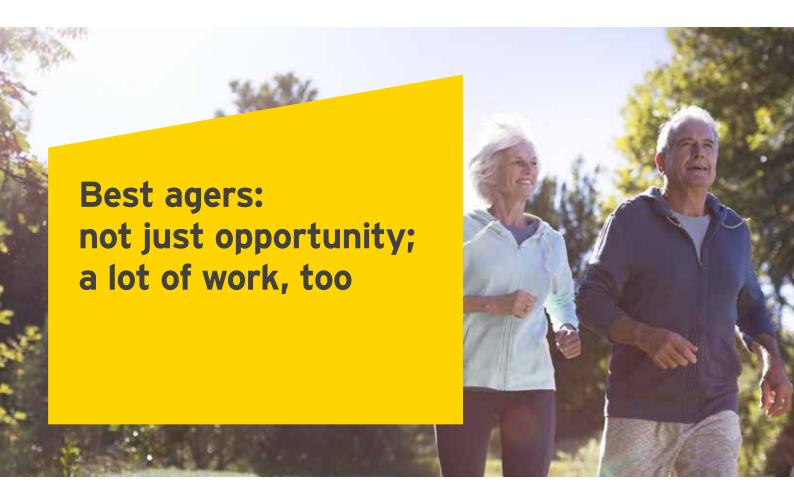


Issue 6 | July 2017

Point of View

Life Sciences, Health and Chemicals



The scenario is the same in most developed countries around the world: life expectancy is rapidly increasing, while birthrates are falling. Causes include growing prosperity, and medicine and pharmaceuticals that are becoming increasingly effective. As a result, the share of older people in the population is rising.

"Even beyond the usual (molecular) school of thought, the demographic development of the pharmaceutical industry is creating new opportunities, particularly in the area of services associated with age-related diseases. In the broadest sense, most of them have something to do with digitalization, often with the processing and feedback of data – mostly patient data."

Stephan Ohnmacht, Life Sciences Advisory



The health care and social systems of developed countries are thus facing major challenges: An aging society is not necessarily a healthier society. In many cases, an increase in age means an increase in the number and complexity of illnesses, some of which are also chronic. Dementia, cancer, diabetes, cardiovascular problems, diseases of the respiratory organs and cerebral perfusion disorders are ailments that are often associated with age.

Most chronic ailments have one thing in common: They can be very expensive. Generally, their therapy is costly, either because expensive procedures are required to heal them or because chronic diseases result in long-term costs. Today, health care systems around the world are already under enormous financial pressure. Many governments are making efforts to contain costs. Approaches they are taking include reducing expenditures for hospitals and physicians in private practice, as well as for medications.

For the pharmaceutical industry, this can bring both challenges and opportunities. On the one hand, the challenges lie in finding the right answers to the - absolutely necessary - efforts by the health care system to reduce costs. On the other hand, there are opportunities waiting within new areas of application and work through innovation. In other words, there is a market for problemsolving and service offerings, especially in regard to helping the health care systems get out of the financial squeeze they are in. By developing such offerings, the pharmaceutical industry can conquer new territory, not only in the traditional field of active substances, but also regarding healthcare and treatment services for the elderly or sick.

The companies should therefore try to stray from the beaten path of common therapies and strategies and break new ground. The industry needs a vision – and business models that supplement (not necessarily replace) the current ones. For example, these business models need to include new methods of early detection and prevention of illnesses to a greater extent than before. Particularly with respect to age-related ailments, it is important to put prevention ahead of severe and expensive treatment. In Germany, however, the health insurance companies still need to take these ideas to heart as they play a crucial part in the health care system in the truest sense of the word.

When looking for opportunities for growth, the pharmaceutical industry would be wise to also focus on (previously) unknown disciplines; for example, IT and other fields of digitalization, such as pioneering technologies for data collection, analysis and interpretation. Because for pharmaceutical companies, data access is essential - both as an indicator for the efficacy of their products and as a strategic decision-making aid. The new mathematical models of data acquisition provide useful approaches for a more precise determination of disease trends, as well as for measuring therapeutic efficacies.

How urgent tackling all of these tasks is becomes apparent from the actual developments in life expectancy. Statistically, those who were born in Germany in 1970 had an average of 67.2 (men) or 73.4 (women) years ahead of them. Ten years later, this had already increased to 69.6 and 76.3 years respectively. And boys born in 2015 will reach 78.4 years of age, while girls will reach 83.4 years of age.

Living in Switzerland appears to be even healthier. Men born in 1981 could expect 72.4 years ahead of them, while women could expect 79.2 years. In 1991, life expectancy for men was already at 74.1; for women, it was already at 81.2. By 2015, the prognoses had improved once again to 80.7 years for men and 84.9 years for women. The life expectancy curves are thus quite dynamic.

In the context of the slightly increasing yet still low birthrates, the result is that elderly people are making up a larger share of the population. By the end of 2013, around 81 million people were living in Germany. According to Destatis, approximately 17 million, i.e., roughly 20%, were 65 years old or older. After Italy, Germany has the second-highest share of elderly people in the EU. In Switzerland, this rate was still only at 18% in 2015.

"This results in one primary task for governments, health insurance companies, (research) clinics and the pharmaceutical industry: to minimize the number of years in which people are forced to live with one or several diseases."

Gerd Stürz, Market Segment Leader Life Sciences GSA

In both Germany and Switzerland, the trend is clearly continuing upward. According to the results of the 13th coordinated population projection, one out of every three Germans will be at least 65 years old by 2060. In Switzerland, the statisticians expect a good 26% of the population to be 65 or older by 2045.

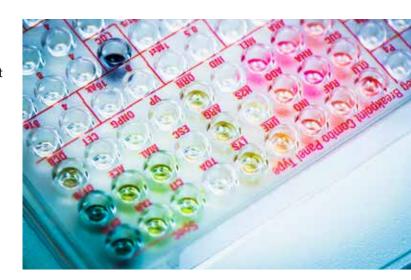
The numbers in both countries are alarming enough. For all participants - governments, health insurance companies, (research) clinics and last but not least the pharmaceutical industry - this results in one primary task: to minimize the number of years in which people are forced to live with one or several diseases. There is specific information about this from Japan, where research on aging is intensively conducted. Japanese men suffer from at least one serious disease during the nine years of life, while women suffer from at least one serious disease during their last twelve years of life.

Even a seemingly minor reduction in this period of six to ten months would provide tangible relief to health care and social budgets. The Japanese Government has concentrated its efforts on those areas of geriatrics that account for the highest costs: chronic diseases, ailments such as dementia, cancer, diabetes or osteoporosis. They require frequent prescriptions or regular contact with physicians, as well as hospital visits, operations or a care service up to and including palliative care.

The pharmaceutical industry can contribute to managing these problems in a variety of ways. Research into new drugs for the illnesses mentioned and a long series of additional illnesses including age-related hearing and vision loss will remain the foundation of the industry; however, beyond the traditional drug research there are also very promising and innovative approaches to geriatrics found in related disciplines such as biomedicine - for example, in the area of prevention or regenerative medicine.

The goal of regenerative medicine is to heal illnesses by restoring malfunctioning cells, tissue and organs. This can be achieved via a biological substitute for example, using tissue cultures as well as by stimulating the body's own regeneration and repair processes. Gene therapy also belongs to the repertoire of physicians who specialize in regenerative medicine.

Another biomedical advance is the development of senolytic medications, which kill aging cells in a targeted manner. These cells cease their cell division, accumulate over time and accelerate the aging process. "Disposing" of them could make the senior years significantly easier. Trials on mice have already shown success.



Even beyond the usual (molecular) school of thought, the demographic development of the pharmaceutical industry is creating new opportunities, particularly in the area of services associated with age-related diseases. In the broadest sense, most of them have something to do with digitalization, often with the processing and feedback of data - mostly patient data. When it comes to measuring therapy success and assessing remuneration, this service will become more important in the coming years.

These forms of service can benefit both the pharmaceutical industry itself and individual patients. There are already providers that collect individual health parameters on a continual basis in order to come up with behavioral and decision-making suggestions for individual customers while comparing general scientific data. Other innovative approaches in the digital universe include gamification (use of game-like elements in non-game contexts), bioelectronics and artificial intelligence. Classic pharmaceutical companies can therefore conquer new territory.

In a later phase, the industry - together with partners - could enter the service business altogether. Innovative medical devices, new forms of in vitro diagnostics and telemedicine open up completely new perspectives for home care. The Japanese Government is ascribing particular significance to this field of work. According to its research-based insights, many elderly people only require minimal support in order to continue to live independently.

The Japanese Post, IBM and Apple, for example, are working together to demonstrate what can be achieved at low cost. Age-appropriate apps, tablets and cloud services are intended to improve the quality of life of older patients by reminding them of doctor's appointments or to take their medication, encouraging them to exercise, updating their diet or calling attention to local activities. By 2020, the campaign aims to cover five million households. The Japanese pharmaceutical company Eisai is planning a similar campaign with its partner NTT.

The examples show two things: firstly, there is a wealth of creative initiatives for solving the problems caused by shifts in the age pyramid. And secondly, there are quite a lot of extremely varied players involved who have no relation to the pharmaceutical industry. If the pharmaceutical companies want to keep their foot in the door where geriatrics is concerned and participate in the growing business of providing care to seniors, they need new business models - those that include new partnerships as a way of tapping into competencies foreign to the industry. In any case, this will mean having to take the courageous step toward innovation that goes beyond traditional pharmaceutical research fields.

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How EY's Global Life Sciences Sector can help your business

As populations age and chronic diseases become commonplace, health care will take an ever larger share of GDP. Scientific progress, augmented intelligence and a more empowered patient are driving changes in the delivery of health care to a personalized experience that demands health outcomes as the core metric. This is causing a power shift among traditional stakeholder groups, with new entrants (often not driven by profit) disrupting incumbents. Innovation, productivity and access to patients remain the industry's biggest challenges. These trends challenge the capital strategy of every link in the life sciences value chain, from R&D and product supply to product launch and patient-centric operating models.

Our Global Life Sciences Sector brings together a worldwide network of 15,000 sector-focused professionals to anticipate trends, identify their implications and help our clients create competitive advantage. We can help you navigate your way forward and achieve sustainable success in the new health-outcomes-driven ecosystem.

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EYG no. 04179-174Gbl GSA Agency HFI 1707-443 ED None

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Engaged Aging

Aging is a megatrend as big as digital disruption. EY believes it is possible to realize the upsides of our aging world. In this engaged future, aging is no longer defined by isolation and limitation, but greater connection and possibility. Precision medicine becomes precision health. Today's elderly become tomorrow's "well-derly."

It is a powerful vision but getting there won't be easy. Join EY in engaging and collaborating around this critical topic in new ways. Our goal is to identify solutions with near-term, real-world impact. Together, we can realize the upsides of aging.

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