive pulmonary disease (COPD).

Ada Health

Online platform



It was the fastest growing medical app in Europe in 2017. Over 1.5 million people have already tried the health companion app, which can **assess the user's health based on the indicated symptoms using its vast, A.I.-based database whenever and wherever the user needs.**

Daniel Nathrath, CEO of Ada Health told The Medical Futurist that in the future, *“Ada will become a standard diagnostic tool for doctors. That is already the case; users can share their health assessment with their doctor or, in the UK, they can choose to consult with a qualified GP via our Doctor Chat feature. Ada will also become much more of an ongoing health companion, helping patients and doctors to intelligently monitor health data over the long term to enable predictive and proactive care.”* Moreover, they have experimented with a voice interface and have trialed using Ada through Amazon Alexa.

AdhereTech

Online platform

AdhereTech

The New York-based company creates patented smart pill bottles to measure and improve medication adherence. According to experts, **medication non-adherence means an enormous problem globally. Some estimate that it results in [over 300 billion dollars in annual avoidable costs in the U.S.](#), and AdhereTech aims to address this issue through data analytics.**

The smart pill bottle sends data to the company's HIPAA-compliant system, where the incoming patient data is analyzed. Then the system sends personalized support to the patient's phone – simple reminders, customized messages, or care-based questions. Moreover, AdhereTech's system can be integrated with any given pharmacy's system. So, pharmacists can receive real-time reports about patients struggling with their medication or in need of support.

Aethon

Robotics



Aethon, founded in 2004 and based in Pittsburgh, is best known for its [TUG autonomous mobile delivery robot](#), which can carry around a multitude of racks, carts or bins up to 453 kilograms of medications, laboratory specimens or other sensitive materials. The TUG is sent or requested using a touchscreen interface, and upon completing its “mission”, it returns to the charging dock for a sip of energy while it is loaded for the next job. The TUG makes over 50,000 deliveries each week in over 140 hospitals throughout the United States.

Through transporting huge amounts of health-related materials, **the TUG robots take some burden off the shoulders of nurses and other medical professionals in charge of supplying patient rooms, laboratories and other facilities.**

Aira

Digital health device



The name of the start-up established in 2015 combines Artificial Intelligence (AI), and the ancient Egyptian mythological being known as the Eye of Ra (RA). **Aira offers solutions to the visually impaired to create the possibility for them to live a more independent life. The team uses deep learning algorithms for describing the environment to the user, read out texts, recognize faces or notify about obstacles.**

By using a pair of smart glasses or a phone camera, the system allows an [Aira “agent”](#) to see what the blind person sees in real-time, and then talk them through any situation they have.

AliveCor

Digital health device



AliveCor has [a special meaning to The Medical Futurist](#) since it produced the first digital health device, which we have ever seen and used, the Kardia medical-grade ECG device. The San Francisco-based company was established in 2010 and in a short time it became the provider of the world's leading FDA-cleared mobile heart solution helping save lives, save money and bring healthcare into the 21st century. AliveCor was named as [one of the Top 10 Most Innovative Companies in Health for 2017](#) by Fast Company as part of the publication's annual ranking of the world's Most Innovative Companies.

American Well

Telemedicine

American Well®

The Boston-based telemedicine company established in 2006 offers complete telehealth services to a wide range of customers. The mobile and web service connects doctors with patients through live, on-demand video visits over the internet and handles all the administration, security, and record keeping that modern healthcare requires.

American Well's mission is to improve access to quality care and make it more affordable and transparent for every actor in the healthcare field. The company has been cooperating with [Cleveland Clinic](#), one of the top-ranked hospitals regarding digital health solutions, as its telehealth network vendor [since September of 2014](#).

Antidote

Online platform



Antidote is a digital health company focusing on matching patients and medical researchers so that they could work together more easily. **The platform allows patients to find the most suitable clinical trials, helps researchers stream their latest study information to millions of patients, and even connects patients with members of the medical community directly.** It's basically a very efficient online platform for enhancing the access to clinical trials.

By combining proprietary technologies, data, and well-established business models, the company is transforming the way patients and researchers connect so that breakthroughs happen faster. The company was launched with the name of TrialReach in 2010, but it got rebranded to Antidote in 2016. The company is based in the US and the UK.

appliedVR

Virtual Reality



The start-up born out of a global market research firm, Lieberman Research Worldwide, offers VR solutions worldwide. The company has delivered scientifically designed and validated digital health solutions to over 20,000 patients in more than 250 hospitals and in 8 countries globally. The company's leading **digital wellness platform has been used to impact chronic pain as well as acute pain and anxiety experiences before, after, and during surgery, [child labor](#), oncology infusions, emergency room procedures, and rehabilitation sessions.**

Leading hospitals in VR research and ongoing trials, such as the Cedars-Sinai Medical Center in Los Angeles, the Boston's Children Hospital or UCLA partnered with appliedVR for testing the benefits of the technology.

Arterys

Artificial Intelligence



A R T E R Y S

Where the cloud, artificial intelligence, and medical imaging meet, that's the point of work for Arterys. It promises to "open medical imaging to the power of the cloud." Thus, they partnered with GE Healthcare to reform cardiac MRI through their project called [ViosWorks](#). With the new method, the scanning process takes 6-to-10 minutes instead of an hour, and patients do not need to hold breath during the examination. From the records, Arterys's platform is designed to acquire seven dimensions of data, which include 3D heart anatomy, blood flow rate, and blood flow direction.

The pioneering start-up [built the first deep learning algorithm for cardiac imaging, approved by the FDA in 2017](#), and its solution is able to [spot cancerous lesions in liver and lungs](#) on CT and MR images.

Atlas Biomed

Genomics



The London-based, personalized health company was founded in 2016. It applies the latest genetic technologies, such as **analyzing microbiome and DNA, to power their consumers with accurate data about their body to inspire them into a positive lifestyle change.**

Atlas Biomed offers two tests to consumers: DNA and gut microbiome tests with integrated analysis on the company's health platform. This allows users to understand their health risks and show them how to improve their well-being with tailored recommendations for food, exercise and lifestyle. It is the only company worldwide to offer both tests directly to consumers.

Atomwise

Artificial Intelligence



It aims to reduce the costs of drug development by using supercomputers to predict from a database of molecular structures, which potential medicines will work.

In 2015, Atomwise launched a virtual search for safe, existing drugs that could be redesigned to treat the Ebola virus. They found two drugs predicted by the company's AI technology which may significantly reduce Ebola infectivity. This analysis, which typically would have taken months, was completed in less than one day! Imagine how efficient drug creation would be if such clinical trials could be run at the "ground zero" level of healthcare, namely in pharmacies. Traditional pharma companies also realized the potential of Atomwise. In January 2019, the company [announced a multi-year agreement](#) with [Eli Lilly and Company](#) to apply Atomwise's patented A.I. technology in support of Lilly's preclinical drug discovery efforts.

Ava Health

Digital health device



The Switzerland-based company **developed Ava for women who want to know more about their bodies: observe their menstruation or ovulation cycles or follow their pregnancies with the help of digital technology.** Via logging symptoms as well as data with the help of a wristband and the accompanying app, users can identify changes that may indicate potential health issues, while they can also get a clearer picture and a more accurate prediction when they are likely to be most fertile – not matter whether they try to get pregnant or avoid that situation.

The Medical Futurist tested the device [here](#) and had an overall positive experience. It was not easy to incorporate the device into the daily bedtime routine, but after the learning period, the wearable worked as promised.

Babylon Health

Telemedicine



The British subscription, online medical consultation and health service, Babylon Health, founded in 2013, **offers medical consultation based on personal medical history, artificial intelligence-powered medical knowledge as well as live video consultation with a real doctor whenever and wherever a patient needs it.**

In the first case, [users report the symptoms of their illness to the app](#), which checks these against a database of diseases using speech recognition, and then offers an appropriate course of action. In the second case, doctors listen and look carefully to diagnose the patient and then write prescriptions or refer to a specialist if required. So far, Babylon has partnerships with Tencent, TELUS and Samsung; and they offer end-to-end clinical services in the UK, [Rwanda](#), and Canada.

Bay Labs

Artificial Intelligence



The start-up launched in 2016 [uses deep learning to help medical professionals in developing countries](#) interpret ultrasounds so they can better treat heart disease.

In September 2016, [Bay Labs and some collaborators took the technology to Africa](#) to help identify symptoms of Rheumatic Heart Disease (RHD) in Kenyan school children. The Bay Labs software analyzed data derived from ultrasound to take an educated guess as to whether it sees something consistent with RHD. During the trip, medical professionals scanned 1200 children in four days and were able to spot 48 children with RHD or congenital heart disease.

[behold.AI](#)

Artificial intelligence

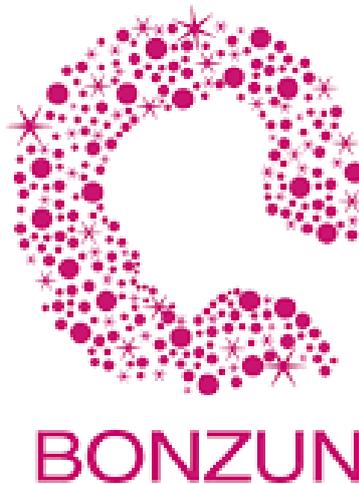
behold.ai

Founded in 2017 and headquartered in London, **behold.AI** uses **state-of-the-art artificial intelligence technologies to help radiologists diagnose radiology scans** across all modalities. Their algorithm called ‘red dot’ analyses and highlights abnormalities in images with high speed and more than 90 percent accuracy. The platform has been developed from over 30,000 images, all of which have been reviewed by UK-certified Consultant Radiologists.

The company works closely with the NHS in the UK to help tackle the ever-increasing workload crisis facing radiology departments every day.

Bonzun

Online platform



Bonnie Roupé developed pre-eclampsia when she was pregnant with her second child. She didn't understand the symptoms but was eager to know more. Thus, after her pregnancy, [she developed an app that would inform pregnant women of potential health problems they could experience.](#)

Bonzun, founded in 2012, works as a virtual midwife, supplying users with information about how their baby is growing, and what the changes in their body mean. The app has been downloaded over two million times in 79 countries so far. In the coming month, Bonnie and her team are working to bring the app to developing countries, for example, Ethiopia, Somalia or India through setting up a foundation. She told The Medical Futurist that having met the founder of several maternal hospitals in Somaliland, she found out that with the help of Bonzun, in one of the hospitals 59 women could have been saved out of the 79 that died that year.

Butterfly Network

Digital health device



Jonathan Rothberg established his start-up, the Butterfly Network in 2011 **with the goal to create a new handheld medical imaging device that can [make both MRI and ultrasounds cheaper and more efficient](#). His ultimate aim is to automate much of the medical imaging process.** The bold entrepreneur has already sold two DNA-sequencing companies.

The company's cutting-edge product, Butterfly iQ is an innovative whole-body ultrasound app that's CE-approved and FDA-cleared. When coupled with a supported device, it enables mobile ultrasounds anywhere. [Simple enough to be operated by laypeople but advanced enough to use augmented reality and machine learning](#) to guide users along the way.

CELLINK

3D-printing

The logo for CELLINK, featuring the word "CELLINK" in a bold, blue, sans-serif font. The letters are thick and have a modern, rounded appearance. A registered trademark symbol (®) is located at the top right of the letter "K".

The US-based company **develops bioprinting technologies to 3D print human tissues for testing pharmaceutical and cosmetic products. They aim for providing ready-to-print or use models for researchers and healthcare providers to enable 3D cell culture, personalized medicine, and enhanced therapeutics.**

CELLINK's patent pending bioink is a biomaterial innovation that enables human cells to grow and thrive such as they would do in the natural human body environment. The disruptive technology is used to print tissues such as liver, cartilage, skin, and even fully functional cancer tumors that can then be used to develop new cancer treatments. They are present in over 40 countries, such as the US, UK, Germany, Australia, or Japan. Their most popular products are skin constructs, and drug screening models.

Circulation

Medical transportation



It is an uplifting story how Circulation, the transportation app for non-emergency rides to medical facilities, was founded. [Dr. John Brownstein](#), Chief Innovation Officer at Boston Children's Hospital, came up with the idea that Uber could be used to fill gaps in patient transportation in late 2013. Brownstein left a comment in the app after a ride, and Uber called him back. Three years later, he co-founded Circulation in Boston.

The transportation app enables patients across the United States to conveniently manage their doctor's appointments without worrying about bus schedules, parking troubles, etc. Since then, the start-up has established 70 partners in 46 states and facilitates transportation to over 1,500 clinical locations across the US. They [partnered with Uber in 2016](#), and [Lyft in 2017](#), as well as local transportation providers such as wheelchair van fleets.

CliniCloud

Digital health device



The company's founders, Dr. Hon Weng Chong and Dr. Andrew Lin, prototyped the first CliniCloud digital stethoscope in 2012 winning the Microsoft Imagine Cup and featured in news outlets around the world. Since then, they have built their successful start-up in Melbourne, Australia.

Moreover, **CliniCloud has built one of the most excellent digital health devices on the market at the moment. It is small, straightforward, portable and smart.** It lets patients and doctors measure heart rate, as well as record heart and lung sounds saving it automatically to the app. The Medical Futurist reviewed it in details [here](#).

CloudMedX Health

Artificial Intelligence



The start-up deep in the heart of Silicon Valley focuses on optimizing patient and financial outcomes through predictive analytics. ‘We are putting physicians back in the seat as physicians as opposed to data entry personnel,’ said Co-Founder & CEO, Tashfeen Suleman to [Bloomberg](#).

CloudMedX utilizes evidence-based algorithms, machine learning, and natural language processing to generate real-time clinical insights at all points of care to improve patient outcomes. It can be integrated into the EHRs and help doctors automate their daily workflows around identification of risk, care planning, and revenue cycle management.

Corti.AI

Artificial Intelligence

Corti

In the heart of Copenhagen, **Corti is developing an artificial intelligence solution that helps save lives in medical crisis situations.** When an emergency dispatcher answers a phone call, the digital assistant listens in, analyses signals in verbal communication as well as the tone of voice, breathing patterns, and other metadata, then it delivers recommendations and alerts to the dispatcher. All the data are sent through layers of deep neural networks in real-time as the conversation proceeds, and the medical agent ends up with clear advice from Corti.

Copenhagen EMS implemented Corti on their official emergency number to detect cardiac arrest cases faster and more accurately. In 2018, the EENA (European Emergency Number Association) announced its [partnership with Corti](#).

Cyberdyne

Robotics



The Japanese firm was established by Yoshiyuki Sankai to materialize his idea to utilize Robot Suit HAL “for the benefits of humankind in the field of medicine, caregiving, welfare, labor, heavy works or entertainment.”

Cyberdyne, established in 2004, developed its HAL robot suit to augment human capabilities – in support of caregiving and working with heavy loads in factories. So the company has nothing to do with Cyberdyne Systems from the Terminator movie series, nor has anything in common with Space Odyssey’s HAL 9000 AI program, which had not exactly the welfare of humanity in its artificial mind.

Dante Labs

Genomics



The mission of the biotech company based in New York and Italy is to make genetic testing available to anyone. The team works with leading genetic labs in the United States, Europe, and Asia; and partnered with Harvard University, Amazon, the Global Alliance for Genomics & Health, or Privacy Shield Framework. Their technology is based on next generation sequencing (NGS), for which [Illumina](#) provides the appropriate technology.

Dante Labs offers whole genome and whole exome sequencing, BRCA1 and BRCA2 testing for breast and ovarian cancer, non-invasive pre-natal testing, longevity DNA testing and they also have a direct-to-consumer test for common hereditary cancers. The Medical Futurist tested their whole genome sequencing services [here](#).

Deep Genomics

Genomics



Brendan Frey's company promises to solve the biggest puzzle in genetics. **To get to know exactly what information the genome could provide for patients, medical professionals, and researchers. For doing so, Deep Genomics is [leveraging AI, specifically deep learning to help decode the meaning of the genome.](#)**

So far, the company has used their computational system to [develop a database that provides predictions](#) for more than 300 million genetic variations could affect a genetic code. For this reason, their findings are used for genome-based therapeutic development, molecular diagnostics, targeting biomarker discovery and assessing risks for genetic disorders.

Dexcom

Digital health device



The San Diego-based venture has been developing continuous glucose sensing technologies for years. Dexcom's roots stem from the pioneering 1967 research on implanted glucose sensors at the University of Wisconsin. The company, established in 1999, started with a focus on creating an implantable sensor that the body would not reject and that would perform for an extended period.

Its latest system, the Dexcom G6 does not require any fingerpricks or a blood draw, and it was [approved by the FDA in March 2018](#). Similar to other continuous glucose monitoring systems, it allows diabetics to see their blood sugar throughout the day and night with a sensor that is inserted under the skin. **The overall aim is to develop the ultimate artificial pancreas: delivering insulin in the needed amount according to the appropriate intervals automatically and without the need of any intervention – such as a fingerprick.**

D-Eye Care

Digital health device



Founded in 2015 in Padova Italy, the company has developed the first modern day smartphone-based digital ophthalmoscope. The company's first product, the [D-EYE Retinal Screening System](#) enables clinicians and organizations to perform mass health screenings and data collection to improve vital health examination services.

Known as the “digital eye” into the state of the human body, the smartphone based D-EYE lens and on-board application allow anyone with minimal training to screen patients eyes for various health issues including glaucoma, diabetic retinopathy and macular degeneration; three serious pathologies causing blindness of millions of people annually.

Doc.AI

Blockchain in healthcare



The Palo Alto-based start-up was founded by the entrepreneurial duo Walter and Sam De Brouwer in 2016. **Doc.AI visualizes a (near) future that is consumer-controlled, blockchain-based, AI-powered and centered around all kinds of biological data, including genome or microbiome.**

The platform generates insights from medical data, and it's using natural language processing as well as computer vision, while securing data through blockchain technology. Anyone can launch a „data trial” – a collection of health data on the platform for a particular cause or generally, then data scientists are tasked to connect the data dots and make predictive models. As a result, each will get insight into their own data, which they can take to the doctor.

EKO

Digital health device

Eko

Eko, established in 2014 and working in Berkeley, California, is **building the future of cardiovascular care through a platform of non-invasive devices and revolutionary algorithms.**

It offers two types of products, the CORE, and the DUO. The latter combines ECG and digital stethoscope technology into a portable, handheld device for insight into cardiac function. The [Eko Core is an innovative digital stethoscope](#), which provides smart measurements: records heart, lung, and other sounds. With the Eko Core, medical professionals are also able to save, process, and share sound data using their mobile devices.

Ekso Bionics

Robotics



The Northern California-based company is **a pioneer in the field of robotic exoskeletons for over ten years. The venture's exoskeletons are used by individuals with various degrees of paralysis and stemming from a variety of causes.**

In 2016, Ekso Bionics first received FDA-clearance for an exoskeleton to use with stroke and spinal cord injury levels to C7. These remarkable products have helped individuals take more than 70 million steps since the establishment of the company that would not have been possible otherwise. Currently, Ekso Bionics' exoskeletons are utilized in over 130 rehabilitation centers across the world.

Elvie

Digital health device

elvie

The UK-based company, Elvie, has been developing solutions for women since 2013. Beyond creating a silent breast pump, **they built a Kegel trainer to strengthen the pelvic floor muscles via fun, five-minute workouts. Keeping these muscles strong gives us control over the bladder and bowel, and it averts urine leakage or incontinence.**

Before anyone would say that this is truly a niche problem, we would like to direct your attention to the [striking global statistics](#). 303 million women and 121 million men suffer from the condition, but the issue remains largely uncovered by meaningful (technological) solutions. Currently, that seems to be changing with the preventive tool called Elvie.

Empatica

Digital health device



Empatica, headquartered in Milan, Italy and founded in 2011, **has been focusing on the development of wearable devices making the lives of patients with neurological conditions better.** At the moment, the company is producing two wearables aimed at supporting the neurological research market and helping people living with epilepsy.

Their first device, Embrace has become the world's first FDA-approved smartwatch for use in neurology, specifically designed for people with epilepsy. The technology comprises of a wristband, a software called Alert App, as well as a Seizure Diary, running on smartphone and desktop computing, plus real time syncing with a cloud computing service.

Enlitic

Artificial Intelligence



The pioneering, cutting-edge company uses deep learning in certain forms of image recognition to harvest data stemming from radiology images and applies the results in unique medical cases.

Enlitic's technology can interpret a medical image in milliseconds - up to 10,000 times faster than the average radiologist -, and can detect tiny fractures as small as 0.01 percent of an X-ray image. In addition, [in June 2016, The Economist reported](#) that in a test against three expert human radiologists working together, Enlitic's system was 50 percent better at classifying malignant tumors and had a false-negative rate (where cancer is missed) of zero, compared with 7 percent for the humans.

EyeQue

Digital health device



The company was founded in 2015 **on a quest to develop optical smartphone attachments and mobile applications that let people test their own vision anywhere** – without the need to go to an ophthalmologist and sit in front of room-sized ophthalmic refractometers.

The Newark-based [EyeQue has an MIT patented technology](#) based on instruments and charts used in vision testing for years. They offer two products enabling low-cost and accessible eye tests for everyone. [The Personal Vision Tracker](#) measures an individual's refractive status, including near-or-farsightedness and astigmatism, while the [EyeQue Insight](#) determines visual acuity or the sharpness of vision. The Medical Futurist tested the latter [here](#).

Fabrx

3D printing



Scientists from the University Colleges of London, among others Abdul Basit and Simon Gaisford, saw a [massive potential in 3D printing for medicine and pharma](#); thus they established the specialist biotech company, FabRx, in 2014 in the UK. **It is a rapidly growing business that is developing printed medication and drug-loaded medical devices. The team believes it will be able to commercialize printed tablets within the next 5-10 years.**

In June 2015, the [Daily Mail reported](#) about their experiments with 3D printing drugs in odd shapes, such as dinosaurs or octopuses to make it easier for kids to take pills. In January 2019, FabRx [has successfully been awarded funding](#) from Innovate UK, the UK's innovation agency, to develop the world's first 3D printer for the production of personalised medicines.

Firsthand Technology

Virtual Reality



According to [studies enlisted by Firsthand Technology](#), VR reduces the time of thinking about pain by 48 percent. **The San Francisco-based company has been a part of pioneering research teams that have established the field of VR pain control and helped build the first VR pain relief application, SnowWorld.**

Firsthand Technology offers affordable and practical VR hardware kits and the corresponding software, Cool! and Glow! The first one follows you on a journey through a beautiful landscape of changing seasons, while the second lets you draw light creatures with your hands.

Fitbit

Digital health device



The San Francisco-based company **established in 2007 created one of the best-known brands on the market of fitness trackers and wearables**. Its founders realized that sensors and wireless technology had advanced to a point where they could bring amazing experiences to fitness and health. Its [Fitbit Surge](#), this touch-screen wristwatch not only tracks your steps and sleep but also alerts you to incoming phone calls and text messages, keeps tabs on your heart rate with a built-in optical heart rate monitor and uses GPS to track outdoor activity. It [helped The Medical Futurist change lifestyle](#), although our ultimate choice is [Fitbit Ionic](#).

Unfortunately, compared to previous years, the company slid to third on the fitness wearable market behind Apple and Xiaomi last year. [Fitbit expected a 7% sales decline for 2018](#), which is better than the 26% decline in 2017, but it still has to shape up to stay in the race. Its strategy seems to be the expansion of its app universe and its more powerful move into the digital health field. The acquisition of Twine Health, a health coaching platform for chronic disease management, and later [the launch of Fitbit Care](#), show exactly that.

Focus Games

Games



The UK-based company was founded in 2004 by Melvin Bell and Andy Yeoman, who had backgrounds in business management and consulting. They knew how business worked but knew almost nothing about games. From then on, Focus Games grew into a skilled team of 10 people with offices in London and Glasgow.

For example, in collaboration with [NHS Scotland, they developed the board game, Hospital Life](#), to make a group of hospital workers, employees of a department sit down together and talk about the operational processes of a medical facility. The [UK Sepsis Trust and NHS England decided help create The Sepsis board game](#) to facilitate the treatment and the diagnosis of this serious condition. **[Gamification in the framework of board games help medical professionals become better team players](#)** and facilitate cooperation in hospitals.

Futura Genetics

Genetic testing



The Israel-based company established in 2014 offers a DNA test on predisposition for 28 common diseases such as lung cancer, lupus, melanoma, migraine, Alzheimer’s disease, breast or bladder cancer. No matter, in which part of the world you live, you can order their services online and they transport the test kit anywhere.

The team of their experts selects the most appropriate genetic markers for each disease, based on their experience. The Medical Futurist [reviewed the company’s test](#) and Futura Genetics found that Dr. Meskó has a higher risk for melanoma and basal cell carcinoma.

GestureTek Health

Virtual Reality



The Canadian company founded in 1986 invented video gesture control technology that was part of the origins of the VR field. GestureTek also established a division in healthcare, GestureTek Health in the mid-1990s, when the company first started developing applications specific to health, disability and rehabilitation.

Its VR exercise programs enable patients to have fun while stretching their physical and cognitive capabilities. It is especially important in the case of small children, who would rather participate in rehabilitation if it is engaging, achievement-oriented, such as [Gestrack 3D](#) or any of its multi-touch solutions.

Ginger.io

Telemedicine

The logo for Ginger.io, featuring the word "Ginger.io" in a light blue, rounded sans-serif font.

Ginger.io is a mental health care provider that combines smartphone data and human connection to offer personalized, comprehensive and needs-based care. Founded in 2011 as a [spinoff from the MIT Media Lab](#) and based in San Francisco, the company's mission is to increase access to high quality behavioral healthcare by powering their team of expert coaches, therapists and psychiatrists with machine learning and AI technology.

Since then, Ginger has collected billions of data points that now power the world's most advanced behavioral health system, empowering a team of high-quality coaches, therapists and psychiatrists. In addition, the team validated their A.I. engine by partnering with 40 leading healthcare organizations and nearly a million consumers.

Google DeepMind Health

Artificial Intelligence



DeepMind was founded in London in 2010, and Google acquired the leading British artificial intelligence start-up four years later. As part of the search giant's umbrella group, Alphabet, **Google DeepMind Health mines medical records to provide better and faster health services. Algorithms powered by Google DeepMind can process hundreds of thousands of medical information within minutes.**

Since July 2016, Google has been [collaborating with the Moorfields Eye Hospital NHS Foundation Trust](#) to analyze anonymized eye scans, searching for early signs of diseases leading to blindness. Also, the algorithm is able to prioritise those patients in urgent need of care, matching the accuracy of expert doctors with over 20 years' experience. In the future, this triaging process could drastically cut down the time taken between detection and treatment, making it much less likely that these conditions will lead to sight loss.

Habit

Genomics



The California-based start-up focuses on **utilizing the achievements of nutrigenomics. It plans to use genetic markers to identify the ideal meal for each of its customers and send that meal directly to their doors.**

You [only need to send back their required blood sample kit](#), do their so-called “metabolic challenge” and provide a series of body metrics like height, weight, and waist circumference as well as lifestyle habits like how often a person walks, runs, or exercises. All of this analysis leads to a personalized meal plan, which works best for the user’s body.

Headspace

Online platform



The Santa Monica-based Headspace was officially launched in 2010 as an events company, but attendees wanted to take what they learned home with them. Founders, Andy Puddicombe, a Buddhist monk with a meditation consultancy and Rich Pierson, who needed help to de-stress from advertising, and a small team soon made Andy's meditation techniques available online. That's when Headspace was born.

The meditation app is the best choice for anyone who wants to learn how to meditate and how to release stress even during a busy day. The daily guide only takes 10 minutes, helps focus, release anxiety, master meditation. It has hundreds of themed sessions; you can use [reminders or practice your weak points](#).

HeraMED

Digital health device



Israel-based HeraMED has been offering various products since 2011, promising peace of mind for expecting mothers and their family for example by monitoring fetal heart rate. The pocket-sized, dumpling-like HeraBEAT sensor can measure the unborn baby's heart rate and pulse anywhere anytime, which could spare anxious and worried parents' unnecessary hospital visits in cases when the mother doesn't feel the child being "awake". **We tested the health sensor [here](#) and found that it's an uplifting experience to measure a baby's heart rate at home, although there's room for improvement when it comes to user education, for example.**

Technology started to change the experience of pregnancy and being a parent in a meaningful way and HeraBEAT adds to the colorful palette of useful helpers.

Hocoma

Robotics



The Swiss company, established in 1996, develops and manufactures robotic and sensor-based devices for functional movement therapy. It has hubs in the US, Singapore, Slovenia and Chile, and almost 50 partners worldwide.

Hocoma's [therapy solutions support](#) the treatment of neurological patients with movement disorders caused by stroke, spinal cord injury, traumatic brain injury, multiple sclerosis, cerebral palsy or other neurological diseases and injuries as well as low back pain patients. Products include medical devices used for robotic treadmill training of neurological patients and exoskeleton for the rehabilitation of upper extremities after stroke or traumatic brain injury.

IBM Watson

Artificial Intelligence



IBM, one of the market-leading informatics and artificial intelligence companies, developed its question-answering computer system, Watson in the 2000s. By February 2010, it could beat human contestants in the quiz show game called *Jeopardy!* on a regular basis. The company aims to extend Watson's capabilities to many fields, including healthcare.

[IBM Watson Health](#) comprises of a **universe of big data and A.I. – powered solutions, including [Watson for Oncology](#) or [Watson for Genomics](#), aiming to enhance personalized medicine, medical imaging, cut back on administration or help medical facilities better leverage on data.** Although there were news about [the company overhyping Watson Health's capabilities](#), IBM says it is helping create meaningful change in healthcare with over 15,000 clients and partners.

iCarbonX

Artificial Intelligence



The Chinese start-up has the intent of “digitalizing everyone’s life information”; and it has taken in nearly 600 million in funding. Even the biggest Chinese social media app, WeChat lined up among its supporters.

It aims to construct a “digital you” containing biological samples such as saliva, proteins, and DNA; bolstered by environmental measurements such as air quality, and lifestyle factors such as workout regimes and diet. The company is developing algorithms to analyze the data, with the intention of recommending tailor-made wellness programs, food choices and possible prescription medicines.

iDoc24

Telemedicine



The telehealth service provider offers to connect patients to dermatologists in under 24 hours, who then advise anyone what to do after having received a photo about the specific skin problem.

The start-up established in 2014 had already more than 20,000 skin concerns submitted from all over the world from countries such as Sweden, Chile, China, Australia, and Ghana. Their youngest users were 3 days old and the oldest 93 years old. Such dermatology solutions will thrive in the future, since as iDoc24 found that 70 percent of all their reviewed cases could be self-treated and they advised the patient to undertake further tests in all the remaining 30 percent of cases. It is a win-win for everyone: patients do not have to wait in crowded waiting rooms for an exam, while dermatologists can deal with the easier cases in shorter time online.

Imaware

Online platform



A simple and precise home-based blood testing platform developed by [Microdrop](#). The Houston-based company has **the mission to reduce the number of individuals with undiagnosed illness through at-home testing**. They utilize home-based small-volume blood collection, and microarray lab-testing equipment with high sensitivity and specificity, to give consumers actionable reports and insights. Once aware of their conditions, patients can engage their doctors who can diagnose symptoms.

At the moment, patients can choose from two at-home blood tests: one for celiac disease and another for rheumatoid arthritis. In addition, customers can order an at-home monitoring test for celiac disease online.

ImmersiveTouch

Virtual Reality



The start-up offers a **VR imaging platform that allows surgeons to see, feel and experience minimally invasive surgical pathways to improve surgical precision and patient outcomes.** When a surgeon prepares for complex brain surgery, the MRI/CT scans of the patient can be uploaded into ImmersiveTouch's cloud, then reconstructed into 3D VR. Then, the surgeon can rehearse or teach various surgeries, and “get in touch with the patient” since the platform replicates the surgeon's touch and feel of the patient's anatomy. An easier way for doctors and med students to practice their profession before surgeries.

Intouch Health

Robotics



The California-based company is growing exponentially: the InTouch Telehealth Network supports more than 130,000 annual encounters, 11,000 medical professionals, and more than 2,100 patient access locations with an annualized growth rate of 25 percent or one hospital per day.

Through its vast network, patients in remote areas or people not being able to travel have access to high-quality emergency consultations for stroke, cardiovascular, or other medical services exactly when they need it. Moreover, with telehealth, medical professionals in rural towns and remote areas also have access to specialty services, while patients can be treated in their own communities.

Intuitive Surgical

Robotics



The most commonly known surgical robot is the [da Vinci Surgical System](#) introduced by Intuitive Surgical 15 years ago. The company raised \$46 million in an initial public offering in 2000 and the same year, became the first robotic surgical system cleared by the FDA for general laparoscopic surgery.

Since then, da Vinci has been used for more than six million minimally invasive procedures in various surgical specialties by tens of thousands of medical professionals worldwide. The popularity of the surgical robot is not surprising: the surgeon is 100 percent in control of the robotic system at all times and can carry out more precise operations than previously thought possible.

LactApp

Online platform



A stage in motherhood widely covered by digital health technologies is the period of breastfeeding. Going beyond wearables and health sensors, a rich resource of information about lactation and maternity can be even more useful as young mothers tend to become rather anxious during the first couple of months with a baby.

The Barcelona-based [LactApp](#) team has been building a personalized chatbot that answers every breastfeeding question according to your profile and that of your baby. A useful resource for mothers who would like to know as much information about maternity issues as possible to keep their baby happy and healthy.

Liftware

Digital health device



The San Francisco-based start-up founded in 2012 consists of a group of scientists and engineers working to develop new technologies that assist people with hand tremor and limited hand and arm mobility. The start-up joined Google Life Sciences in 2014, which became Verily in 2015.

Liftware developed the Liftware Steady for hand tremor, which stabilizes hand motion, and enables the hand to shake 70 percent less; and the Liftware Level, an assistive device for limited hand and arm mobility. Both smart utensils come with soup as well as fork attachment to broaden the variety of meals.

Lumosity

Games

The Lumosity logo is displayed in a large, teal-colored, lowercase sans-serif font.

Splitting Seeds. Pinball Recall. Assist Ants. Just to name a few of Lumosity's games, also used by more than 85 million people in 182 countries. It includes **more than 60 mini-games designed to train five functions of the brain: speed, memory, attention, flexibility, and problem-solving, in order to keep the user's cognitive abilities on top.**

A randomized study with more than 4,700 participants conducted by the neuroscience research company, Lumos Labs team, said to have found that after 10 weeks, Lumosity improved cognition more than crossword puzzles. However, such claims should be treated carefully – especially after Bay Area-based [Lumosity was fined 2 million dollars in 2016](#) for aggressive advertising.

Maven

Telemedicine



The New York-based Maven Clinic does not only offer traditional medical specialties for women to choose from but also employs back-to-work or sleep coaches, relationship consultants or mental health therapists, providing a holistic approach. They must have realized that it's not enough to treat a condition separately from setting, history or character of a given patient.

The Maven Clinic offers video appointments and private messaging with a widespread family and women's health practitioner network and offers services from pregnancy through postpartum until surrogacy or career coaching.

MC10

Digital health device



The Massachusetts-based company aims to extend human capabilities through virtually invisible and conformal electronics. The venture established in 2008 reshapes rigid, conventional electronics into thin, flexible devices that can stretch, bend and twist seamlessly with the human body and the natural world.

MC10 makes microchips and develops so-called “digital tattoos” that can measure numerous vital signs simultaneously. For example, it produces the [BioStamp Sensor](#), a flexible, soft body-worn health sensor that naturally conforms to the contours of the human body able to capture a swarm of health data and vital signs.

Medical Realities

Virtual Reality



For the first time in the history of medicine, [on 14 April 2016, Shafi Ahmed cancer surgeon performed an operation using a virtual reality camera at the Royal London hospital](#). Everyone could participate in the operation in real time through the [Medical Realities website](#) and the [VR in OR](#) app. Over 55,000 people watched the livestream. In April 2017, the Medical Realities Platform launched with its first module.

By now, the innovative company offers medical training products, specializing in VR, AR, and serious games. By using consumer-level virtual reality devices such as the Oculus Rift, **Medical Realities can reduce the cost of training, reach a wider audience and provide a completely safe learning environment for medical students.**

Medtronic

Digital health device



Today, Medtronic is the world's largest medical technology company with more than 260 locations in 155 countries, but it was not always like this. It was founded in 1949 as one single medical equipment repair shop. Over the years, they have developed cardiac pacemakers, implantable mechanical devices, drug and biologic delivery devices, and powered and advanced energy surgical instruments; being able to treat nearly 40 medical conditions.

For over 25 years, [Medtronic](#) has been helping people with diabetes; and with [its latest, hybrid closed-loop system](#) it seems even to get a step closer to build its own artificial pancreas. Later on, the [FDA extended its approval of the MiniMed 670G](#) for glucose measurement and insulin delivery to include children with type 1 diabetes.

Misfit Wearables

Digital health device



The company's smartwatches, fitness trackers, apps, and accessories state their mission unambiguously. **The Silicon Valley venture, established in 2011, aims to combine elegance, intelligence, and wellness.** Misfit's flagship product is the Shine, an elegant personal activity tracker that you can instantly sync with your smartphone just by placing the device on the screen.

Moreover, the Misfit Shine 2 is great for swimming: it tracks laps and swim distance, steps, calories, but it also monitors sleep patterns so that users can have a light and restful sleep while at the same time it is stylish and perfectly designed for every occasion.

Muse

Digital health device



The company behind the brain sensing headband, Muse, is the Canadian InteraXon. [One of the founders, Ariel Garten](#), is the perfect example of how an interdisciplinary background of neuroscience, fashion design, and psychotherapy can help develop innovative solutions. After launching a clothing line in high school, she worked in the science [lab of Professor Steve Mann](#), pioneer of cybernetics and wearable computers. There, Garten and her colleagues got the idea of using brain activity to trigger musical playback. Not long after, InteraXon was born.

Their headband helps you get the most out of your meditation practice by giving you real-time biofeedback about what is going on in your mind. You put the Muse headset on, you complete the breathing exercises to the sound of waves (neutral), storms (bad) and tweeting birds (good) which indicate how focused and calm you are. If your mind is too active, the Muse gives you feedback to help you clear your thoughts. The Medical Futurist tested the headband [here](#).

MyDNA

Genetic testing



The Australian genetics company previously known as GenesFX was founded in 2007 by Leslie Sheffield, who has been researching pharmacogenomics since the 1980s. [Pharmacogenomics](#) is the study of variability in drug response due to genetic code. It argues that despite general sentiments, medications do not have the same effect on people.

MyDNA aims to leverage on the achievements of pharmacogenomics. **The company's medication test promises to help you and your doctor personalize your treatment by selecting the most appropriate medications based on how your body metabolizes drugs, and the doses that might work best for you.** Anyone is able to [order a test online](#) for \$149, which was tested by The Medical Futurist [here](#).

MySense

Artificial Intelligence



Based in London and founded in 2016, the MySense team created a health analytics platform to offer peace of mind for individual patients. **It monitors an individual's health, well-being and behaviour patterns, establishes what 'being well' looks like and flags subtle changes - providing fast response and reassurance about their health status for patients, their family, friends and carers.**

The discreet digital monitoring technologies not only allow the MySense team to understand the patient's emergency needs (in the same way that traditional telecare services do) but also to pre-empt some of the care needs and help make decisions about safety and well-being.

mySugr

Online platform



The Vienna-based start-up was founded in 2012, and within a couple of years, it has become a market leader and a trusted voice in the diabetes digital health space. **They specialize in app-based, all-around care for people with diabetes. The apps and services presenting the best examples of gamification are mutually compatible solutions to ease the daily grind of diabetes.** The start-up already received several awards, e.g., in 2016, the mySugr app was [selected as a top diabetes app by Healthline](#).

The venture was [acquired by the global pharmaceutical company, Roche](#) during summer 2017. While the start-up itself remained a separate legal entity, its app became an integral part of Roche's new patient-centered digital health services platform in diabetes care.

Natural Cycles

Digital health device



Natural Cycles

What sets Natural Cycles apart from all the other birth control apps on the market is that it's CE-marked and cleared as a medical device by the FDA based on [clinical studies](#). Although last January, there was an [uptake in criticism](#) towards the method, the app [has been reviewed by ORCHA](#), an independent health app evaluation body, scoring 84 percent. The company, which originally started in Switzerland, currently has its headquarters in Sweden. It has grown into an enterprise with around 80 employees.

Kraker von Schwarzenfeld, VP Science and Communication at Natural Cycles told The Medical Futurist that **women are welcoming a contraceptive option that educates them about their fertility and unique cycles, while also providing relevant information to help them avoid (or plan) pregnancy.**

Natural Machines

Future of food



The Barcelona-based company received widespread attention with its Foodini project when the first articles were published about printing out food at home. **CMO & Co-founder of Natural Machines, Lynette Kucsma told The Medical Futurist that the plan is to print food using fresh ingredients instead of creating artificial food.**

The consumer places fresh ingredients in the Foodini 3D food printer, and then the machine prints all types of real, fresh, nutritious meals, from savory to sweet. According to the mission of Natural Machines, they aim to make the preparation of food healthier, more comfortable, and more fun.

NextGen Jane

Genomics



The data-driven company from the San Francisco Bay Area was founded five years ago and focuses on utilizing data for women's health. NextGen Jane is planning to mail kits to women with a tampon they can send back and have analyzed. They plan to launch their first product next year.

The Oakland-based start-up promises to get insights into female reproductive health through blood squeezed out of the tampons that women send them and detect early biomarkers for endometriosis, cervical cancer or other conditions with the help of their Smart Tampon platform serving as a sentinel system. It is refreshing to see a company going beyond the traditional women's health issues, such as fertility and menstruation and dealing with such a painful and burdening medical issue as endometriosis.

Nima

Digital health device



Nima co-founders Shireen Yates and Scott Sundvor have long struggled with various food allergies, so after meeting at MIT in 2013, **they decided to build a company for bringing peace of mind to people with food sensitivities, such as gluten or peanut allergy, when eating out.** They started to market their Nima gluten-sensor in 2016, which was named [one of Time Magazine's 25 best inventions of 2015](#). The portable device can tell you from a small food sample within two minutes whether your food contains gluten. The Medical Futurist team tested the device [here](#) and we were over the Moon about the results.

The firm applies its technology to detect other food allergens, too: they already released a sensor for peanut in late 2017. We [had the chance to test this handy device, too](#), and had similar experience as in the case of the gluten sensor: technological sublime.

Not Impossible Labs

3D printing

not impossible

Not Impossible Labs is a community of innovators creating life-changing devices and delivering inspiring content that compels action. **They aim to change the story of healthcare by providing open-source, DIY solutions that essentially help people exactly where they need it.**

For example, the company, established in 2013 and based in Venice, California [took 3D printers to Sudan](#) where the chaos of war has left many people with amputated limbs. The organization's founder, Mick Ebeling, trained locals how to operate the machinery, create patient-specific limbs, and fit these new, very inexpensive prosthetics.

Omada Health

Gamification



The Silicon Valley start-up established in 2011 aims to bring the best in design and web technology to health care delivery. Omada's team is an interdisciplinary group of technologists, entrepreneurs, and clinicians from Google, Amazon, IDEO, Harvard, Stanford, and Columbia who are passionate about creating accessible and entertaining technology to prevent disease.

Omada uses behavior science to help people change their habits, improve their health and reduce their risk of chronic diseases, such as type 2 diabetes through creating solutions that aim to trigger behavior change with great design and robust scientific background.

Omron

Digital health device

The Omron logo is displayed in a large, bold, blue, sans-serif font. The letters are thick and closely spaced, with a clean, modern aesthetic.

The Japanese tech company has been developing digital thermometers, blood pressure monitors and nebulizers for years. **It's basically the largest manufacturer of blood pressure machines. It provides a swarm of blood pressure monitors with apps that make data available and interpretable to patients too.** It also introduced the [Omron Heartguide smartwatch](#) that does medical-grade measurements and night readings for hypertension and to measure the risk of stroke while sleeping.

Oncompass

Genomics



The Swiss company offers oncological biopsy analysis and decision support services in Central and Eastern Europe to provide better-personalized treatment plans for each cancer patient. They already performed molecular diagnostics for more than 7500 cancer patients. Their database now contains more than 500 targeted drugs associated with relevant cancer driver genes and their targets. 58 pills are registered; others are in the clinical development phase.

In the case of targeted therapies, Oncompass searches publicly available databases of scientifically approved clinical trials. If a potentially matching clinical trial is found, the patients are referred to the clinical trial center.

Organovo

3D printing



The San Diego-based company is focusing on the technology of 3D printing biomaterials. They announced that they bio-printed liver tissues successfully in 2014, and then they seemed to be 4-6 years away from printing liver parts for transplantation. Moreover, these bio-printed livers could also be used in the pharmaceutical industry to replace animal models for analyzing the toxicity of new drugs.

In 2016, Organovo launched its second commercial product, bio-printed human kidney tissue. In December 2016, [Keith Murphy, CEO announced](#) that the company expects triple-digit percentages in growth for years to come by driving the adoption of bio-printing.

Oscar Health

Health insurance

The logo for Oscar Health, featuring the word "oscar" in a bold, blue, lowercase sans-serif font.

Oscar is a New York-based health insurance company that has employed technology, design, and data to humanize healthcare since 2013. Its user-friendly website allows subscribers to track and manage medical bills, while Oscar collects data from customers' visits with doctors and analyzes the results and how much they cost.

Moreover, their patients in the US [get Amazon gift cards as rewards](#) for achieving their daily goals as measured by Fitbit wearables. As a great success for the innovative health insurance start-up, [in June 2017 Cleveland Clinic and Oscar announced](#) they are teaming up on a new health plan.

Osso VR

Virtual Reality



The start-up is working on utilizing the power of VR in the field of orthopedic surgeries and at the same time trying to improve the method of surgical training. The [technology allows users to simulate assembling and placing a tibial nail.](#)

Users put on a VR headset (the software is currently compatible with Oculus Rift and HTC Vive) that displays a virtual operating room, and hold two controllers that track 1:1 with real-life hand movements and respond to these movements with haptic feedback that mimics the feeling of assembling and placing the nail.

Patients Like Me

Online platform



One of the biggest online patient platforms started with one patient, and one family's experience with a life-changing condition. When [Stephen Heywood was diagnosed with ALS in 1998 at the age of 29](#), his brothers Jamie and Ben got to work, trying anything they could to slow Stephen's disease progression. In the process, they launched PatientsLikeMe to connect ALS patients.

However, the network quickly expanded, and since 2011, **they have been welcoming any person living with any condition to connect with others, learn and take control of their health.** Today, PatientsLikeMe connects more than 650,000 people living with 2,900 conditions. Together they have generated more than 43 million data points, creating an unprecedented source of real-world evidence and opportunities for continuous learning.

Philips Healthcare

Digital health device

PHILIPS Healthcare

Philips Healthcare provides healthcare solutions for diagnostic, treatment, and preventive care. **The company's product portfolio includes CT scanners, ECG equipment, mammography and monitoring equipment, MRI scanners, radiography, resuscitation, ultrasound instruments, molecular imaging devices, X-ray equipment, and more.**

Philips Healthcare has focused their research and development efforts to develop new approaches in the areas of radiology, cardiology, oncology, decision support, home health, respiratory and other critical areas. However, their innovations have achieved ambivalent results so far. The Medical Futurist tested the [Philips SmartSleep headband](#), which rather proved to be a flop, but we also reviewed the [Philips Lumify Portable Ultrasound](#), which raised the bar significantly in portable diagnostics.

Pilleve

Online platform



Founded in 2017, **the Washington-based Pilleve team has created an integrated pill bottle that helps care providers identify high risk patients on opioids in real time.** The company has a personal story behind it: the founder of Pilleve, Yossuf Albanawi [shared with Hypepotamus](#) that as a teenager he struggled with substance abuse but, thanks to his mother, he received an early intervention that led to his recovery and sobriety.

While working at a rehab center, he had the idea of how to help double down on the concept of early intervention and identify those high-risk patients before it becomes an issue. Pilleve's pill bottle tracks patient behavior while they're taking opioids to make sure the prescriptions are taken correctly.

Propeller Health

Digital health device



Propeller Health, founded in 2007, **has been building a mobile platform that offers sensors, mobile apps, analytics, and services to support respiratory health management.** The HIPAA compliant platform stores users' data in a cloud computing infrastructure.

The Propeller sensor and mobile application help users learn more about and better manage their asthma, COPD, and respiratory disease. The medical device attaches to users' inhalers and wirelessly syncs with their smartphones. It tracks their triggers and symptoms and sends personalized feedback to their phones based on those symptoms. Users can see how often they use the medication, and set up medication reminders and alerts.

Psious

Virtual Reality



The Spanish and American behavioral health technology company, Psious offers novel treatment for psychological conditions such as fear of flying, needles, various animals, public speaking, general anxiety or agoraphobia.

With the help of VR, patients get into situations which are fearful for them under the constant control of a physician. Their task is to face their fears and gradually let them go, while VR helps their imagination. Until now, the results have been more than encouraging!

RDMD

Artificial intelligence

The logo for rd.md is displayed in a large, blue, lowercase sans-serif font. The letters 'rd' are followed by a period and then 'md'. The font is clean and modern.

The San Francisco Bay Area-based company, founded in 2017, is dedicated to accelerating treatments for patients with rare diseases. RDMD has developed a technology platform that generates deep data insights to enhance rare disease research and drug development, as well as a patient application that empowers patients and families to get access to and benefit from their own medical data.

The company is [basically trying to solve the problem](#) by using **A.I. to analyze data from medical records to find commonalities in rare disease cases. The company then sells that data to pharmaceutical companies so they can create cutting-edge treatments.**

Rewalk Robotics

Robotics // Prosthetics & Exoskeletons



Behind every inspiring company, there is a human story. [Dr. Amit Goffer founded ReWalk Robotics in 2001](#), following a life-altering accident that rendered him a person with quadriplegia. **He pioneered the invention and development of the ReWalk Robotics wearable exoskeleton, enabling individuals with lower-limb paralysis to walk again.**

Even though the technology does not currently enable him to walk again due to the extent of his injuries, his tenacity to develop a wearable exoskeleton so that others could walk paved the way for the ReWalk Rehabilitation and Personal systems to be used by thousands of people around the world today.

SkinVision

Telemedicine



The Amsterdam-based company **developed a smartphone app to easily evaluate risk factors for skin cancer and keep track of potentially problematic moles.** So far, the app has been downloaded in over 1.2 million instances globally, with the most downloads coming from the UK, Australia, the Netherlands, New Zealand, and Germany. The smart algorithm coupled with dermatologists' expertise has found over 27,000 cases of skin cancer.

Matthew Enevoldson, PR Manager at SkinVision told The Medical Futurist that technology such as their own is becoming more integrated within the healthcare system, to both ensure that those who need treatment are made aware of this fact and that those who have an unfounded concern do not take up valuable time and resources.

Smart Patients

Online platform



An online community for patients and families concerned with a variety of illnesses where they can share information about treatment options, clinical trials through a [built-in search engine](#), the latest scientific discoveries, etc. The greatest idea behind it is to let patients learn about scientific developments related to their conditions at their own level through conversations with other members, and use what they have learned in the context of their own life.

Smart Patients was founded by Gilles Frydman, who started the Association of Cancer Online Resources (ACOR) in 1995 and by Roni Zeiger, the former Chief Health Strategist at Google.

Surgical Theater

Virtual Reality



Moty Avisar and Alon Geri founded the Cleveland-based company, Surgical Theater. They both were affiliated with the Israeli Air Force flight simulation work, which experiences they utilized to lead patients as well as surgeons into the future. **Surgical Theater introduced a VR medical visualization platform alongside other Precision VR products for offering an immersive environment for patients and doctors.**

On the one hand, it allows for unparalleled patient education and engagement; on the other hand, it also delivers next-generation surgical planning and navigation capabilities as well as offers a great education platform for med students.

Thryve

Genomics



The California-based Thryve, founded in August 2016, has developed a direct-to-consumer microbiome sequencing test. Their team has already sequenced thousands of samples and **promises straightforward microbiome sequencing with high accuracy [compared to their competitors](#)**. Moreover, beyond offering the results, they also propose a personalized cure comprising of various probiotics.

Thryve aims to go beyond providing the outcome of your test with actionable insights. For example, the company tests for more than 10,000 bacterial species but only shows the ones that are statistically significant in your profile. The Medical Futurist reviewed the cutting-edge microbiome test [here](#).

Touch Bionics

Robotics



The Scotland-based company is a provider of world-leading prosthetic technologies and supporting services designed to ensure the best possible outcomes for people with upper limb deficiencies. The history of Touch Bionics began at the Princess Margaret Rose Hospital in Edinburgh in 1963, starting with comprehensive research into developing prosthetic solutions for children affected by Thalidomide, and it became a pioneer in the field of prosthetics over the years.

In 2007, it launched the i-limb hand, the first powered prosthetic hand to incorporate articulating fingers. In 2016, the venture was acquired by Össur, a global leader in non-invasive orthopedics.

Turbine

Artificial Intelligence



A dedicated team of AI developers, medical professionals, and bioinformaticians has spent six years researching and building an AI solution to design personalized treatments for any cancer type or patient faster than any traditional healthcare service. **The technology can identify the best drug to target a specific tumor with, moreover, it identifies complex biomarkers and design combination therapies by performing millions of simulated experiments each day.**

The technology is used in collaborations with Bayer, University of Cambridge, and top Hungarian research groups to find new cancer cures, speed up the time to market, and save the lives of cancer patients.

Urbandroid

Online platform



The Urbandroid team started its mission with the arrival of the first Android smartphones, back in 2010. They are **developing cutting-edge smartphone sensor technology to ease and enhance everyday urban life. Since then, they have developed over 20 different products, including The Medical Futurist's favorite sleep tracking app, [Sleep as Android](#), [Twilight](#), [Dock4Droid](#) or [Baby Sleep Instant](#).**

[Before using Fitbit Ionic's smart sleep alarm](#), The Medical Futurist used the Sleep as Android app paired with the [Pebble Time](#) smartwatch as a solution for sleep tracking. The app functioned as the primary source of algorithms, while the sensor was just measuring movements. The duo was able to wake up the user at the best possible time in the morning using a smart sleep alarm.

Veebot

Robotics



Veebot LLC

The start-up, established by two Stanford graduates, has been developing a **blood-drawing robot to speed up the unpleasant process of blood tests and inserting IVs and to reduce the risk of needlestick injuries highly prevalent in the medical community.**

The commercial venture started in 2010 with a team of Stanford engineers. With Veebot combining the latest innovations in robotics and imaging technology, [the whole process takes about a minute](#), and tests show that it can correctly identify the best vein with approximately 83 percent accuracy, which is nearly as good as an experienced human phlebotomist.

Veritas Genetics

Genomics



The Massachusetts-based company established in 2014 was co-founded by the guru of modern genomics, George Church. One year later, he made whole genome sequencing available to about 5,000 participants in the Personal Genome Project (PGP) at Harvard Medical School. Veritas runs its tests in a CLIA-certified lab and it also requires an order from your doctor first before sequencing your genome.

Veritas Genetics has been [hailed](#) as the first company to be able to sequence, analyse and interpret the human genome for less than \$1,000 – well to be precise for \$999, in order to properly feed the marketing machines as well. In 2016, [Veritas said to TechCrunch](#) that its [myGenome](#) product will even go one step further: it promised to bring the entire set of DNA test results to your smartphone.

Viatom Technology

Digital health device



Viatom Technology, a company out of Shenzhen, China has 20 years of patient monitor R&D experience. Its goal is to deliver high-quality and affordable medical devices with customer orientation and innovative technology. It released the Checkme health monitor internationally, that is [the closest on the market to the medical tricorder from the Star Trek series](#). The business-card-size device functions as a health tracker, it records your electrocardiogram, measures your blood oxygen saturation, the number of steps you take a day, serves as a thermometer, a blood pressure tracker, sleep monitor (although they [released a real one, too](#)) and a reminder.

VirtualiTee (Curiscope)

Augmented reality



The UK-based company, [Curiscope](#), creates **immersive learning experiences in virtual and augmented reality**. They developed the Virtuali-tee T-shirt, through which you can see **the inner parts of the human body in the form of realistic holograms**. Virtuali-tee brings anatomy to life to such a point of illusion which already presents Arthur C. Clarke's famous third law. "Any sufficiently advanced technology is indistinguishable from magic." We tested the T-shirt's [wizardry](#) here.

Ed Barton, CEO and Co-founder of Curiscope, told The Medical Futurist that they started the company with the belief that AR would let humans re-imagine how they learn difficult scientific concepts. The popular teaching tool is already present in over a thousand schools and more than a hundred countries. Curiscope's biggest markets are English-speaking countries (US, UK, Australia, New Zealand, and Canada), but it is also popular in Brazil and Germany.

Virtually Better

Virtual Reality



Virtually Better, the pioneering VR company founded in 1996, **offers among others an exposure therapy for people suffering from anxiety disorders, specific phobias or PTSD. This technology allows clinicians to circumvent many of the challenges associated with other types of exposure therapy;** treat problem areas that most clinicians lack the resources to treat effectively.

In most cases, it is not enough to tell patients to imagine their greatest fear to solve the problem – otherwise, the patient would not really need the intervention of a professional.

Woebot Labs

Health chatbot



Woebot Labs was founded in May 2017 by Alison Darcy, a clinical research psychologist. She had been working at the Faculty in Psychiatry and Behavioral Sciences at the Stanford School of Medicine for a decade where she developed digital health interventions for young people before establishing the start-up.

Woebot is a charming little robot-figured chatbot who helps you monitor mood and learn about yourself. Stemming from a therapeutic framework known as Cognitive Behaviour Therapy, Woebot asks people how they're feeling and what is going on in their lives through brief daily conversations. Woebot also talks about mental health and sends you videos and other useful tools depending on your mood and needs at that moment.

Xenex Technologies

Robotics



The company, founded by two enthusiastic epidemiologists in Houston, has grown from a small start-up to a sizeable company since its establishment in 2008. Currently, it has a presence in 400 hospitals across the US and constantly growing. Its success lies in its world-class product, the germ-zapping [Xenex Robot, which might constitute the next level of hygiene](#).

A hospital even [polled its colleagues about how to call the smart machine](#) – and named it Hector. **This helpful automatic tool destroys deadly microorganisms causing HAIs (hospital-acquired infections) by utilizing [special UV disinfection methodologies](#).**

Zipline

Medical drones



The Silicon Valley start-up is the first company to offer drones for medical purposes. In 2016, [the Rwandan government teamed up with Zipline](#) to deliver medical supplies to five of its hospitals. Within a year, they plan to expand the program to nearly half of the country's 45 hospitals. The drones will make up to 150 deliveries a day – and reduce the previously 4-hour-long delivery to 15 minutes!

After its Rwandan success, [the White House reached out to Zipline](#). The start-up announced in 2017 that it will deliver medicine and blood to rural and remote communities in Maryland, Nevada, and Washington.

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