

# Global Health Care: "Invest in health"

## Investment theme

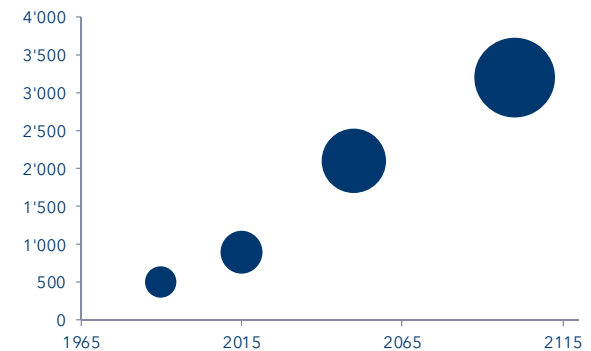
TO MANY INVESTORS, THE HEALTHCARE SECTOR APPEARS TO BE LESS THAN DYNAMIC. WRONGLY, BECAUSE THE STRATEGIC DRIVERS "AGEING", "EFFICIENCY" AND "TECHNOLOGY" WILL HAVE A DECISIVE INFLUENCE ON THE INDUSTRY. THE RESULTING TRANSITION IS SPURRING ABOVE-AVERAGE GROWTH, EVEN AS IT KEEPS THE HEALTHCARE SYSTEM AFFORDABLE. WITH THE VP BANK "FUTURE HEALTH BASKET", VP BANK OFFERS INVESTORS A COST-EFFECTIVE MEANS OF ACCESSING AN ARRAY OF CAREFULLY SELECTED COMPANIES THAT BENEFIT FROM THESE STRATEGIC TRENDS.

The healthcare industry value chain is enormously diverse: it extends from classical pharmaceuticals, modern biotech-engineered drugs and generics, to medical technology, to a broad spectrum of technical, administrative, health maintenance and treatment services. The strategic challenges for the entire sector can be summed up with three key watchwords: demography, technology and (economic) efficiency, whereas technology plays a crucial role here. It is influencing the healthcare sector not only through today's drive to "digitalise", but also as a result of the rapid pace of technological development in the realms of medical devices and implants. The aim is to provide better and more efficient health care for a fast-growing world population, and this at more affordable cost.

### Ageing: The ageing dilemma

Population growth trends have a multifaceted economic and sociological impact across the globe. High birth rates are particularly characteristic of the emerging nations, above all in Asia and Africa. In contrast, many industrialised countries count on immigration as the fuel for their economic growth. Aside from absolute numbers and migratory movements, structural developments must also be kept in mind. A very important aspect for the health system is the shift in age structures: whilst more than 900 million people worldwide are already over 60 years of age, this population group will increase to 1.4 billion by 2030 - with one in five being above the age of 60 by 2050. According to the World Health Organization (WHO), this increase in average age will lead to a disproportionate rise in the number of deaths caused by noncommunicable diseases such as heart attacks, cancer or diabetes over the next 10 to 15 years. Already today, leukaemia is diagnosed every three minutes in the USA, and every 40 seconds a US citizen dies of a heart attack or stroke. Citigroup estimates that 23% of patients in the US currently suffer from chronic or critical illnesses, accounting for 77% of total healthcare costs. This, coupled with increasing ageing, will drive a disproportionate increase in future costs.

Generation 60+ - projected worldwide trend (in millions)



Source: UNDESA, United Nations Population Division

The demand for health care is therefore not only on the increase, it is also changing the profile of requirements across all aspects of social coexistence. The stress on social security systems (e.g. old-age pension plans, health insurance, nursing care insurance, etc.) is already recognisable today. Likewise, the economic development of regions, the various influences on the world of work, as well as urban and transport developments are all hot-button topics. In Germany, the pay-as-you-go pension system is almost 30 per cent reliant on state subsidies. Cost efficiency is therefore also a driver. However, it is not enough just to keep an eye on drug prices. The better coordinated the entire chain of response is - from the onset of a health issue through to full patient recovery - the greater the impact on cost savings is.

### Efficiency: Price is not the deciding factor

By taking a look from this perspective at the expenditures involved in cases of extreme diseases, it becomes clear that life has a price.

The effort that goes into the research and development of new drugs is complex, time-consuming and very risky for pharmaceutical companies.

According to the WHO, it takes 10 to 15 years before a drug can be successfully brought to market. The industry is very dynamic in this respect: between 2011 and 2015, 226 new pharmaceutical companies were founded, and five of the eleven largest R&D companies emanated from the traditional healthcare sector.

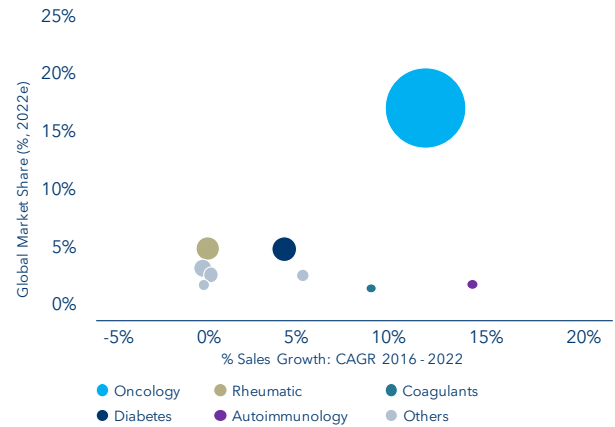
The chances of passing all the clinical trials and successfully launching a drug on the market are around 13%, and even then only one in three new drugs meets expectations in terms of return on investment.

Research	Development	Approval
Drug discovery and pre-clinical research	Clinical Trials (Phase I, II & III)	Regulatory approval and marketing
<ul style="list-style-type: none"> <li>• 5-10'000 combinations</li> <li>• 3-6 years duration</li> <li>• ~ 21.5% share of budget</li> <li>• Chances of success: 0.01%</li> </ul>	<ul style="list-style-type: none"> <li>• Up to 5'000 volunteers</li> <li>• 6-7 years duration</li> <li>• ~ 48% share of budget</li> <li>• Chances of success: 13%</li> </ul>	<ul style="list-style-type: none"> <li>• 0.5-2 years duration</li> <li>• ~ 21.7% share of budget</li> <li>• Chances for ROI: 1:3</li> </ul>

Source: Ernst & Young

Raising drug prices is indeed a challenge. Pfizer's latest price increase attempt, which was immediately retracted after a sharp reprimand from Donald Trump, shows how contentious this issue is. Ultimately, pharmaceutical companies are much more sensitive to positive or negative changes in the overall potential of new or existing drugs. The global pharmaceutical market is expected to comprise a total sales volume of USD 1.43 trillion in 2020. To ensure that the incentives for the pharmaceutical industry to invest in R&D remain high, new innovations are granted patent rights which enable the medicines and treatments to be distributed exclusively over a specified period of time. Once those patent rights expire, there is a strong tendency within the industry to mimic the traditionally produced drugs through synthetic copies - so-called generics. In the biotechnology segment, these replicas are called "biosimilars". As soon as the active ingredients of the original drug have been identified and successfully reengineered, the composition of the other individual components is quickly recognisable. This enables a cost-effective reproduction via streamlined processes; however, highly specialised know-how is also necessary to do so. In recent years it has become increasingly apparent that the classical pharma industry is embracing companies that produce cost-effectively and adopting their methods. Traditional companies such as Roche and Aventis, or the American company Merck, are progressively taking up biotechnological business activities or adapting to the latest developments. The effort to produce effective yet cost-efficient drugs is therefore not only an important trend, but also a basic prerequisite for surviving and simultaneously growing in an environment of very tough cost competition and limited healthcare-related budgets. Another way to optimise the chances of success is by specialising in certain disease areas. In addition to the health challenges posed by ageing, unfavourable environmental conditions have also been causing a noticeable increase in specific diseases: the frequency of diagnosis of cancer, dementia, diabetes, as well as rare diseases is increasing at an above-average rate.

Anticipated drug revenues (by type of disease)



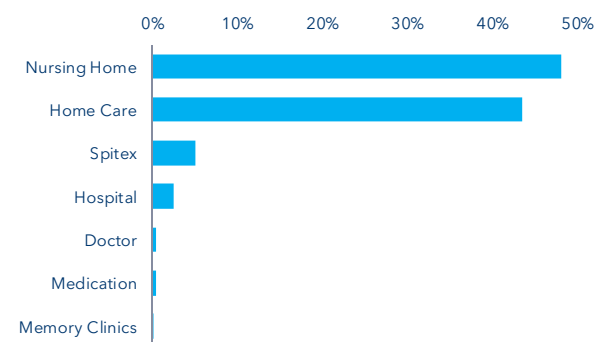
Source: EvaluatePharma, World Preview 2017

### Digitalisation: The best prescription

Technological change is having a major impact on the future of healthcare. The use of digital technologies is not only a catalyst in the research and development of new drugs, but, together with the connectivity of all treatment steps, it is by far the most important driver of change in the healthcare industry.

The focus is on individualising and automating the entire spectrum of medical treatment tasks - a move that will ultimately benefit patients, doctors and all of the administrators of the healthcare system. The swift spread of digitalisation is paving the way for the direct exchange of disease-related data between the patient and the treating physicians or caregivers. Moreover, the relentlessly increasing efficiency and networking of mobile devices enables medical care to become more transparent and consequently more effective and patient-specific. Throughout the entire course of a given disease, medication accounts for the smallest proportion of total costs. The largest expenditures go towards professional care, not just in hospitals but also in nursing homes and private follow-up care.

Dementia: treatment costs in Switzerland (2009)



Source: InterPharma

Digitalisation is becoming a pivotal factor in the way patients communicate with their treating physicians and health insurance providers. In the USA, there is a growing trend towards online consultations with general practitioners. Similarly, more and more prescription drugs are being sent directly to patients via online discounters. This makes primary care for general ailments more efficient and reduces the daily flow of visits to the doctor. A pilot project conducted in Arizona (USA) revealed that the time patients spent in hospital could be reduced by about half. Costs fell by a good third, even as patient satisfaction increased. The Swiss company "Zur Rose" is active in online drug retailing in Switzerland and Germany. The current market potential in the prescription medicines segment in the core European countries was already estimated at around CHF 117 billion in 2015. By way of comparison, the market for Amazon's books, films and music amounted to roughly USD 54 billion in 2016. The American company Pillpack has also specialised in the online medicine retailing business and was taken over by Amazon in 2018 for USD 1 billion. On the day of the announcement, the market value of the other listed drug-store chains fell by some USD 11 billion.

Tremendous importance is also being attached to the digitalisation of hospital processes, which play a very significant role in patient treatment, the path to recovery, and thus the overall healing costs incurred throughout the course of the disease. The starting point here is naturally the diagnosis and early detection of an ailment, as well as the optimal networking of all subsequent treatment areas. In this regard, Frans van Houten, CEO of Royal Philips, explicitly points out stroke patients as a prime example of the importance of digital diagnostics and patient monitoring. Through optimised initial admission and digitally assisted diagnosis, an integral team is promptly formed with input from the emergency room, and rapid prioritisation is made. The immediate involvement of specialists from different fields is a crucial factor in dealing with the entire course of the illness. Especially the first hours after the event prove to be decisive in avoiding what sometimes can be protracted or even permanent consequential damage to the patient. The enormous cost savings achieved this way are equally as important as the possibility it offers to significantly shorten the patient's recovery process.

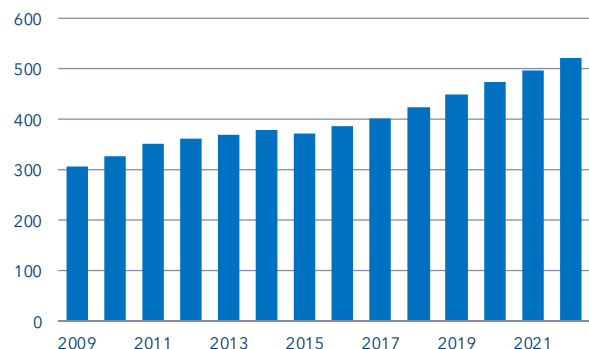
According to a UBS study, 5% of all global data is generated in the healthcare sector - more than in the entire financial industry. However, the proliferation of digitalisation in this field is still at an early stage. It is estimated that the healthcare niche of information technology will generate close to USD 100 billion in annual revenues - a figure that does not yet include new approaches in areas like telemedicine and mobile diagnosis.

### Medtech

Aside from cost-efficient, effective medications and optimised treatment processes, the medical technology realm is another important building block in the future of health care. More than 500,000 different medical devices are used not just for diagnostic purposes, but also therapeutic treatment throughout the world. They range from simple instruments for measuring blood pressure, to enormous MRI and proton beam machines, to devices for application in the orthopaedics area.

The pace of innovation within the medical technology segment is rapid: the usual product life cycle is 18 to 24 months. More than 12,200 new patents were filed in 2016, more than in any other industry worldwide. With 41% of that total, Europe is the leader in technological progress, ahead of the USA (38%). Considering the evolution of medical technology, it is not surprising that of the more than 27,000 medtech companies worldwide, around 95% are small and medium-sized enterprises. Their collective global revenues are expected to reach USD 425 billion this year alone.

Medical technology: global revenue trend (in USD billions)



Source: Forbes

The highest rates of growth over the next five years are expected to be seen in the cardiology, in-vitro diagnostics, endoscopy and dental segments. Optical diagnostics and orthopaedics are among the five largest areas but have the lowest growth expectations at 3.5% and 4%, respectively.

At the centre of current trends are personalised diagnostics, mobile patient care, micro-medication, as well as innovative surgical approaches. But the common denominator is the creation of a comprehensive information base aimed at optimising the treatment process and caring for patients more efficiently.

The fast-moving nature of the industry calls for greater cost consciousness, which is being brought to bear through digitalisation and holistically optimised treatment concepts. Siemens recognised this and has publicly listed its medtech business unit "Siemens Healthineers" on the stock exchange as an independent company. Only this

way was it possible to form a partnership with Turkish hospitals in regard to their clinical laboratories, which will enable access to more than 92 million patients over the next five years. A further example is China's strategic initiative "Healthy China 2030". Moreover, digital patient care is an important building block in the effort to provide efficient and cost-effective health care to the broadest possible spectrum of the world's population.

### The VP Bank "Future Health Basket"

Investors who wish to profit from these developments within the healthcare sector should focus on selected beneficiaries of the current trends. To that end, VP Bank is launching a certificate which invests in 37 companies that meet the four key criteria of "demographics", "profitability", "digitalisation" and "health technology". This basket is actively managed so that it can also react to market changes and new opportunities during its five-year lifespan. Post-issuance tradability is ensured: the units can be bought or sold on a daily basis.

#### Product details

VP Bank Future Health Basket	
ISIN (USD non hedged)	XS1668110312
ISIN (EUR non hedged)	XS1668113332
ISIN (CHF non hedged)	XS1668109579
Manager	Harald Brandl, Marcello Musio
Currency	USD, EUR, CHF
Benchmark	MSCI World Health Care Equip & Services TR
Ticker Bloomberg	NDWUHCE
Portfolio Positions	approx. 40 positions
Subscription / Redemption*	Daily
Cost of certificate (p.a.)**	0.75%
Subscription period	17.09.2018 - 26.09.2018
Price at issuance	100
Maturity	5 Years
Certificate provider	JP Morgan Chase NA (S&P: A+)
Distribution type	accumulating

\* On subscription/redemption cost of 20 basis points are deducted from the NAV

\*\*Exclusive rebalancing cost

### Summary

The healthcare sector is evolving rapidly. New challenges, but also the torrid pace of technological change, are driving a highly dynamic trend that portends above-average growth potential. The digitalisation of diagnostic, treatment and administrative processes, in combination with more affordable medications, increases the public's access to health care as well as structurally broadens the range of services and their effectiveness. Economic challenges will drive the trend towards holistic care concepts and cheaper drugs. The rapid pace of innovation in terms of medical technology will lead to more efficient and much more flexible diagnostics and patient care. Thanks to a vehicle that focuses on these trends within the healthcare sector, investors have the opportunity to benefit from a long-term, sustainable investment theme.

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