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TrendRadar: Future of Health



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Key findings

Imagine a remote consultation between a patient and a doctor based on health data generated by a sensor printed on the patient's forearm. This may seem like a picture of the future. But as the life sciences and health care industry becomes more advanced and the pace of development increases, the future is accelerating towards the present. Keeping track of trends, therefore, has become a vital imperative for companies and other organisations in the health sector.

The *TrendRadar: Future of Health* provides a systematic overview of the most relevant trends in the life sciences and health care industry. It is based on a screening of industry trends, their assessment by health experts, and categorises the identified trends by different levels of urgency.

Cybersecurity and Real-World Data are among the trends with the highest rated impact on industry and that will be mainstream in the near future or are already mainstream. Other trends where companies should act are Business Ecosystems, Informed Patients, Mental Health, Non-conventional Service Provision, Patient Influencers, Remote Healthcare, and Wearable Technologies. Several other trends are not high-impact or mainstream in the market yet but show signs of growing importance. Therefore, companies should take note by starting to prepare for them. Among these trends are Predictive Analytics, Interoperability of Patient Data, and New Competition in the life sciences and health care industry.

Some trends identified by our research should be on companies' watch lists. This is because they might become mainstream in the long run or their impact on industry may still be low or uncertain. Human Enhancement and Brain-Computer Interface, for example, are in this category.

To find out both how well your company performs in keeping up with health trends and it compares to the rest of the industry, contact Deloitte Switzerland for a benchmarking and find out where you can make competence improvements.

Trend monitoring – a necessity for businesses

Trends come and go – this has always been the case in business. However, what is new is the speed of change in technology, business environment and business models. While a hundred years ago, it took a relatively long time for the next innovation to evolve, trends in the digital age are emerging much faster.

Due to the proliferation of information, it is becoming ever more difficult to keep up to date and to separate relevant from irrelevant trends. For example, the volume of global data has multiplied in recent years (see Figure 1). Forecasts show that this trend will only continue in the next few years.

Against this backdrop, it is more important than ever for companies to identify the important trends in their industries to avoid the risk of missing out on a competitive advantage or losing ground to competition. Companies that are always up to date and aware of the relevant trends and their development can react proactively, identify opportunities and, if necessary, adapt their strategy.

50.5 15.5 2.0 2015 2010 2020 2025*

Figure 1 – Development of global data volume in zettabytes, *forecast (source: IDC t1p.de/The-Digitization-of-the-World)

175.0



Figure 2 – The three-step procedure of the TrendRadar



The three-step procedure of the TrendRadar

1. Trend screening

Identifying existing trends and their impact on a specific industry is an essential task. We did this through desk research, using a trend database (TrendManager by TrendOne), and by interviewing various industry experts. The trends fall into a hierarchy with three levels: mega, macro, and micro trends. Macro trends derive from micro trends and are in turn grouped into mega trends. The TrendRadar (see p. 8) focuses on mega and macro trends.

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Mega trends describe structural changes in society. They provide information on which developments have a long-lasting influence on society.



Macro trends are the concrete variations of a mega trend. They describe different aspects and facets of a mega trend.

Micro trends are the building blocks for macro trends. They are the first concrete signs of emerging trend movements or use cases. Micro trends can be trend-setting technologies, products, services, or new marketing innovations.

2. Trend assessment

The trends were assessed against two criteria: the impact on industry and the time of mainstream adoption.



The criterion **Impact on Industry** describes the strength of the influence that the trend currently has or is expected to have. Trends can have an impact on different levels of an industry, such as market offerings (products & services), company processes or employees and customers. A trend is rated on a scale from very low to very high impact on industry.

The criterion **Time of Mainstream Adoption** assesses when the trend is likely to be adopted by most market participants within the industry. The time scale goes from "0-2 years" to "10 years plus".

The trend assessment was conducted by Deloitte professionals and external industry experts.

The three-step procedure of the TrendRadar



3. TrendRadar

The TrendRadar is a visual representation of the trend assessment and categorises trends in three areas: Act, Prepare and Watch.

Act: Trends have a high to very high impact on the industry. The date of mainstream adoption is expected in the near future or has happened already. If companies have not yet reacted to these trends it is high time to act.

Prepare: Trends have at least a medium impact on the industry and a medium timeframe of mainstream adoption but are not high in both criteria, such as they are in Act trends. For those trends, companies should actively prepare.

Watch: Trends either have a very low to low impact on the industry or their mainstream adoption is not expected in the near future. Trends in this category should be on the watch list.



TrendRadar and trends in the Future of Health

The *TrendRadar: Future of Health* contains 28 macro trends that group into six mega trends (see Figure 3). The mega trends are in coloured boxes on the rim, while the macro trends are in the area towards the middle. The mega trend Healthstyle contains the most macro trends, with 11 in number. All other mega trends include between two and five macro trends.

Out of the 28 macro trends, nine fall into the Act category. The majority – 17 trends – was evaluated as being in the Prepare category. The remaining two macro trends, namely Human Enhancement and Brain-Computer Interface, belong to the Watch category. The exact position of a macro trend within Act, Prepare, or Watch does not provide additional information but was chosen to fit the overall optics of the TrendRadar.

In the following, each mega trend and its macro trends are described including the assessment of impact on industry and time of mainstream adoption.



Please click on a mega or macro trend to get to the section with its description and assessment.



Remote Healthcare is an approach that does not require

patients to be physically present. Patient benefits include

A lack of trust in the secure processing of personal health

data is partly to blame for challenges with acceptance levels. This is especially true among older people.

Treatment, follow-up treatment and in-patient stays on an entirely remote basis are just as possible as remote

24-hour access to medical services and knowledge.

Patients' vital signs can be tracked using health apps, which also collect data to support their overall treatment.

He

Healthstyle



Health is becoming an increasingly important subject in everyday life. It is integrated into all aspects of our lives and every industry. This is true not just of physical health but mental health too. As a result, there is a proactive, preventive, and individualised approach to health rather than the reactive approach of the past.



Trend assessment



Impact on industry



Remote Healthcare

surgical procedures.

Healthstyle





Mental Health

As a society and individuals, we place high expectations on ourselves of a good life and excellent work performance. Yet we are unable to always fulfil these high expectations. This can lead to burn-out, anxiety, stress, depression, and loneliness. Limited mental resilience and changing lifestyles are possible sources for increased psychological problems. Effective tools for dealing with psychological problems include mindfulness exercises, such as meditation, and doctors are now prescribing courses in these areas.



Non-conventional Service Provision

In the past, patients with minor medical issues usually approached general practitioners first. Nowadays, we increasingly observe other players in the health industry also providing basic medical services. For example, pharmacies are broadening their range of services and are offering vaccinations, different medical checks and basic medical services, such as wound care and consultation. Such non-conventional service provision could increase further in the future and change the landscape of the healthcare industry.



Trend assessment







Personalised Treatment

Healthstyle







Health Sensors

Health sensors enable constant measurement and analysis of health data wherever a patient may be. No longer simply lifestyle gadgets, they have become essential medical assistants. Users can diagnose, treat, check, and optimise their health independently. Using microelectronics and compact sensor systems, a health sensor can be a wearable device, an implant or even printed on the skin.

Trend assessment





Healthstyle



Home Care

Home care aims to provide healthcare and social services at home, delivered by medical and non-medical caregivers. With home care in place, patients can be released from hospital earlier after a medical intervention and be treated at home. Home care lies at the intersection between healthcare and social care. In 2019, the global home care market was valued at USD 281.8 billion. It is forecasted to grow from 2020 to 2027 at an annual rate of about eight per cent. Ageing populations, an increased awareness of home care benefits and a gradually more favourable regulatory environment are expected to fuel this market growth.

Trend assessment



Impact on industry





Trend assessment



Impact on industry



New Research Pathways

Research pathways in the healthcare industry are changing. Until recently, most research focused on

creating small molecules using chemistry. Now, the focus has shifted to biology and on medicines produced either from living organisms or containing components of living organisms. This new focus opens an entirely new world of research. Cell and gene therapy, for example, uses the human body's own DNA to treat and cure disease. Messenger RNA (mRNA) – used in some COVID-19 vaccines – works similarly. Companies are actively seeking out acquisition targets in the marketplace to gain access to the latest research tools and pathways.

Healthstyle



Preventive Healthcare

Taking responsibility for ourselves, leading a healthy lifestyle, and reducing our personal risk factors; these are examples how we are becoming more proactive in managing our health. In pursuit of a long and healthy life, we are trying to exercise regularly, get enough sleep, and avoid health risks, such as smoking and drinking to excess. Wearables and other self-tracking devices are among the many new technologies that enable people to record a wide range of data on their lifestyle.



Trend assessment



Impact on industry



Trend assessment PREPARE Impact on industry



Precision Intervention

Increasingly sophisticated medical technology could enable earlier interventions and more effective procedures that reduce or even eliminate the need for medicinal treatment. This includes advances in robotic surgery, nanotechnology, 3D printing, and tissue engineering. As these technologies become more sophisticated, they could lead to dramatically improved outcomes in cancer, infectious diseases, inflammatory conditions, and chronic pain. Companies working in the disease areas affected should consider adopting some of these technologies. If not, they risk operating in a much smaller market in the future.

There is increased demand for alternative medicines.

treatment of illnesses or alleviating pain. Most

nutrition to prevent illness. Medical studies are

These are complementary methods for the diagnosis and

approaches use herbal ingredients as well as exercise and

increasingly proving the effectiveness of purely plant-

powerful side-effects or may influence the effects of other medicines. Criticism often focuses on the lack of

practitioner qualification and control as well as not

based remedies. However, improper use can have

Healthstyle



Trend assessment

Inclusive health

Medicine has previously been based for the most part on an average-aged white individual. For people with different bodies (age, gender, disability, or ethnicity) the consequence is a possible data gap, leading potentially to false diagnoses and treatments. Inclusive health means to close this gap. Medical textbooks now include photos of black skin conditions, studies on heart attack symptoms in women, pathologies of transgender people, and describe medical care for people with a migrant background or disability.



Trend assessment



Impact on industry



enough patient safety.

Alternative Medicine

 PREPARE

 Impact on industry

 Very low
 Low

 Rather low
 Rather high

 High
 Very high

 Time of Mainstream Adoption



Data Era



The data mountain is growing daily and exponentially. Almost anything can be tracked and recorded – from living organisms to devices and machines. The intelligent use of all this data is a major challenge. In this context, insightful data handling and data security are key. Databased knowledge enables targeted user profiling. Cybersecurity is also critical: the protection of privacy and property is an endless task.



Cybersecurity

Cyberattacks can come from anywhere and have many motives. Typically, perpetrators are motivated by financial interests. Attackers blackmail their victims using so-called ransomware. Insufficiently secured systems are vulnerable. Artificial intelligence is playing an ever-greater role in both attack and defence. In the future, the need for security will be balanced against freedom and convenience.

Trend assessment





Data Era



Real-world Data

Enormous advances in digitisation have opened access to medical data that, unlike traditional clinical trials, is generated in patients' everyday lives, so-called real-world data (RWD). RWD has a wide range of applications – from assessing the safety and effectiveness of therapies to riskbenefit trade-offs for specific diseases. This also includes complex diagnoses and statements about patterns and abnormalities in specific patient groups. The use of RWD can also reduce products' time to market.



Interoperability of Patient Data

Various actors in the health industry, such as hospitals, medical practices, and insurance companies, regularly exchange patients' medical records. Making this possible requires a common data infrastructure and shared standards and processes. Interoperability of patient data between the various actors in the healthcare system has the potential to increase the efficiency and quality of care significantly, and therefore improve patient outcomes. With interoperability of data silo mentalities can be broken and flexibility increased. Interoperability also creates a platform for collaborative research based on R&D and more effective and efficient clinical trials.



Trend assessment





We all generate a huge amount of data every day. The

perspective. Patient targeting, using health data from

This helps medical specialists learn more about us as

individuals. Behaviour analysis then forms the basis of a

outcomes. If data from multiple individuals is combined, smart analysis makes it possible to draw conclusions on

personalised patient journey. By getting to know their

customers more precisely, health care providers can motivate them purposefully towards better health

the behaviour of specific patient groups.

traces we leave help paint a picture of us from a medically

sensors, gathers demographic detail but also health data.

Data Era



Predictive Analytics

Predictive Analytics uses algorithms to evaluate historical and recent data. In so doing, it seeks to predict future scenarios. The objective is to use these predictions to deploy health resources as efficiently as possible. Predicting human behaviour will increasingly come into scope with predictive intelligence. The software will be able to predict the next steps of individual patients. This will help prepare the ground for automated decisionmaking.



Trend assessment



Impact on industry

Very high



Patient Profiling

Trend assessment PREPARE Impact on industry Very low Low Rather low Rather high High Time of Mainstream Adoption



Economisation of Health

Back to the TrendRadar



The economisation of health points to the growing relevance of the economic and business dimensions of the life sciences and health care industry. There is an increasing focus on productivity, cost efficiency and strategic considerations, such as market position and alliances. For patients, these factors have an influence on available insurance models, for example. Businesses need to re-evaluate who and where their competitors are as well as the stakeholders with whom they want to collaborate.



Trend assessment



Impact on industry



Business Ecosystems

A business ecosystem is a network of organisations – including suppliers, distributors, customers, competitors, government agencies, and so on – involved in the delivery of a specific product or service through both competition and cooperation. In a business ecosystem, companies make strategic partnerships with other firms working on products and services that could improve and disrupt their R&D. In this way, a business gains access to external innovation and expertise. A functioning business ecosystem requires a collaborative, innovative and open mindset and a new operating and governance model with the involvement of collaborators.

Economisation of Health

Back to the TrendRadar



New Competition

As with many markets, competition in the life sciences and healthcare industry is rising. One important factor driving this is the catch up of emerging markets, with China leading the way. Companies from emerging markets could soon become significant competitors to current industry leaders. Additionally, firms from other sectors – especially large technology companies, such as Google, Amazon, and Facebook, are likely to enter the health industry. Thus, 'traditional' health companies in developed countries should watch out for new players emerging from outside their conventional market.





New Pricing and Reimbursement Models

Companies in the health industry, especially pharmaceutical businesses and health insurance providers, will develop innovative pricing and reimbursement models. Patient data will play an important role in two ways. First, patients might obtain discounts in exchange for their health data. Second, the availability of patient data may allow profiling, which could enable companies to offer different terms and reimbursements to specific patient groups. For example, individuals with healthy habits (exercise, a balanced diet, etc.) might benefit from lower insurance premiums.

Trend assessment





Economisation of Health



Two-tier Healthcare System

In more and more countries, we see the development of a two-tier healthcare system: a small segment of the population has access to premium treatments while a larger segment faces significant limitations in medical services. This has an impact on all players in the healthcare system. It offers an opportunity to sell additional high-end products and services to tier-one patients. But it also creates a limitation and potential risk: that tier-two customers may be unable to access treatments because of limited medical coverage.



Patient 2.0



Patients are showing new patterns of behaviour resulting from the emergence of new technologies, demographic change, and the use of social media. The number of digital and analogue tools available to cope with the complexity of health is rising. These new tools and technologies influence the relationship between patients and players in the life sciences and health industry, such as pharma or insurance companies and general practitioners.



Patient organisations and individual patients will be

Patient Influencers

powerful influencers of healthcare policy and companies in the health industry. Today, groups of patients can connect and coordinate easily on a global level, thanks to the internet. The rising use of social media also means individual patients can have broad influence. This global connectivity via social media is facilitating movements capable of applying pressure on policymakers and businesses in the health industry.

Trend assessment











Informed Patients

Patients have access to a wealth of information about their health and well-being. An obvious and widespread source of information is the world wide web. People are able, for example, to research possible causes of their symptoms on medical websites in minutes. Similarly, the internet allows access to high-quality information, such as scientific publications and medical research results. Informed patients tend to be more demanding, which can create a challenge for many actors in the health industry, especially doctors and pharmacies.



Patient Distrust

While most people trust health experts, such as physicians, numerous polls have shown that life sciences and health care rank among the least trusted industries. In particular, pharma companies and health insurance providers face low levels of trust or even distrust. But trust is a critical asset for companies, influencing many factors, from their chances of gaining and maintaining customers to their ability to recruit talent. Consumer trust also gives health companies the incentive to innovate and provides support for the industry's contributions and mission to provide valuable, life-saving therapies.

Trend assessment



Impact on industry

Very high







Engineered Evolution

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Since the dawn of mankind, humans have changed the evolution of natural systems. Advances in science and technology let us influence the evolution of our own bodies and their biological processes. A clear example of this is the use of technologies to enhance our senses. In this context, we apply the principles of engineering and natural sciences to tissues, cells, and molecules of natural systems.



Trend assessment

Wearable Technologies

Watches and glasses are familiar to everyone. Wearable technologies are digital versions of these devices with new technologies and materials. Smart watches and smart clothes are just two examples of wearable technologies that let us collect bio-vital data. Such data serves to not only prevent health problems but also boost physical performance or optimise other physical activities, such as sleep. Wearables are the next step into an increasingly digitised world.



Engineered Evolution

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Brain-Computer Interface



Trend assessment



Impact on industry





Trend assessment



Impact on industry



Human Enhancement

Improving physical or cognitive abilities through targeted modification of the human body describes the trend of Human Enhancement. This enables us to offset physical disabilities and overcome natural barriers. Specific pharmaceutical products, such as nootropics, alongside a variety of new technologies are used for the enhancement or boosting of physical and mental performance. Exoskeletons and prosthetics are technological examples used outside the human body while so-called wetware technologies can be implanted inside the body. They allow individuals not only to monitor biological processes but also to influence them for specific purposes.

Virtualisation



The virtual world is ripe with new possibilities. This is being driven by the development of high-performance and versatile input devices as well as multisensory enhancements and the growing number of accurate, low-cost sensors. Trends in the digitisation of activities, coupled with remote implementation, are creating both demand for and development of such technologies. COVID-19 was a catalyst in the wave of virtual platforms and digital tools being developed.



Trend assessment



Impact on industry



Treatments Using VR and AR

A variety of treatments are enabled and supported by augmented reality (AR) and virtual reality (VR). Patients suffering from spinal cord injuries, for example, have been helped through digital therapies to partially restore mobility. These technologies can also transform treatments, especially in psychiatry and neurology, and could potentially shape the future of surgery. Neurosurgeons performing AR surgery have recently used headsets with see-through eye displays. The headsets project images of the patient's internal anatomy, derived from CT scans, in a way that enables surgeons to have a form of x-ray vision.

Virtualisation



Digital Twin

In the future, we could each have a digital twin. This would be a virtual representation of us, including all the processes that exert influence on us. The digital twin concept has been used in other spheres to create a dynamic simulation at the digital level to mirror products, systems and processes and all their interactions. Using data based on the individual, the digital twin could be used to predict the future health of that individual.



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Do you want to know how well your company performs in health trends compared to the rest of the industry?

Contact Deloitte Switzerland for a benchmarking and find out where your organisation should improve its competences.

Contacts and authors

Contacts



Nico Kleyn Managing Partner, Life Sciences & Health Care, Switzerland and NSE +41 58 279 81 66 nikleyn@deloitte.ch



Patricia Gee Partner, Consulting Life Sciences & Health Care +41 58 279 64 03 pgee@deloitte.ch

Authors



Dr. Michael Grampp Chief Economist & Head of Research +41 58 279 68 17 mgrampp@deloitte.ch



Daniel Laude, PhD Economist & Researcher +41 58 279 64 35 dlaude@deloitte.ch



Damian Rohr Economist & Researcher +41 58 279 73 02 drohr@deloitte.ch

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