

Innovation Powerhouse GERMANY 2023



EXECUTIVE
FORECAST



Executive Forecast Germany: Innovation Powerhouse 2023

Produced by White Ink House LLC.

Credits: Executive Publisher: Ines Gray / Editorial Director: Santiago Nandin / Commercial Coordinator: Paulina Santamarina Aguirre / Editorial Contributor: Flora Mackinnon & Hannah Kreher

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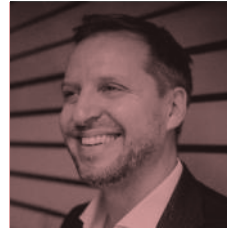
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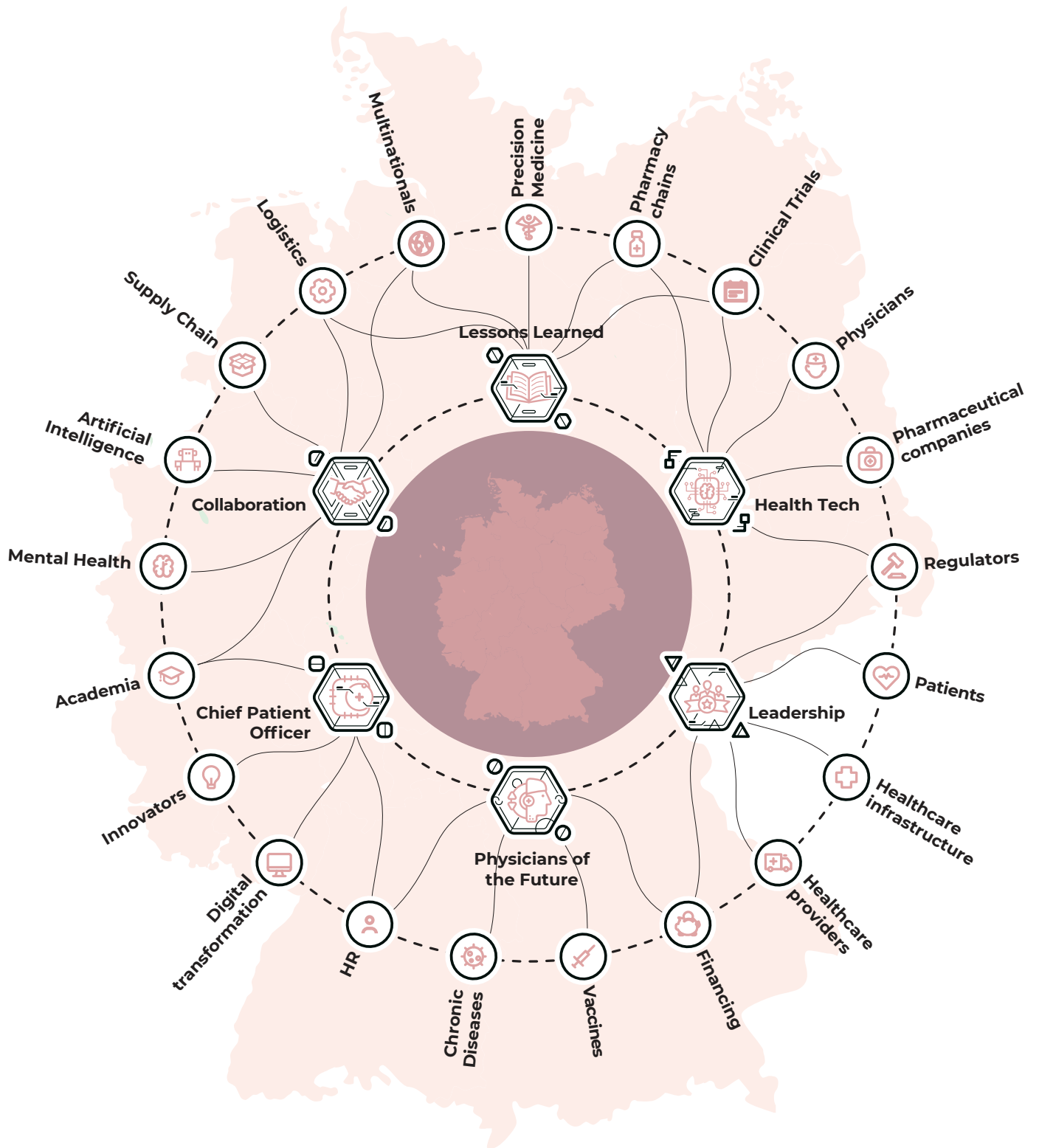


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Executive Summary

Executive Forecast is proud to present this comprehensive, relevant, and deep forecast that explores the current state and future trajectory of the German life sciences sectors, as seen through the eyes of the executives who are driving change in the industry.

Drawing from direct conversations with the CEOs of companies and the extensive data and resources provided by the OECD, WHO, IQVIA, and German institutions, our aim is to assemble and disseminate the invaluable perspectives and experiences of the trailblazers who are guiding the evolution of Germany's life sciences sector, one of the global references for innovation.

This strategic report showcases the most compelling aspects of our dialogues throughout 2022 and 2023 and aspires to draw light on challenges and prospects within the life sciences sector. Ultimately, we seek to establish an 'industry forward' perspective that prioritizes the well-being of patients, highlights the endurance of the system, bolsters business development, and shapes future policy.

As geopolitical challenges continue to shape the healthcare landscape, this report serves as a foundation for informed decision-making and actions. By addressing these issues head-on, the industry can work towards building more resilient healthcare systems. We hope this report inspires stakeholders to come together, driving positive change and progress in the healthcare sector.

Introduction

“The future depends on what we do in the present.” – Mahatma Gandhi

In the world of big pharma companies restructuring, macro-economic global trends are redefining the dynamics and landscape of healthcare. Germany is a market to keep a close eye on. As a country that once proudly led as an early adopter of innovation, and is today a reference for many other markets, Germany must adapt to these trends and develop sustainable access models. The report will explore how companies are navigating these changes, ensuring that innovations reach those who need them the most while balancing budgetary constraints in healthcare.

Some of the questions we look to answer include:

- **What will it take for Germany to remain a global beacon of innovation?**
- **Who are the executives advancing the sustainable-healthcare agenda?**
- **What are the policies that will allow progress on access in Germany?**
- **What will the role of Germany be in the global life sciences landscape?**

The German pharmaceutical landscape has long been esteemed for its contributions as the “Pharmacy of the World,” its relentless pursuit of innovation, and its unwavering commitment to German Quality. However, as global healthcare needs evolve at an unprecedented pace, it becomes imperative for Germany to reassess its position and strategize for the future. This report aims to analyze the challenges and opportunities faced by the German healthcare system, with a focus on the importance of healthcare in socio-economic development, the

need to drive forward through innovation, and the quest for increased perceived value in healthcare.

Germany’s distinguished reputation has been built upon a legacy of excellence in pharmaceutical manufacturing and groundbreaking medical advancements as well in the medical technology space. With a steadfast dedication to pushing innovation, the country has consistently been at the forefront of cutting-edge R&D. Germany is the third biggest market for medical technologies in the world, and the industry alone employs more than 250,000 people in Germany. As we look ahead, it is crucial to capitalize on the quest for innovation and leverage it to overcome the pressing matters of the sector not only in Germany but globally.

The significance of healthcare in the socio-economic development of a nation cannot be overstated. A healthy population serves as the backbone of a thriving economy, driving productivity and fostering overall well-being and long-term sustainable development.

Budgetary limitations in healthcare pose a critical challenge in providing comprehensive and high-quality services to all citizens yet provide an opportunity to make better use of resources. Understanding the reasons behind inadequate budgets and exploring innovative solutions to optimize resource allocation will be central to our examination.

This report presents insights from policymakers, regulators, association representatives, business leaders, and other key opinion leaders. Their perspectives on the healthcare landscape and their visions for the future will be invaluable in shaping effective strategies for reform.



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Chapter I

Snapshot of Healthcare in Germany

“We need to make sure that our healthcare system is strong and resilient so that we can be prepared for future pandemics and other health threats.” shares Federal Minister of Health Prof. Karl Lauterbach.

According to GTAI, Germany Trade & Invest, Germany is Europe's N° 1 pharmaceutical market in terms of market volume, number of patients, medical technology manufacturers, and healthcare providers.



Healthcare in Germany

Germany has a universal multi-payer healthcare system funded by statutory and private health insurance. Statutory health consists of competitive not-for-profit health insurance plans that are privately run and are referred to as ‘sickness funds’. The German healthcare system is often regarded as one of the best healthcare systems in the world¹, offering its population universal health insurance coverage and comprehensive benefits with comparably low cost-sharing requirements. It provides good access to care with free choice of provider and relatively short waiting times when compared to similar countries, partly due to good infrastructure, a dense network of ambulatory care physicians and hospitals, and a high level of service provision.

The German healthcare system is based on four basic principles²:

- **Compulsory insurance:** Everyone must have statutory health insurance (Gesetzliche Krankenversicherung GKV), provided their gross earnings are under a fixed limit (Versicherungspflichtgrenze). Anyone earning more can choose private insurance (Private Krankenversicherung PKV).
- **Funding through insurance premiums:** Healthcare is mostly financed from the premiums paid by insured employees and their employers, with tax revenue surpluses also contributing. State-funded healthcare systems such as Great Britain or Sweden draw on tax revenue. In market-oriented systems, the United States, for example, in the event of illness, many people carry treatment costs and subsequent earnings loss or must get private health insurance.
- **Principle of solidarity:** In the German healthcare system, statutory health insurance members jointly carry the individual cost risks of medical care in the event of illness. Everyone covered by statutory insurance has an equal right to medical care and continued wage payment when ill, regardless of their income and premium level. The premiums are based on income, meaning the rich support the poor, and the healthy support the sick. However, these premiums are calculated based on a percentage scale up to a certain income level (“Beitragsbemessungsgrenze”). Anyone earning more pays the same maximum premium.
- **Principle of self-governance:** While the German state sets the conditions for medical care, the organization and financing of individual medical services is the responsibility of the self-governing bodies within the health care system, made up of members representing doctors and dentists, psychotherapists, hospitals, insurers, and the insured. The Federal Joint Committee (“Gemeinsamer Bundesausschuss” or G-BA – please also see below: “Structure and institutions of the health care system”) is the highest entity of self-governance within the statutory health insurance system.”

The healthcare industry plays an important economic role, generating every 8th Euro of gross added value. With 7.7 million employees, every sixth job in Germany is in the healthcare sector, creating over a million jobs since 2012. Except for the 2020 crisis, the healthcare industry has grown nominally every year since 2012. (BDI)

Healthcare spending in Germany exceeds €400 Billion (2019), not including expenditure for wellness and fitness. The market has grown at a yearly rate of 4.1% over the past ten years. With exports in excess of €126 billion, healthcare is one of the largest economic sectors in Germany (GTAI).

	2020	2023
Healthcare Expenditure (by OECD definition)	€ 400.4 billion	€ 457 billion
Market Growth (Ø 2006-2017)	4.1% (CAGR 2006-2017)	5.4 % (CAGR 2016-2021)
Employment	7.5 million	7.7 million
Exports	€ 131.2 billion	€ 158 billion
Imports	€ 109.2 billion	€ 145 billion
Ammount of companies	Medical technology: 12,000 Pharmaceutical: 500+ Biotechnology: 820	Medical technology: 13,000 Pharma: 500+ Biotechnology: 710

Source: Statista, BMWK, OECD 2020, for 2020 and Destatis, BMWK, BVMed 2023 for data of 2023

1 <https://pubmed.ncbi.nlm.nih.gov/34232120/#:~:text=Germany's%20health%20care%20system%20is,comparably%20low%20cost%2Dsharing%20requirements>
 2 InformedHealth.org [Internet]. Cologne, Germany: Institute for Quality and Efficiency in Health Care (IQWiG); 2006-. Health care in Germany: The German health care system. 2015 May 6 [Updated 2018 February 8].

Germany, Facts and Figures

Germany is the 4th largest economy and the third-largest export nation globally. When measured as a share of GDP, health spending in Germany is the highest in Europe and has consistently increased over the last twenty years, as can be observed in Box 2. The European trend over the previous two decades has been a systematic rise in health-care spending and investment in Europe, with Germany reflecting the biggest boost, closely followed by France.

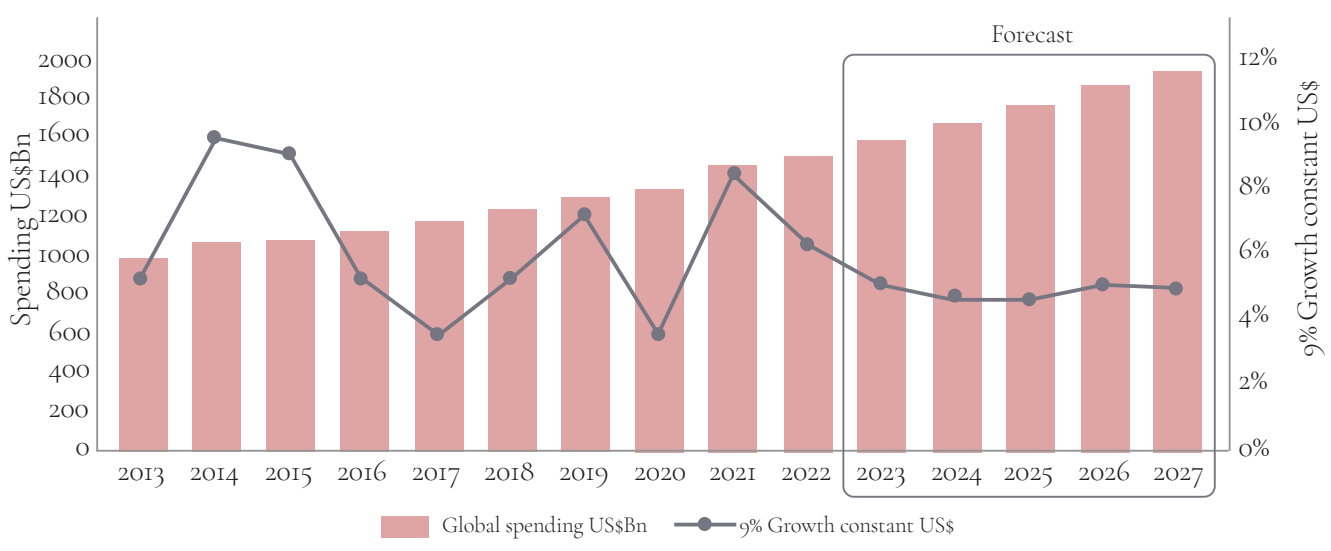
With a population of 84.3 million, 42.8 million women, and 41.5 million men, Germany's Gross Domestic Product (GDP) per Capita reached 48,527.400 \$US in Dec 2022. The share of the overall economy has increased from 11.4 percent in 2012 to 12.1 percent in 2021. In 2021, the gross value added in the healthcare industry increased by 5.2 percent compared to the previous year (BDI). The industry share in gross value added is 26.6 %, making it the highest among the G7 countries. The strongest sectors are vehicle construction, electrical, engineering, and chemical industries.

The World Bank estimated Germany's GDP at \$US 4.5 trillion (nominal; 2023 est.) and \$US5.55 trillion (PPP; 2023 est.), with 12.8% of the GDP going to Health Expenditure, more than any other EU Member State. According to the EUROSTAT, the Gini coefficient of equivalized disposable income was 28.80% in December 2022.

About 87% of the population receives primary coverage through statutory health insurance, and 11% has private health insurance. The statutory health insurance (SHI) system comprises 110 sickness funds (acting as third-party payers), covering around 88% of the population. 74% of health spending was publicly funded, and most (57%) went toward SHI. The current life expectancy for Germany is 81.88 years, a 0.19% increase from 2022. It also has a very low infant mortality rate (2,13 per 1,000 births), a 9% decline from 2022.

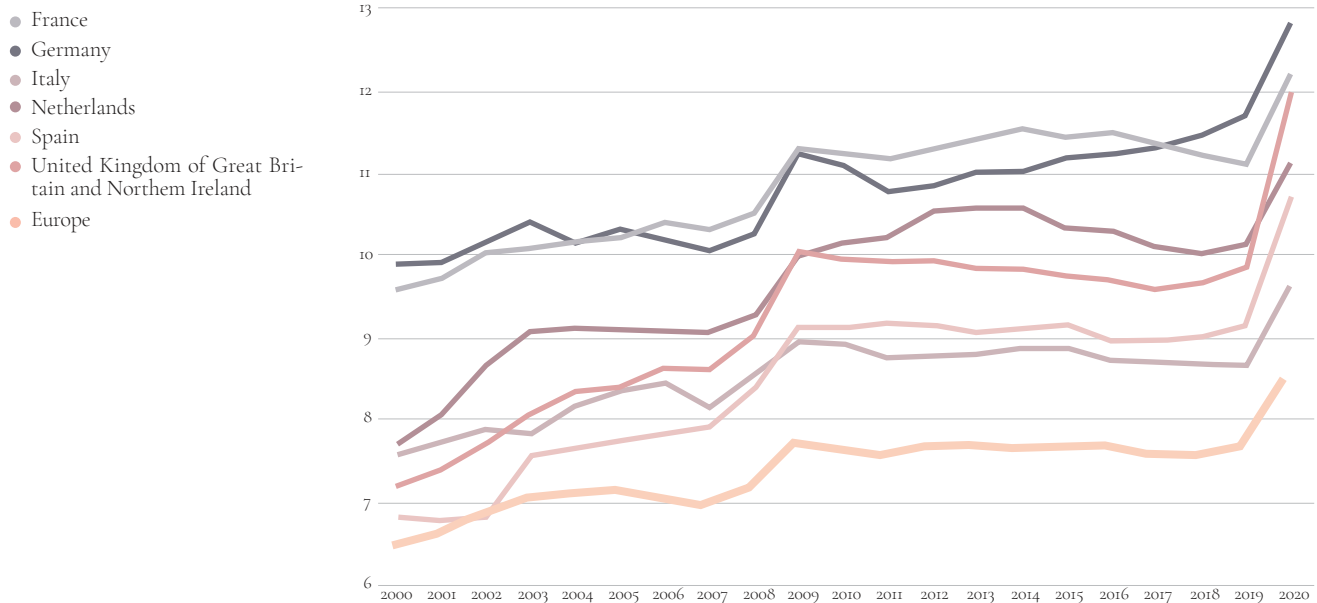
Germany is a cosmopolitan country shaped by a pluralism of lifestyles. Literacy is over 99%, and the country enjoys a strong educational reputation worldwide and a varied higher education system. German universities and higher education institutions are sought-after cooperation partners for the industry.

Global medicine market size and growth 2013-2027



Source: IQVIA Market Prognosis, Sep 2022; IQVIA Institute, Nov 2022.
 Notes: Does not include estimates for COVID-19 vaccines and therapeutics.
 Report: The Global Use of Medicines 2023: Outlook to 2027. IQVIA Institute for Human Data Science, January 2023.

Current health expenditure (CHE) as percentage of gross domestic product (GDP) (%)



Dedicated innovation clusters provide benefits along the entire value chain, such as education and training, cooperation and partnering, R&D funding, and shared facilities. Thousands of companies participate every year in research projects with partners from the industry and scientific institutions, emphasizing Germany’s reputation as a leading environment for healthcare and life sciences due to its outstanding capabilities, resources, and infrastructure.

Germany has long had the most restriction-free and consumer-oriented healthcare system in Europe. Patients can seek almost any type of care they wish whenever they want.

While global health spending steadily increases against the country’s GDP by approximately 10% yearly, the medicine market growth does not grow at the same steady rate. Over the years, since 2013, medicine growth has peaked on occasions, the last peak predictably due to the Covid-19 pandemic, but the forecast for the next five years shows a trend towards a plateau effect. The question is, why is the market unable to keep up with health spending?

In terms of medical technology, Germany is very successful in the global market as well. Sales were more than €36 billion in 2021. The German MedTech market is almost double

the French market. The medical technology industry has more than 250,000 employees working in Germany, making it an important driver for growth in terms of economic spillover and social development.

Burden of disease

In 2019, cancers and cardiovascular diseases had the highest impact in the German burden of disease map with approximately 5.32 and 5.13 million DALYs (disability-adjusted life years), respectively. These two areas also have the highest-burden across the European Union. Germany is an aging society; by 2035, 24 million people will be 65 or older (31% of the population). Chronic and long-term diseases account for about 80% of German healthcare spending (€ 200 billion)

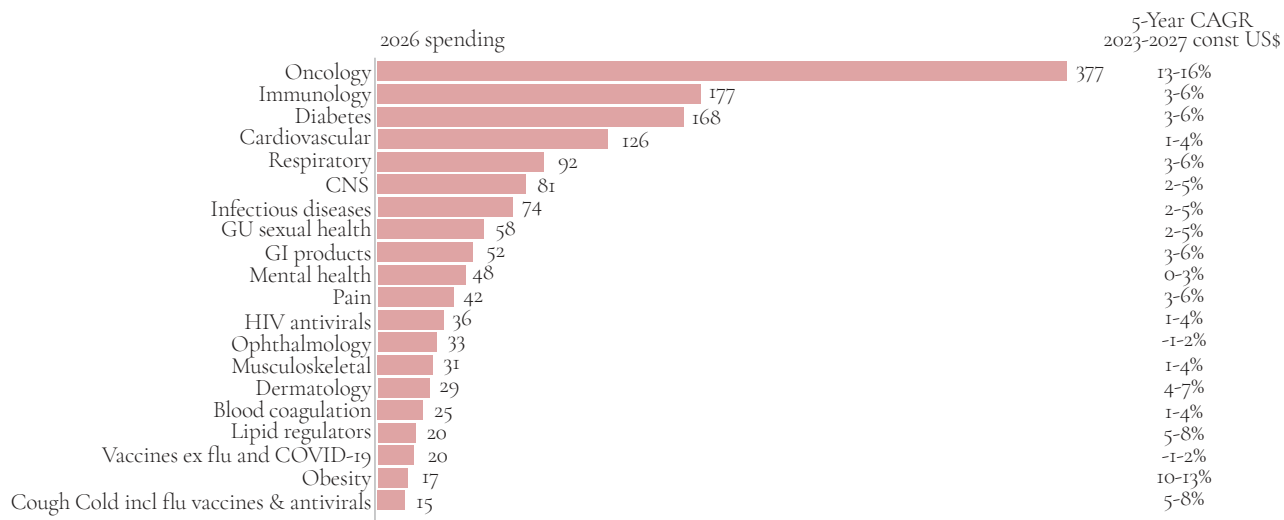
Therapeutic areas trends

Dr. **Karl Broich**, President of the Federal Institute of Drugs and Medical Devices (BfArM), claims, “We already know that within the next five to ten years, 50% of the market will be represented by cancer treatment and associated applications. We have strategically increased



our experts in oncology and other fields and trained people from different areas to be oncology experts.” Adding, “Recently CHMP at EMA approved two new cancer drugs for a histology-agnostic indication, and BfArM participated in the assessment.” He believes we will see more and more of such development, particularly in oncology, “It is 18 years since we have had a mandatory approach in oncology products for centralized marketing authorization. In the first six years, 24 new products were approved, 48 in the second six years, and 76 new oncology products, medicine, and cancer treatments in the last six. This trend will continue over the next years.” Dr. Broich observes that individualized therapies for many chronic disorders like diabetes are coming, and digital applications will better monitor chronic diseases, “especially in cases such as hypertension and diabetes, there will be major improvements. We will see a more connected digitalized health ecosystem; digital tools will help to better monitor and understand the many chronic disorders. The new digital tools will help find better biomarkers, help real-world data define future indications better, and increase and improve individualized patient care, which will be a huge topic moving forward”.

Top 20 therapy areas in 2027 in terms of global spending with forecast 5-year CAGRs, const US\$



Source: IQVIA Forecast Link, IQVIA Institute, Nov 2022.
 Report: The Global Use of Medicines 2023: Outlook to 2027, IQVIA Institute for Human Data Science, January 2023.



One Healthcare, Multiple Perspectives



A New Concept for Health Partnerships

The German government established the German Health Alliance (GHA) jointly through the Federal Ministry for Economic Cooperation Development and the Federation of German Industries. GHA is the only

initiative working in a multi-sector consolidation with the private sector, the industry, NGOs, civil society, foundations, science, and academia on strengthening health systems. **Roland Göhde, Chairman of the Board for GHA**, observes, “Our huge mix of members covers a broad range of health expertise while sharing a strong international focus and providing

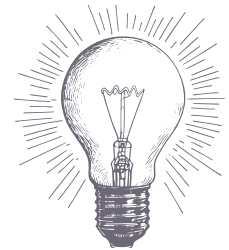
important services to the people. GHA presented the multi-focus health system strengthening at the G20 in Germany in 2017, and we are regarded as a blueprint for multi-sectorial consolidation”. **Mr. Göhde** believes, though complex, partnerships for climate change, energy, and health are necessary and offer important opportunities. “Over the past two years, we have built on development, establishing strategic alliances, and working in multi-association configurations with BFA research-based pharmaceutical companies in Germany. With the German government and the close cooperation of BMZ and GAZ, we are working on a new concept for health partnerships, a project called Coalition for Health. GHA is exclusively international”.



Driving Change in Healthcare: The Federal Institute for Drugs and Medical Devices’ Role in Nurturing Medical Innovation

BfArM, the Federal Institute for Drugs and Medical Devices, is one of the two national regulatory bodies within the German Federal Ministry of Health; it approves drugs and medical devices in Germany and works alongside the Paul Ehrlich Institute (PEI). The two regulatory agencies have divided responsibilities, and BfArM is responsible for chemicals, generic products, and medical devices. During the pan-

demic, it approved the first therapeutics for Covid-19 and other EMA procedures.



More than a regulator and gatekeeper, **Dr. Karl Broich** insists BfArM “is an enabler that fosters innovation, taking the regulatory system to the next stages. The European system can become a pioneer, a lucrative location in the research and development of innovative



healthcare. The new clinical trial regulation is an important milestone to provide a better and safer framework to bring innovation safely and quickly to European patients.” According to Dr. Broich, the pandemic showed the fragility of the supply chain and its over-dependence on Asian APIs, “The representatives of the BPI, VFA, and the BAH agree on the need for more money and innovation in the German system. We must be flexible and agile while maintaining

the efficacy and safety of medicines and medical devices”. Dr. Brioch believes the new digital environment will simplify procedural issues and avoid work duplication. “Our regulatory work will change; we must be open-minded enablers of the new statistical approach with complementary real-world evidence and data. The solid framework will enhance the safety and agility of introducing innovation.”

Bridging the Gap in AMR: The ‘One Health’ Approach



Antimicrobial resistance (AMR) refers to the phenomenon wherein microorganisms evolve to withstand the effects of antimicrobial drugs previously effective in treating infections caused by those microorganisms.

This adaptive resistance is intrinsic to the microorganisms themselves, arising as a consequence of their natural evolution.

According to the Institute for Health Metrics and Evaluation, the global health research center at the University of Washington, 4.95 million deaths per year are associated with resistant bacteria – with at least 1.27 million deaths per year directly attributable to antimicrobial resistance. Therefore, AMR can be seen as a “silent pandemic”, standing as a prominent contributor to mortality on a global scale.

The WHO defines AMR as “one of the greatest global threats to the health of humans and animals, plants and ecosystems as well as a threat to the achievement of the Sustainable Development Goals (SDGs).” As AMR affects humans as well as animals and the entire ecosystem, the problem needs an integral, multidisciplinary approach, falling under the concept of ‘One Health’ policies.

Factors like self-medication, overuse, and clinical misapplication of antibiotics are the main triggers of AMR to be accelerated. While in the European Union/European Economic Area there has been a reduction in overall antibiotic consumption across both food-producing animals and humans, a concerning uptick in the usage of broad-spectrum antibiotics specifically in humans was still observed. In 2020, the consumption of broad-spectrum antibiotics exceeded that of narrow-spectrum antibiotics by a staggering 3.5-fold, disregarding the latter’s status as the recommended first-line therapy. This worrying trend is causing significant concerns about how it might affect the spread of AMR.

Worldwide the spread of antimicrobial resistant bacteria is increasing faster than the availability of new therapies to address them and making common infections harder to treat. The silver lining amidst this seriousness is that it is, in fact, preventable. There exist actionable measures that can be undertaken to pull the breaks on this alarming progression.

Health Industry representatives like **Thomas Cueni**, General Director from the International Federation of Pharmaceutical Manufacturers & Associations, IFPMA, have taken clear initiatives establishing these kinds of cross-sectorial programs to tackle the global AMR challenge. As Chair of the AMR Alliance, the largest private industry collaboration gathering the entire industry chain involved in human health, he established the \$1bn AMR Action Fund to support the development of new antibiotics. Funding will go to smaller biotech companies with the goal of creating 2-4 new antibiotics for patients by 2030, helping to cross the so-called “valley of death” that exists between laboratory research and clinical trials, as Cueni explains.¹



Cueni stated that “We must fundamentally change the way we value new antibiotics. Rather than linking their price to the quantity used, we should instead regard them as an insurance policy for medicine and health services” and emphasizes that, “adverting the worst-case scenario of ten million annual AMR deaths by 2050 would require an investment of \$42 billion over the course of a decade. But that would represent a mere fraction of the huge economic cost of AMR between 2015 and 2050, which the review said could top \$100 trillion.”

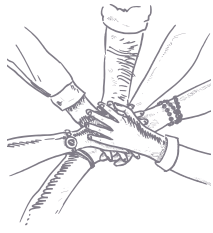
In Germany, representatives from the BEAM Alliance (Biotech companies in Europe combatting Antimicrobial resistance), the German Center for Infection Research (DZIF), the Global AMR R&D Hub, the German Society of Infectious Diseases (DGI), the Paul Ehrlich Society (PEG), and the German Association of Research-Based Pharmaceutical Companies (vfa) launched the German Network against Antimicrobial Resistance (DNAMR) in 2022, with a clear aim to accelerate the development, implementation and use of new active substances by sensibly linking research funding and market incentives.²

In a collective effort, this association represents the urgency of the topic for global health, actively engaging with German policymakers to find foresighted solutions to the threatening problem.

Recently, in July 2023 the WHO published its “A one health priority research agenda for antimicrobial resistance”, emphasizing the need for increased inter- and multi-disciplinary research and strong global, regional, and country research partnerships and platforms, setting a global standard for action.

¹ <https://www.project-syndicate.org/commentary/developing-new-antibiotics-to-tackle-antimicrobial-resistance-by-thomas-cueni-2020-11?barrier=accesspaylog>

² <https://www.dzif.de/en/german-network-against-antimicrobial-resistance-launched>



Healthcare through a Social Impact Lens

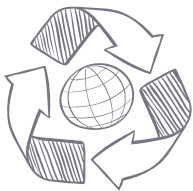
Prof. Dr. Dennis Ostwald, from the WifOR Institute, a family-owned institute, is driven by a desire to make the world a better place. The work at the institute focuses on three research



areas: Sustainability, Health, and Labor Markets. Through their reports, “they advocate to demonstrate the potential on health to create societal value and stimulate resilient growth,” Prof. Ostwald shared when interviewed.

In their Social Impact Meta study, they aim to provide an estimate of the potential value a new medicine brings to society beyond the

pure clinical scope. As they mention in their report, “A Social Impact analysis will help to create an understanding that investments in pharmaceuticals create societal impacts which are measurable in economic terms.” Prof. Ostwald stressed that “To drive innovation in the healthcare sector, accessing new and diverse data is crucial. Simply stating that healthcare is an investment is insufficient; concrete examples and visualizations are necessary. The Health Economy Reporting aims to showcase empirical evidence for the importance of investing in healthcare to ensure a healthier and more prosperous future for generations to come. Investing in healthcare improves public health, reduces the social burden of diseases, and drives resilient economic growth”.



Advancing Greener Medtech

BVMed, the German Medical Technology Association, represents over 240 manufacturers, distributors, and suppliers in the medical technology industry and providers

of medical aids and home care. According to data from BVMed, the revenue of the manufacturing medical technology companies (considered are those with more than 20 employees) in Germany was more than 36 billion euros in 2021, according to the official economic statistics. The export rate was at around 66 percent. The medical technology industry employs more than 250,000 people in Germany.



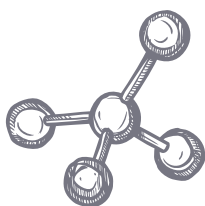
Dr. Marc-Pierre Möll, Managing Director of BVMed, states, “We promote and represent the combined interests of the medical technology industry and trade companies. The association contributes to developing an effective and efficient healthcare system, devoting itself to supplying appropriate, need-based, economical, and high-quality medical devices

to patients in market-based conditions. BVMed supports members through a platform for constructive dialogue, representing their interests to policymakers and helping to shape laws, policies, regulations, guidelines, and standards.

Dr. Möll references three big challenges, which could also be considered opportunities if well managed by executives:

- “83% of all MedTech companies are small and medium-sized companies. Around 30% still don’t have access to a notified body, which is an organization that conducts conformity assessments under the relevant EU Directives and Regulations; thus, businesses are in danger.”
- “Companies prefer placing innovative products in the US rather than in the European market, meaning we are losing access to better products, especially concerning patient care.”
- “In Germany, most companies have fixed and inflexible contracts for reimbursement, which can’t be changed. Costs are rising significantly, challenging the supply chain. The current high costs for raw materials, intermediate products, energy, and low-priced contracts lead to an exceptional economic situation.”

“To complicate matters further, the ‘Green Deal’ of the European Commission aims to make Europe the first climate-neutral continent. A program with more than eighty directives and regulations coming up for the industry to be more sustainable—with massive effects and impacts—will be a big challenge for the industry.”



Catalyzing for Innovation in the Pharmaceutical Industry

The German Pharmaceutical Industry Association (BPI) represents a broad range of the pharmaceutical industry at a national and international level. With over 50 years of experience in the field of developing and distributing pharmaceuticals, its objective is

to develop a future-oriented healthcare system and participate in discussions on health policy reform. Around 300 companies with some 74,000 employees are affiliated with the BPI, among them pharmacies selling pharmaceuticals in their own name, as well as multinational affiliated groups distributing their products worldwide. The association campaigns to maintain a variety of therapeutic quality-oriented pharmaceuticals and ensure patients receive the needed medicines and therapies.

“The healthcare sector projected a deficit of about €17 billion for 2023, which could be even worse if the current system does not change,” declares **Dr Kai Joachimsen, CEO of BPI.** “In March 2022, Health Minister Prof. Karl Lauterbach proposed a financial stabilization of the Statutory Health Insurance System, which the healthcare sector opposes because its implications are detrimental to the entire pharma industry”.



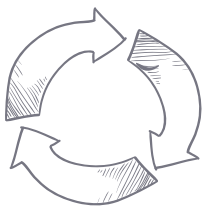
He is of the opinion that the new bill would add new challenges to the pharmaceutical industry making it more difficult to ensure healthcare sustainability. “There is an increasing demand for medical services while financing is decreasing. The sector and the state must design a sustainable healthcare system for the future, but there are factors that threaten the development of a sustainable pharmaceutical environment and must be addressed if we want to keep Germany as a pharmaceutical location”.

ceutical industry has had a price moratorium since 2010, with fixed pricing. The final draft of the bill plans to extend it until the end of 2026, meaning fixed pricing for pharmaceuticals for 16 years, making business challenging due to the costs for energy, raw materials, and APIs are increasing with the current political climate and macroeconomic scenario. Moreover, the current rebate system is price-driven and does not allow for added value, such as the quality of the product, the location of production, or cover for shortages in supply. Europe needs more autonomy to become more independent and produce locally as a nation, sector, and continent.

Digitalization could address healthcare issues, improve patient experience, and expand data and digital knowledge. R&D-based companies need access to data that is generated within the healthcare system. With better use of Real-World Evidence data, clinical trials might be fewer, more cost-efficient, less time-consuming, and more

accurate. It is as important to develop compliant, data-driven policymaking. Exchanging information at a European or international level will help to improve faster. Initiatives around a European Health Data Space (EHDS) are therefore of utmost importance. Access to data and interoperability of data is key. AI is a big game changer here. The business model can become more efficient and accurate and yield more effective outcomes through digitalization.

For the president of the Association of Research-Based Pharmaceutical Companies (vfa), Han Steutel, “The rapid pace at which COVID-19 vaccines were brought to market with significant participation of German companies has shown what the pharmaceutical research is capable of in this country. Almost 11 % of the German Pharmaceutical companies’ sales are re-invested in R&D”. This reinforces how Germany has a great positive impact on medical progress, and it is doing so by securing high-quality jobs and generating high-added value.



A Sustainable Pharmaceutical Future: Dr. Elmar Kroth’s Strategic Plan for BAH

The **German Medicines Manufacturers’ Association (BAH)** represents the interests of about 400 member companies responsible for 80,000 jobs in Germany. BAH member companies are

huge contributors in securing Germany’s supply of medicines, producing nearly 80% of the prescription-free drugs sold in pharmacies, almost two-thirds of the prescription medicines, and a major part of the substance-based medical devices, with effective and safe products. BAH strongly supports the statutory protection of the owner-operated pharmacy as the primary institution for distribution.



Dr. Elmar Kroth, Managing Director of Scientific Affairs at BAH, shares, “Our members come from a broad spectrum, medium-sized and global, companies of different sectors, companies in the chemical sector as well as herbal and homeopathic product manufacturers, original and generics manufacturers and a lot of pharmaceutical sector service providers such as publishing houses and lawyer companies. This gives us a 360° view but also the challenge of dealing with the diverse interests of our stakeholders. We also represent manufacturers with prescription-only and OTC products”.

BAH’s priorities include fixing price regulations for the different categories and the general procedures of the market access conditions for innovative products. They are discussing the potential for the upcoming review of the European pharmaceutical law with AESGP, their European umbrella organization, the prospect of real-world data, evidence studies, and their value in randomized clinical trials and other studies. They support the local community pharmacies because the role of local pharmacies is very important in Germany, as there are no big pharmacy chains.

According to Dr. Kroth, **digitalization and sustainability are the two main cross-functional challenges**, “Regarding the supply chain, we are assessing the regulatory framework at the national and European levels. We are analyzing how the upcoming updates in the

European legislation will impact the industry”. The work scope includes technical to social issues, evaluating, assessing, and inspiring member companies with best practice examples. “We share best practice examples for technical solutions within the industry regarding investments to reduce costs, save energy to become more sustainable, and we work on creating joint documentation for our service lines chain and human rights provisions within the supply chain, which companies must fulfill.”

Key facts to consider for Germany¹:

- The price freeze was maintained until 2026; the mandatory rebate increased from 7% to 12%
- GKVFinStG has now been passed – aims to create €17 Bn in savings.
- Price cannot exceed the appropriate comparator if the drug-assigned unquantifiable or minor added benefit.
- Reduction of free pricing from 12 to 6 months
- Orphan sales threshold reduced to €30Mn.
- Pharmacy-level biosimilar substitution
- Penalties for uneconomical pack sizes that induce wastage.
- Pharmacy level biosimilar substitution
- Penalties for uneconomical pack sizes that induce wastage

¹ https://www.iqvia.com/-/media/iqvia/pdfs/library/presentations/presentation_global_meds_2023_webinar.pdf

Dr. Kai Joachimsen

Chief Executive Officer
BPI



EF: What is the current state of Healthcare in Germany?

KJ: The healthcare sector projected a deficit of about €17 billion for 2023, which will deteriorate further if the system does not change. In March 2022, the Health Minister proposed a Financial Stabilization of the Statutory Health Insurance System, which the healthcare sector opposes because its implications are detrimental to the entire pharma industry. We see an increasing demand for medical services while financing is decreasing. The sector and the state need to design a sustainable healthcare system for the future.

The pharmaceutical industry has fixed pricing since 2010, and the bill is planning to extend it until 2026, making it challenging to do business. The reference price system is strict, and the costs for energy, raw material, and APIs are increasing, making local production unaffordable.

The proposed bill also includes changes to the Pharmaceuticals Market Reorganization Act (AMNOG), which will negatively impact reimbursement schemes. *The current rebate system is price-driven and does not provide any premium for added value, such as quality or location of production. These factors threaten the development of a sustainable pharmaceutical environment, and it is crucial to address them to maintain Germany's status as a pharmaceutical location.*

EF: Can companies fail to meet demand when they have a tender without backup products on the market?

KJ: In Germany, supply can be a challenge as companies with rebate contracts must ensure supply to avoid significant fines. Our proposals to improve the current rebate contract system have not been considered so far because of the financial deficit of the sick fund.

To ensure sufficient supplies, it is necessary to award the tender to multiple companies instead of one. This would increase the likelihood of product delivery. Also, products that are critical regarding their supply situation and that are essential for healthcare provision should not be tendered at all. Another factor that should be considered is local production within the EU since this significantly reduces dependency on logistical or geopolitical circumstances that may jeopardize a reliable supply situation.

We must enhance local production to achieve greater independence and promote more autonomy in Europe.

EF: How does the energy situation affect the industry?

KJ: According to the Ministry of Economic Affairs' action plan, in the case of limited energy supply, the gas delivery will be allocated to protected customers, such as private households, social entities, and hospitals. The pharmaceutical industry is not a protected customer, so it would have to wait to be supplied. Although we understand the challenges of a shortage for households and industries, supplying patients with medication

remains essential. The lack of gas could create a domino effect in other medical industry sectors. At first sight, the pharma industry may appear to be less gas-dependent compared to the chemical industry; however, the materials needed for medicine development and production, like blisters, packaging, or vials, come from gas-dependent industries, which are not protected if there were a gas shortage.

EF: How is digitalization utilized among your members, and how do you see this evolving?

KJ: The Healthcare sector needs to ensure that we make better use of digitalization. It will allow us to get better data faster and ultimately share it between stakeholders to encourage and improve research, particularly regarding orphan drugs. R&D-based companies need access to data generated in the healthcare system. *With better use of Real-World Evidence data, clinical trials might be fewer, more cost-efficient, less time-consuming, and more accurate. It is also important to develop compliant data-driven policymaking. Initiatives around the European Health Data Space (EHDS) are paramount. Access to data and interoperability of data is key.*

Industries like aviation conduct a continuous assessment of relevant data. That enhances the quality of service and is mandatory for making informed decisions.

Healthcare professionals are sometimes reluctant to adapt to digitalization, often for pretended data protection reasons. However, patients are willing to share their data for better services. And, as the aviation analogy shows, data-driven decisions are the way to more efficient healthcare services and better healthcare delivery.

EF: What are the biggest benefits of leveraging technology in the industry?

KJ: Through digitalization, small and medium-sized companies can catch up with the market through aggregated data and research. AI is a big game changer. The business model can become more efficient and accurate and yield more effective outcomes. There is also a huge opportunity to accelerate HTAs. Regulatory processes and decisions could be better informed, faster, and more advanced.

EF: How do you want the sector to be remembered?

KJ: The biggest accomplishment for the sector would be the acknowledgment from society and political stakeholders for the value the sector delivers to patients and the industry's positive economic impact on economies. *Our industry's positive impact on society, both ethically and economically, is an accomplishment. The pandemic is a prime example of this, as without the vaccine, we would still be struggling.* We should be considered fundamental stakeholders of society instead of a niche industry. We are part of society as corporate citizens. We want to contribute to making this world a healthier place.

Dr. Elmar Kroth

Managing Director of Science,
BAH



EF: What are BAH's current priorities and agenda?

EK: We have a 360-degree view of the pharmaceutical supply spectrum, encompassing companies of various sizes and sectors, including the chemical sector, herbal and homeopathic areas, generic manufacturers, and service providers like publishing houses and law firms. This broad view poses both positive and challenging aspects as we strive to balance the diverse interests of our stakeholders. We enjoy strong political support and provide significant value to our partners.

As we represent manufacturers with prescription-only and OTC products, their priorities vary. As key issues in the RX market, BAH's priorities are fixing price regulation and the general procedures of the market access conditions for innovative products. The market for innovative products was well-driven over the past year, and we need to ensure that new policies will sustain this.

In the OTC sector, it is different because, since 2004, these products are -with some exceptions- not valid for reimbursement. Our challenge here is to facilitate switches, meaning the change from prescription-only to non-prescription. This procedure is tenuous and based on ingredients instead of products. To create a more positive scenario, we are discussing incentives for switching from prescription-only to OTC at the European level and exploring the value of real-world data studies.

We work with pharmaceutical partners and organizations to support local community pharmacies, which play a vital role in Germany as there are no large pharmacy chains.

EF: What sustainability challenges do BAH members face today?

EK: Digitalization and Sustainability are the two main challenges. We are assessing the regulatory framework at national and European levels, and analyzing how upcoming European legislation will potentially impact the industry, evaluating the consequences in discussion with our members.

Another focus of our service relies on creating joint documentation on the supply chain and the human rights provisions within these supply chains. To do so, we provide a comprehensive questionnaire that can be used by all our members.

We also have communication strategies to increase awareness of the current challenges. The scope of our work is broad: from technical to social issues. The key point is to evaluate, assess, and inspire our member companies to invest, reduce costs, or save energy by best practice examples.

EF: How are you overcoming the current supply chain issues?

EK: Pandemic taught us that the pharma supply chain is complex and reliant on ingredients from China and India. Due to climate change and global warming impacts, we are facing increasing problems in the supply chain. Although, based on international standards, production could be sustainable in China and India as well as in Germany or Europe, reviewing a supply chain is much easier when producing locally. However, due to the various price-reducing instruments, a large part of drug manufacturing is in countries outside of Europe.

The production of active ingredients for antibiotics is mainly taking place in China only. We support API sites across Europe and Germany to create a robust supply chain. Still, this shift is limited due to prices and whether health insurance companies are willing to pay a significantly higher price for RX products sourced by these sites. Currently, there is no alternative to sourcing. Complex problems require complex solutions.

EF: What challenges do you foresee regarding AI and technology within the medical sector?

EK: Digitalization is a continuous process. For decades, we have been part of working groups on the electronic submission of regulatory documents, electronic common technical documents (eCTD), and adverse drug reports.

AI is a different matter as we discuss real-world data or evidence. It could be used to evaluate the off-label use of medicinal products to extend their authorization or for switches from prescription to non-prescription status. Many people carry data-collecting tools, such as cell phones or fitness bracelets. The information gathered could be used for various regulatory purposes. We are currently discussing this matter with national and European authorities. We anticipate receiving guidance on this matter, which could be incorporated into the review of European pharmaceutical law.

The pandemic was a boost for digitalization in every manner. We learned to use digital tools in everyday communication and created the technical environment to connect our sites in Bonn and Berlin when travel was impossible. Remote work needed to work instantly, and it did.

EF: What does BAH's survey reveal about changes in trust towards the pharmaceutical industry?

EK: The role of the pharmaceutical industry during the pandemic was recognized positively. The companies made every effort to supply the market, and the public recognized this. Trust in vaccines also improved, as demonstrated by the significant increase in flu vaccination rates in Germany. We hope to maintain this progress.

EF: How can Germany improve as a hub for innovation and manufacturing?

EK: Innovative products have a fast access German market, but the generic market suffers enormous price pressure. Generic product manufacturers represent 78% of all packages sold in Germany but only 8% of the costs for Statutory Health Insurance. The balance between generic and innovative products needs to be fixed. We are currently facing a new discussion about cost-reducing legislation. There is a potential threat that market access conditions for innovative medicines could be significantly impaired for the next few decades, all to achieve relatively minor savings.

EF: What would you like to be celebrating in 5 years?

EK: An appropriate compensation for inflation, covering all types of fixed prices. Another ambitious goal could be becoming climate neutral.

Dr. Marc-Pierre Möll

Managing Director
BVMed, Germany



EF: If 2020 was the year of diagnostics and 2021 the year of vaccines, what do you think will be the key healthcare talking points for 2022?

MPM: In terms of medical devices, 2022 will be about medical device regulation (MDR). The MDR is a new regulation for all medical devices, especially for legacy devices that must be transferred from the old system ((AI)MDD) to the new system. There are massive problems with the capacity within the system to migrate all products.

“ We are meeting with the European Commission, the German government, and other national governments in Europe to find pragmatic solutions. The current situation’s impact will lead to losing about 30% of the products in the market and even 10% of European companies being left out of business. There are approximately 450 thousand medical devices under the current (AI)MDD system, which would mean losing 150 thousand different medical devices in Europe. ”

In Germany, 83% of all MedTech companies are small and medium-sized. Right now, around 30% of them still need access to a notified body, which means they are in danger of running their business. This situation was already a big challenge last year, and this year got even more relevant as companies must decide now which products will be placed on the market and which not.

Regarding innovations, we see companies preferring to place products in the US market over the European. These decisions are making us fall behind in access to better products, especially regarding patient care.

Moreover, with the Covid-19 pandemic and the current situation in Ukraine, costs are rising significantly, and supply chains are being challenged. In Germany, most companies have fixed reimbursement contracts, which

are not flexible and cannot be changed. *These mostly low-priced contracts, combined with the current high costs for raw materials, intermediate products, and energy, lead to exceptional economic situations.*

On top of that, there is a third big topic: *the Green Deal of the European Commission and the goal to make Europe the first climate-neutral continent.* A program with more than eighty directives and regulations is coming up for the industry to be more sustainable – with massive effects and impacts. Besides the MDR, this program is a big challenge for the industry! Therefore, we are working within BVMed on a sustainability strategy as well. These three topics are the biggest concerns we face in Germany and Europe.

EF: Could you elaborate on the sustainability strategy you have?

MPM: *We have commissioned a groundbreaking study on the MedTech industry’s economic, ecological, and social footprint in Germany. The industry’s social and environmental footprint methodology is based on a standardized calculation of the Value Balancing Alliance in consensus with the World Trade Organization and the G20. Only a few companies have calculated their internal records’ social and ecological footprint so far. We are the first association worldwide to analyze the whole sector in a country, and we are very proud of this.* Once published, the facts and figures will reveal areas where our work excels, as well as areas that require improvement and where *we must focus our efforts to create a climate-friendly and sustainable system.* We must first identify problem areas and prioritize their improvement to effect meaningful change.

With the Green Deal in Europe and a strong Green Party at the federal level and in the regional governments (Bundesländer), the focus is set. Politicians are advocating for policies that save the environment and stop climate change.

In Germany, we have a national Supply Chain Due Diligence Act that will be effective in January 2023. A similar Act is being proposed at a European level, but still as a draft.

In Germany, hospitals that buy from Medical Device companies already ask for the social and ecological footprint as part of their contracting process. With the information from our study, companies will be able to measure their footprint and use it as a benchmark. For the first time, we can compare and see how we perform with our ecological and social footprint. Once we identify where the problems are, we can work on a strategy and act on it.

It is exciting being frontrunners for transparency and a willingness to improve.

Prof. Dr. Dennis Ostwald

Founder and Chief Executive Officer
WifOR Institute



EF: What moved you to open the research institute, and what needs are you covering?

DO: I completed my Ph.D. thesis under the esteemed guidance of Prof. Dr. H.C. Bert Rürup, a renowned figure in the field. Professor Rürup served as a consultant to the German government for over three decades and was the Chief Advisor of the Scientific Advisory Board. I served as his assistant during his tenure as president. Working with Professor Rürup exposed me to a wealth of knowledge, particularly in communicating with stakeholders, including government bodies, associations, and companies.

Though my background is in macroeconomics and mechanical engineering, I developed a passion for interdisciplinary research, which led me to my current role as a professor of international management with a Ph.D. in economics. My Ph.D. thesis centered on the impact of health investments on GDP and employment, focusing on health policy advisory. My work caught the attention of the German Federal Ministry of Economic Affairs and Climate Action - at the time, the Ministry of Economics and Technology, who invited me to continue my research due to our successful collaboration on various government projects.

Our family-owned institute is driven by a desire to make the world a better place. Our projects are not determined by profits but by their purpose and impact. We have three core research areas: sustainability, health, and labor markets. We focus on measuring the impact of companies, associations, and governments and providing social, environmental, and economic data to inform their decision-making.

Our work also provides evidence of how companies and associations can contribute to reducing the social burden of diseases, not just from a Health Technology Assessment (HTA) perspective but also from a macroeconomic point of view. We aim to convince presidents and ministers to prioritize health by demonstrating the potential to create societal value and stimulate resilient growth.

EF: How can we prioritize health, especially with the current issues in Germany?

DO: Following the peak of the pandemic, COVID-19 has taken a backseat to the agendas of top political events, such as the G7, G20, H20, the CEO summit of the Americas, and the UN General Assembly. While the poly crisis with energy shortage and supply chains has understandably led to governments prioritizing cost-saving measures, it has also highlighted the need for investment in emerging technologies and sectors with high market potential and impact on growth and employment.

To change the perception of healthcare, we must start by seeing its potential as a driver of growth, employment, exports, and macroeconomic stability. It is a sector that requires investment but has the potential for a high return on investment. *We need to measure and demonstrate the impact of healthcare on GDP to make its value evident to leaders.*

To achieve true innovation in healthcare, we must adopt an interdisciplinary vision that considers the product, process, and system and collaborations between governments and other types of organizations. This requires purpose-driven synergies between public and private actors. To achieve innovation in the healthcare sector, we must view healthcare as an investment rather than an expenditure. We must initiate a sustainable positive feedback loop of health investments that drives employment, economic growth, innovation, and cyclical progress in health for all.

EF: What are the most effective strategies for developing economies and governments to invest in healthcare?

DO: Long-term investment in healthcare is vital for developing countries and low-income economies, in a similar vein to investments in infrastructure and education. Alongside representatives from parliaments, NGOs, and the WHO, I participated in the recent G20 Health & Development Partnership meeting, which focused on *embedding health metrics into the latest quarter, alongside fiscal and economic policies, to measure the UN's return on investments.* To achieve this goal, we need to consider the cost of illnesses as a social burden that can be monetized, measure the impact of human capital, including unpaid activities, and evaluate the economic footprint of the healthcare sector. *Defining common health metrics and translating social impact into a language understood by stakeholders, including companies and governments, is crucial. By doing so, we can help each stakeholder recognize the importance of investing in healthcare and its economic and social benefits.*

EF: How do you translate the importance of investment into the language that each stakeholder understands?

DO: *To drive innovation in the healthcare sector, accessing new and diverse data is crucial.* Simply stating that healthcare is an investment is insufficient; concrete examples and visualizations are necessary. The Health Economy Reporting aims to showcase empirical evidence for the importance of investing in healthcare to ensure a healthier and more prosperous future for generations to come. Investing in healthcare improves public health, reduces the social burden of diseases, and drives resilient economic growth. It is essential to involve all stakeholders, including pharmaceutical and hospital associations, in the process to achieve a paradigm shift. Collaboration and open dialogues between stakeholders are necessary, as highlighted at the World Health Summit in Berlin. With the COVID-19 pandemic fading, there is an urgent need for such collaborative efforts.

EF: What are the essential takeaways contributing to global healthcare enhancement and comprehension?

DO: In the healthcare system, silos are a significant challenge that must be addressed through a common goal. A health industry strategy for Europe in 2030 should be developed to identify and achieve actionable items. The success of such a strategy has been observed in other countries and could be used as a blueprint. *Linking health to climate change could effectively leverage the momentum on the climate side.* A success story was the creation of a platform for ministers of health and finance to meet and prioritize health investments. Low and middle-income countries should invest 2-4% and 6-8% of their wealth in health, respectively, and high-income countries should invest 10% or more. *Aligning healthcare with sustainability initiatives and reducing disease burden economically and socially should be the focus.*

The priorities for Latin American countries should be analyzed to ensure that healthcare is at the top – targeting investments into health innovation triggers not only better health but, significantly, also greater wealth and further innovative capacity. The outcome? Continued improvements in the health of populations. Identifying – and measuring – this positive feedback loop is critical. *Even as the COVID-19 pandemic is receding, the significance of health must translate into addressing non-communicable diseases, with cardiovascular disease being a common factor across the world.*

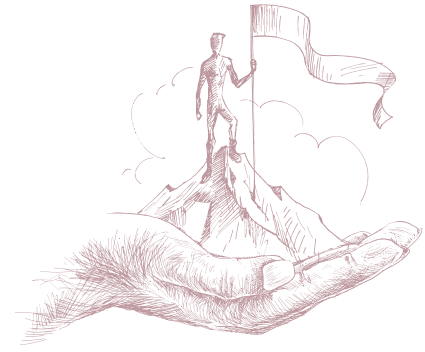
Chapter 2

The Healthcare Opportunity

“For the healthcare sector, the world-class research and development facilities, as well as the high purchasing power and demographics, allow positive business expectations.” Achim Hartig, Managing Director, GTAI

During transformative times, change must be embraced as an opportunity. Shifts and new approaches to healthcare can positively boost the economy and society's well-being. Germany stands before the unique opportunity to recalibrate the health sector and build a more sustainable ecosystem that can boost productiveness, enhance the local economy, and deepen the country's impact as a global player in health and life sciences.

A framework for opportunities



Times of Tailored Transformation

Healthcare is running through an accelerated process of change. While the Covid-19 outbreak has highlighted the strengths and flaws of systems worldwide, the post-pandemic context now invites all stakeholders in the industry to proceed strategically toward the goal of sustainable healthcare, forearmed to emergency and best suited to the population's needs.

The lessons learned by the pandemic, challenges related to climate, and shifts in geopolitical structures have shaken frameworks on a global scale and dared leaders in the healthcare industry to further broaden their skill sets to create robust structures that can sustain the future of health in the long run.

Following this trend, Germany is currently undergoing a transformation driven by several factors as it works towards building a sustainable policy in a post-pandemic world.

Attracting Investment into Germany

Investing in Health- Building the businesses of the future today.

Viewing Healthcare as an investment for a sustainable future rather than an expenditure to redeem the burden of disease required a mindset shift from the whole industry. Building on an attractive framework for future investments, Germany can impulse innovation within its own borders and generate new aggregated value that will not only improve the life and patient experience but impact the economic growth of the country.



"Germany's economy throughout crises remains attractive to investors," states **Achim Hartig**, Managing Director for Germany Trade & Invest and Chairman for the Organization for Economic Co-operation and Development. "In the last five years, we doubled the number of companies pursuing foreign direct greenfield investments in Germany. In the last three years, the demand for large multinational companies of our services has skyrocketed and led to some of the largest investments in Germany for the last 60 years."

As part of organizations that actively impulse foreign investment in the country, Hartig names the investment trends he sees for the coming years.

"Renewable energy, new mobility, digitalization, the availability of resources, and the circular economy are the most important sectors for foreign direct investment (FDI) in many economies becoming carbon neutral. And adds: "For the healthcare sector particularly, the world-class research and development facilities, as well as the high purchasing power and demographics, allow positive business expectations."

Hartig sees great potential for specific healthcare solutions. "Digital business models in healthcare are getting traction because certified services are eligible to be reimbursed by health insurance. Process optimization in the medical device production industry is significantly driven by innovation in the deployment of digital technologies and can raise quality and lower costs. These aspects are also incentives for foreign business expansions in the healthcare segment since they entail opportunities to participate and profit from the increase in digitalization and telemedicine in Germany."



Prof. Dr. Broich from BfArM has prospects in which therapeutic areas innovation will make a deeper impact. "We will see more dynamics in digital health applications; digital tools will better understand the many chronic disorders. The new digital tools will help find better biomarkers, help real-world data define future indications better, and increase and improve individualized patient care, which will be a huge topic moving forward. Advanced Therapy Medicinal Products and gene therapy are interesting and dynamic fields; in cancer, for instance."

Germany's current GDP is generated almost 30% by manufacturing activities. "This is approximately three times more than other European countries," clarifies Hartig. Its production power, aligned with knowledge and highly educated human resources, process availability, and a client base with many consumers, is Germany's highest attraction point.

The more than three million small to medium-sized enterprises in Germany are a valuable asset as foreign investors seek areas with changes for development and sales. Hartig knows that "Knowledge and a huge client base are fundamental to selling and establishing a business. Several business models in Germany are created in coope-

ration with the largest base of small and medium-sized enterprises. With a business idea, investors can cooperate their business model with many companies.”

To nurture the already optimistic environment and attract long-term investment to the region, Germany has to offer long-term perspectives. In Hartig’s words, this means less market volatility, fewer short-term risks, and more long-term benefits. Risk is a question of statistics, which are determined by the volume of items and the height of the risk. The risk is lower with over three million companies than in a country with fewer enterprises.

The same goes for the diversification within the age and demand structure of the population. Populations are market drivers. Moreover, the political situation is also a crucial aspect of long-term investment. The reliability of the political system for investment is very important. “

In all these aspects, Germany serves the right conditions. Nevertheless, there are still some obstacles to overcome and chances to build more effective processes to streamline FDI.

Pushing digitalization further and creating more agile regulatory processes and attractive financing structures are first on the agenda.

Digitalization in Healthcare

Digitalization, Data, and AI are opening new doors and opportunities within healthcare. In March 2023, the German Health Ministry published its Digitalization Strategy for the Healthcare sector. Key points of the strategy are the development of a telematic infrastructure, including a digital patient record, better telehealth services, and e-prescriptions. Digitalization shall also decompress caregivers by allowing interoperability in the documentation and monitoring processes. Moreover, the healthcare data obtained through a digital approach is opening opportunities for research and improvement in the health and care sector.

“The pandemic ultimately had a positive impact on digitalization efforts in Germany,” says **Dr. Markus Leyck Dieken** General Manager of Gematik. “Germany is undergoing a significant transformation by adopting a system similar to the other Nordic countries, which involves constantly contributing health data.” It is expected by the end of 2025 that, 80% of Germans will use electronic health records, which will help with data collection.



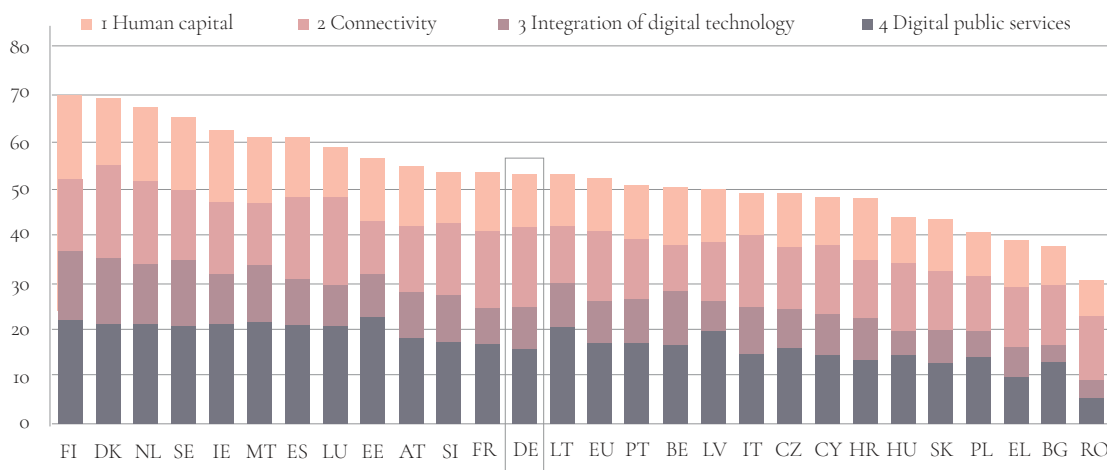
“Digital applications will play a crucial role in monitoring chronic diseases, training patients to be more aware of their condition and take better care of themselves. This will result in significant improvements in areas such as hypertension and diabetes. Ultimately, we can expect to see a more interconnected and digitalized health ecosystem.”
 “Dr. Karl Broich – President of BfArM Germany

Dr. Kai Joachimsen, from BPI, also highlights the economic benefits and advances for regulation: “Through digitalization, small and medium-sized companies can catch up with the market through aggregated data and research. AI is a big game changer here. The business model can become more efficient and accurate and yield more effective outcomes through digitalization. Also, there is a huge opportunity to accelerate HTAs. And regulatory processes and decisions could be better informed, faster, and more advanced.”



When analyzing the general state of digitalization based on the Digital Economy and Society Index (DESI) 2022¹ crafted by the European Commission, Germany is ranked 13th among the 27 states of the European Union in digital development. As the largest economy within the region, this shows a margin for progress. Dr. Leyck Dieken states that “Germany needs to speed up its digital transformation efforts to keep up with other European nations”; and that “the current healthcare system inefficiency can already be improved with smart digital tools like appointment reminders.” However, a substantial aspect of taking digitalization further along is generating trust in data safety and data use. Dr. Leyck van Dieken knows that.

Digital Economy and Society Index (DESI) 2022 ranking



¹ Digital Economy and Society Index (DESI) 2022 Germany, <https://digital-strategy.ec.europa.eu/en/library/digital-economy-and-society-index-desi-2022>

“Germany is renowned for its excellent resources, research institutions, and population capabilities. However, all that talent becomes pointless without data openness and a drive toward innovation. In healthcare, there exists a balance between utilizing patient data for benefits and excessively overprotecting it, which can result in losing such benefits. Raising awareness about digitalization is crucial, as it can result in early diagnosis and prevention through using health data and electronic records.”



Dr. Frank Wartenberg President of IQVIA Central Europe stresses the importance of data in healthcare, “There is an awareness of the need to do more to digitize the country, and I hope it is done sooner rather than later. The agenda is clear, which, if accelerated, will improve the situation for patients and the population.”



The role of Digitalization in Pharmacies is advancing fast. **Dr. Oliver Sheel**, General Manager of Apo.com Group, shares, “My ultimate goal is to take our patient service to the next level by utilizing patient access to provide not only package shipments but also pharmaceutical and telemedical services that analyze and anticipate patient needs.” With the soft start of e-prescriptions since 2021/22, part of the Rx market in Germany is shifting online. According to Dr. Sheel, “the addressable market is growing from €10-15 billion, OTC/BPC markets plus 2% of the current paper-Rx market, today to €50-60 billion, OTC/ BPC plus major share of the full Rx market.”



Dr. Dominique Ziegelmayr, Chief Executive Officer and Founder of DatamedIQ, a company dedicated to providing integrated data on the online pharmacy business, states: “Two years ago, digital data was not that important. Today, however, our data has become integrated everywhere, and people are starting to understand how they can combine the data from DatamedIQ with data from elsewhere. They are starting to analyze it from a business perspective, look at the datasets, and produce a valuable source of truth.” He ensures that this information can complement others and provide the best insights for a better decision-making process.

While Germany has made progress in digital transformation in the past five years, its performance in terms of human capital and basic digital skills is slightly below the EU average. However, Germany has a higher share of information and communications technology specialists compared to the EU average. In terms of connectivity, Germany performs well with improved fixed, very-high-capacity network coverage, but it lags in fiber coverage and faces an urban-rural digital divide. Germany ranks 4th in 5G coverage among EU member states. In terms of integrating digital technology by enterprises, Germany is close to the EU average, but there is room for improvement, especially for small and medium-sized enterprises. Germany shows mixed performance in digital public services, excelling in open data but needing improvement in government-public interaction. The new German government has prioritized digitalization and is working towards achieving the EU’s Digital Decade targets.

Medical Personnel (per 10,000 people)

Medical doctors: **44.3** Dentists: **8.5**
 Nursing and Pharmacists: **6.6**
 midwifery personnel: **141.9**

When compared to the EU average, Germany has a high number of physicians and nurses, with per-population ratios and growth rates higher than other countries. Growth in physician numbers has been particularly strong for hospital physicians. Nevertheless, given the high number of hospital beds, the physician-to-bed ratio is comparatively low, and the nurse-to-bed ratio is one of the lowest in the EU.

Source: World health statistics 2022: monitoring health for the SDGs. Geneva: World Health Organization; 2022. License: CC BY-NC-SA 3.0 IGO. and OECD/European Observatory on Health Systems and Policies (2021), Germany: Country Health Profile 2021, State of Health in the EU, OECD Publishing, Paris/European Observatory on Health Systems and Policies, Brussels.

Key Data about German Hospitals

	Hospitals	Beds	Cases	Medical staff (full time)	Average length of stay	Capacity utilization
2009	2,084	503,341	17,817,180	131,227	8.0	77.5%
2010	2,064	502,749	18,032,903	134,847	7.9	77.4%
2011	2,045	502,029	18,344,156	139,068	7.7	77.3%
2012	2,017	501,475	18,620,442	142,874	7.6	77.4%
2013	1,996	500,671	18,787,168	146,988	7.5	77.3%
2014	1,980	500,680	19,148,626	150,757	7.4	77.4%
2015	1,956	499,351	19,239,574	154,364	7.3	77.5%
2016	1,951	498,718	19,532,779	158,148	7.3	77.9%
2017	1,943	497,205	19,455,301	161,151	7.3	77.8%
2018	1,925	498,192	19,392,466	164,646	7.2	77.1%

Source: <https://www.gtai.de/en/invest/industries/healthcare-market-germany/healthcare-market-65626#73898>

An Infrastructure Bet

More than 1,900 hospitals with nearly 500,000 beds operate in Germany – not including rehabilitation or elderly care facilities. The overall number of medical hospitals is declining as smaller general hospitals close or merge with other hospitals to increase efficiency.²

In May 2022, the German Government initiated a commission to implement reforms in Germany's hospital system. The objective was to provide modern and needs-based hospital care, as the present DRG (diagnosis-related groups) classification has proven to be flawed. According to the Ministry of Health's press release, "The current system of case-based flat-rate payments has put many hospitals under strong economic pressures, leading to the threat of closures. The hospital reform aims to prevent such closures and ensure high-quality care across rural regions."³

Additionally, the inflation Germany is confronting this running year has underlined the inflexibility of the hospital remuneration system, as well as gaps in the funding system. "The German DRG system no longer covers all the costs, endangering our healthcare system. The German hospital remuneration system has two pillars, i) the financing of the running costs done by the DRG system and ii) the investment costs borne by the regional governments. But the regional governments don't invest, and year by year, we are missing 3 billion euros which should have been invested but which we haven't got." **Marc Schreiner**, Director of the Berlin Hospital Association.



The draft of the Hospital Reform foresees reclassifying hospitals and clinics into levels of care, from basic medical attention to highly specialized treatment, based on the specialty of services provided. While Level I hospitals shall offer care close to patients' homes throughout the country, specialized care will be concentrated in highly qualified centers resetting the focus on patient-quality treatment.

In the midst of discussing the reform of the Healthcare Structure, representatives like Marc Scheiner insist on the importance of considering diverse settings. "The Berlin hospitals have a very high rate of use and a high case mix, a very different scene from rural areas; the national government analysis doesn't consider the various settings. We believe the German hospitals are more qualified to deliver a concept on the reform."

Nurses in demand!

The Institute of the German Economy has predicted that Germany's

inpatient care sector could face a deficit of approximately 307,000 nursing professionals by the year 2035. In addition, the overall shortage of skilled workers in the care industry could reach nearly 500,000 by that time.⁴ The elderly population in Germany is challenging the care sector, and the shortage of professionals is one of the biggest concerns in the field. Hospital Associations like the one in Berlin have taken matters into their own hands and organized their first joint campaign for more nurses and better care in the city. As Marc Schreiner states, "Only in Berlin are ten thousand full-time working nurses needed." Therefore, the Association has created a master plan to match this need. "We employed extra staff to run this campaign and develop full public awareness through media: websites, blogs, and podcasts."

#PflegeJetztBerlin and similar initiatives are addressing the problem of the nursing shortage through multiple strategies, including developing programs to bring back retired nurses, attracting young people and foreign talent to the field, reevaluating the profession, and engaging in political discussions to emphasize the urgent need for action.⁵

Medical Device Regulation

As for the Medical Device Industry, 2023 is a year of regulation repercussions. As an effort to unify markets, the European Commission started in May 2021 to change the former MDD regulation with the new MDR system.⁶ The change includes a stricter medical device classification, changes to the quality management system, and the supervision of a notified body controlled by national competent authorities and the European Commission. Dr. Marc-Pierre Möll from BVMed, Germany, expressed concerns about the process. "There are massive problems with the capacity within the system to migrate all products. To find pragmatic solutions, we are meeting with the European Commission, the German government, and other national governments in Europe. The impact of the current situation will lead to the loss of about 30% of the products in the market and even 10% of European companies being left out of business. There are approximately 450 thousand medical devices under the current Medical Device Directive – MDD / Active Implantable Medical Device Directive – AIMDD system, which would mean losing 150 thousand different medical devices in Europe.

In Germany, 83% of all MedTech companies are small and medium-sized companies. Right now, around 30% of them still don't have access to a notified body, which means they are in danger of running their business. This was already a big challenge last year, and this year got even more relevant as companies must decide now which products will be placed on the market and which not."

2 GTAI

3 Press Release: German Health Ministry, Krankenhausreform <https://www.bundesgesundheitsministerium.de/themen/gesundheitswesen/krankenhausreform.html>, 13.03.2023

4 Rainer Radtke, Bedarf an Pflegekräften in Deutschland bis 2035 <https://de.statista.com/statistik/daten/studie/172651/umfrage/bedarf-an-pflegekraeften-2025/#:~:text=Laut%20dem%20Institut%20der%20deutschen,insgesamt%20knapp%20500.000%20Fachkr%C3%A4fte%20vergr%C3%B6%C3%9Fern>, 24.01.2022

5 Pflege Jetzt Berlin, Berliner Krankenhausgesellschaft <https://www.pflegejetztberlin.de/>, last visited 11.4.2023

6 European Commission, Public Health- New Regulations https://health.ec.europa.eu/medical-devices-sector/new-regulations_en#about-the-revision, last visited 11.4.2023

Statutory Health Insurance Financial Stabilization Act

Germany approved in October 2022 the GKV-Finanzstabilisierungsgesetz or Statutory Health Insurance Financial Stabilization Act. At the core of this law lie financial reforms across various areas of statutory health insurance, including the restructuring of pharmaceutical pricing, modification of doctors' fees, reduction of financial reserves in the health insurance system, and increase in pharmacy discounts. These measures aim to compensate for a 17-billion-euro deficit incurred by the previous government.⁷

For the pharmaceutical manufacturing sector, this Stabilization Act establishes an extension of the price moratorium on pharmaceuticals until the end of 2026, supplemented by a phase-out provision for known pharmaceuticals with a new indication. The fixed prices from 2009 were last adjusted to inflation in 2019. Regarding their operations with the health insurance sector, the pharmaceutical manufacturing industry, therefore, has as a minimum goal “to ensure compensation for inflation.” Moreover, **Dr. Elmar Kroth** from BAH sustains that “we need to ensure that the new policies do not affect the conditions for innovative products. The key priorities of the BAH are on fixing price regulation for the different categories and the general procedures of the market access conditions for innovative products.”

“We see an increasing demand for medical services while financing is decreasing. The sector and the state will need to design a sustaina-

ble healthcare system for the future.” Observes **Dr. Kai Joachimsen** from BPI on this matter. “The current reference price system is very strict, where there are a sophisticated set of rules which make the prices decrease over time. All the costs for energy, raw material, and APIs are increasing with the current political climate and other issues like the recession. The industry cannot afford local production due to price fixing.”



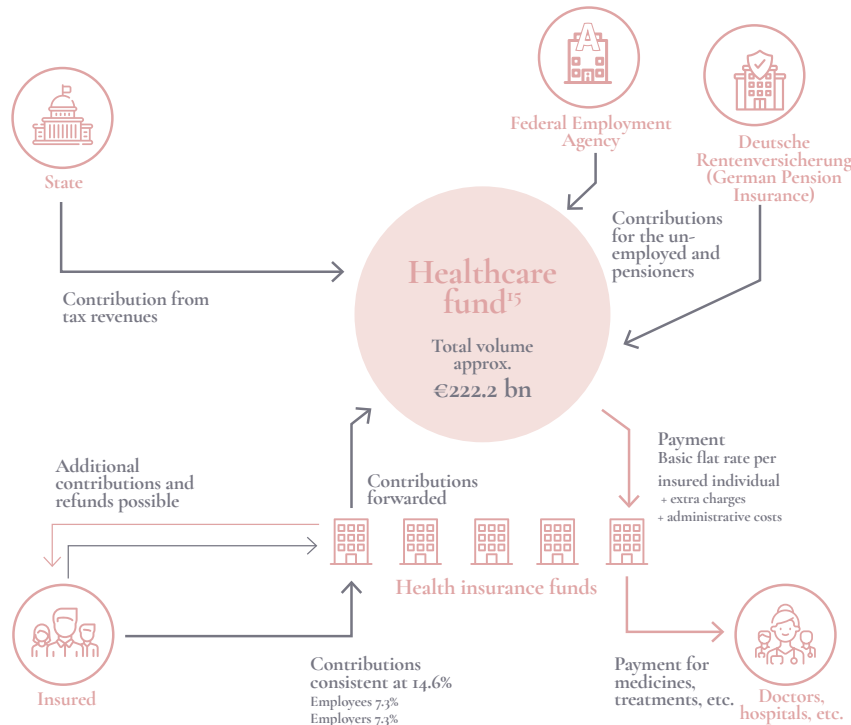
The bill also proposes changes to the Pharmaceuticals Market Reorganization Act (AMNOG) that directly impact reimbursement schemes. The current rebate system in place is price driven and does not provide any premium for the added value, such as the quality of the product, the location of production, or to cover shortages in supply.

All these factors are threats to developing a sustainable pharmaceutical environment, and it is important to address them if we want to keep Germany as a Pharmaceutical location.”

Portfolio Management and Therapeutic Areas

When it comes to portfolio management, companies are staying at the top of the population's needs. By looking at the evolution of the burden of disease in Germany, we can identify different therapeutic areas that are guiding the growth and performance of the market, considering the change in demographics and other variables.

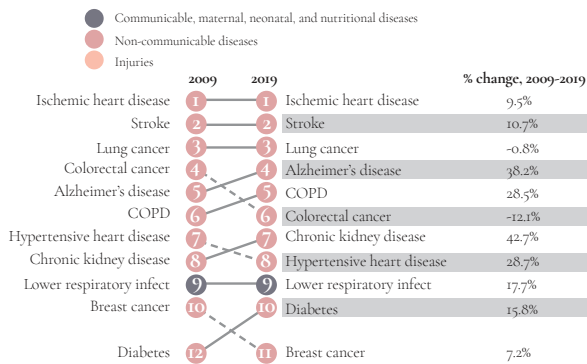
Making health sustainable, assessing the impact of digital transformation



Source: https://www.bundesgesundheitsministerium.de/fileadmin/Datcen/5_Publikationen/Gesundheit/Broschueren/200629_BMG_Das_deutsche_Gesundheitssystem_EN.pdf

⁷ Press Release: German Health Ministry: GKV-Finanzstabilisierungsgesetz <https://www.bundesgesundheitsministerium.de/ministerium/gesetze-und-verordnungen/guv-20-1p/gkv-finanzstabilisierungsgesetz.html>, 27.07.2022

What causes the most deaths?



Top 10 causes of total number of deaths in 2019 and percent change 2009-2019, all ages combined
See related publication: [https://doi.org/10.1016/S0140-6736\(20\)30925-9](https://doi.org/10.1016/S0140-6736(20)30925-9)

In the year 2021, Covid-19 was still responsible for 7% of deaths caused by disease, and companies and governments strongly focused on strengthening the supply of vaccines and medicines related to the pandemic. As we are transitioning out of the deep-felt impact of the pandemic and still evaluating the long-term consequences and repercussions of covid-19, companies are refocusing on NCD and other highly relevant important therapeutic areas.

Going through the burdens of disease in Germany, based on the data provided by Germany's Federal Office of Statistics, the main causes of death caused by the disease are related to diseases of the circulatory system and cancer.

Non-communicable diseases are still the highest burden of disease in Germany. Ischemic heart disease, strokes, and lung cancer are still the main reasons for death throughout the last decade. However, it is interesting to observe that, particularly in the field of cancer, the number of deaths is decreasing.

Even though lung cancer is the 3rd most common reason for death by disease in Germany, the general percentage has slightly diminished.

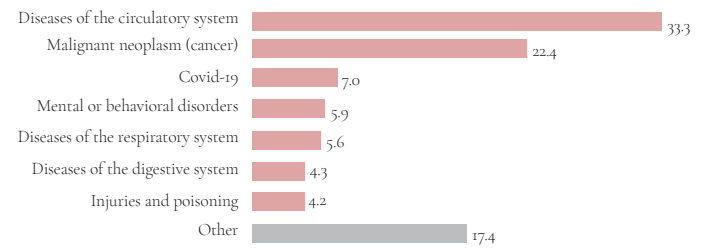
Meanwhile, other oncological diseases, like colorectal and breast cancer, are dropping in death rates, which speaks for noticeable advances in this therapeutic field.

On the other hand, cardiovascular diseases and chronic diseases like diabetes and chronic kidney disease are increasing. Especially the demographic change in Germany's eldering population is also responsible for the increase in dementia illnesses, the most frequent being Alzheimer's.

When looking into the pharmaceutical market and the ranking of most sold drugs, sales mirror health tendencies. Related to the burden of cancer, the hospital market indicates a sales growth of antineoplastics. According to data provided by IQVIA in its 2023 market report⁸, the "Other Antineoplastics" group achieved a growth rate of over 100%. The group of "MAB Antineoplastics" also achieved double-digit growth with an increase in value sales of 11.8%. The trend for Antineoplastics can certainly be explained by the recovery from pandemic-related suspended oncology treatments and by the rapid research and development efforts in cancer indication."

Prevailing diseases contributing to mortality

Causes of death by type of disease, 2021 in %



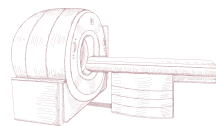
Source: https://www.destatis.de/EN/Themes/Society-Environment/Health/Causes-Death/_node.html#267094

Meanwhile, chronic diseases lead the costs in the statutory health insurance sector. "Within the ten top-selling drug groups (according to value sales) in the SHI market, the report lists the strongest growth in the group of SGLT2 inhibitors for use against type 2 diabetes (+76%) in the first nine months of 2021. Other groups with double-digit growth by value include interleukin inhibitors (+19%) and MAB anti-neoplastics (+15%). Within the ten top-selling drug groups in the SHI market in 2022, lipid regulators grew the most in terms of sales, up 11.4% year-on-year, and other analgesics grew by 11.3% in terms of sales."

In the OTC market, 2022 registered a high increase for cough and flu medicine, partly attributed to the immunologic and social after-effects of Covid-19.

Therapeutic fields- a close-up caption

Oncology



According to a 2019 Report by the Expert Commission for Research and Innovation (EFI), China led with 228 studies into cell therapy against cancer, followed by the U.S. with 203 studies. In Germany, meanwhile, only 14 studies took place. One reason for this is that the current research landscape is fragmented and characterized by a multitude of local cluster initiatives.

At Bayer, we recognize this and are therefore collaborating with the biggest hospital in Germany, the Charité Berlin, and the state of Berlin to build a cell and gene translation center in the heart of Berlin. The goal here is to create an ecosystem that accelerates cell and gene therapy's translation, development, and commercialization in Germany and Europe. **Dr. Daniel Steiners, Senior Vice President & General Manager, Bayer**

We have a leading cutting-edge R&D site in Heidelberg called Cellzome, which is focused on oncology. In 2021, we performed 47 different clinical studies in Germany, involving over 11,000 patients at 680 different research sites. **Victoria Williams, Senior Vice President & General Manager, GSK**



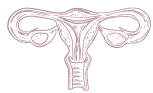
⁸ Iqvia Marktbericht Classic "Entwicklung des deutschen Pharmamarktes im Jahr 2022" - published 2023



Vaccines

“In GSK Germany, we are 3,400 employees, and we have two manufacturing sites in Marburg and Dresden with over a hundred years of heritage focused on vaccine production.

Germany is the most important vaccine market for GSK in Europe and the second-largest GSK vaccine market in the world. It is critical that Germany remains a country and healthcare system that values and accelerates innovation. I believe bringing innovation can also save money for the country. In a post-pandemic world, we need to look at designing highly effective preventative strategies,” **Victoria Williams, GSK**



Women’s Health

“Women’s Health needs to be understood as a general and accepted important field as well as a missed out and neglected market and healthcare segment. Up to now, women’s health has been seen as an individual woman’s problem, or even worse; it has been seen as normal. I always say that if men had endometriosis, we would have the best drugs as generic. Women’s

Health needs to get the visibility that it really deserves and be understood as an important field, leaving aside the stigma around many women’s health conditions. Very often, it’s been dismissed, ignored, normalized, and marginalized - this needs to stop.” **Christoph Habereeder, Organon**



Rare Diseases

Germany has shifted its approach towards the availability of treatments for rare diseases. The focus for the future lies in crafting a compelling value proposition for stakeholders, which ensures patient safety and efficacy. Ferrer recently signed an agreement with the Swiss clinical-stage biotechnology company Asceneuron to develop specialized treatments for patients with progressive supranuclear palsy (PSP), a rare and debilitating neurological condition. We are also conducting a phase three trial to evaluate the safety and efficacy of a treatment for amyotrophic lateral sclerosis (ALS), another rare and life-threatening disease. Ferrer is committed to bringing these innovative treatments to market to improve patients’ lives. Developing treatments for rare diseases requires a highly specialized and complex process, particularly in diagnostics and therapies. Despite the challenges posed

by regulatory and political transitions in Germany, Ferrer is dedicated to pushing the boundaries of medical research to bring transformative solutions to patients. **Dr. Amina Elsner, Ferrer**



There are still several unmet medical needs in rare diseases for diagnosis and treatment. Online education and artificial intelligence will play a role in accelerating diagnosis.

A win-win scenario would be creating a joint effort between com-

panies developing orphan drugs to deliver broader and more relevant medical information to a wider audience of healthcare providers. Communicating about multiple rare diseases will increase the relevance of the information for the recipient and reduce the cost for companies. **Dr. Rüdiger Schulze, Ultragenyx**



Plant-based Medicine

The upcoming “normal” cold and flu season could be harder than in previous years, and we need to ensure people will be able to get their medicines. Our business model will not change; we are strong in medicines for colds and flu, and we have successfully used evidence-based research for uncomplicated urinary tract infections and antibiotic replacements, which we introduced in many markets. We have high-quality science and evidence-based products for women’s health, which we will be introducing on the market to broaden our product portfolio. **Dr. Michael Popp, Bionorica**



Whereas most companies in the natural health sector strongly focus on cough and cold as the largest OTC category, Schwabe Group’s most important field of interest and source of business are mental disorders such as cognitive impairment, anxiety, stress-related symptoms of depression, on focus on the treatment of diseases of deeper relevance such as mental disorders, anxiety, and depression. This is a category that is already now a field of significant societal relevance. **Dr. Traugott Ullrich, Schwabe Group**



Pharmaceutical Supply Chain

Pharmaceutical supply chains continue to be disrupted globally due to the after-effects of COVID-19 and the ongoing Russian-Ukrainian war. Current challenges dare major pharmaceutical companies to rethink their strategy and modus operandi.

“The current geopolitical climate has not only exposed the fragility of the global supply ecosystem – which for pharmaceuticals is extremely complex – it has triggered the need to reassess how and where we produce and trade. We now have the opportunity to build genuine resilient supply chains that foster long-term value creation by striking a balance between growth, sustainability, and consumer demands.

On a positive note, I do believe there is increased recognition of the need for constant collaboration and dialogue between all relevant stakeholders globally and locally to strive through these tough times together. At Bayer, our company purpose is “Science for a Better Life,” which shines a light on topics that drive us and consequently can help patients and consumers to lead a better life. With this in mind, we also aim to further build up resilient supply chains through innovative solutions to ensure even better patient care.” **Dr. Daniel Steiners, Bayer**



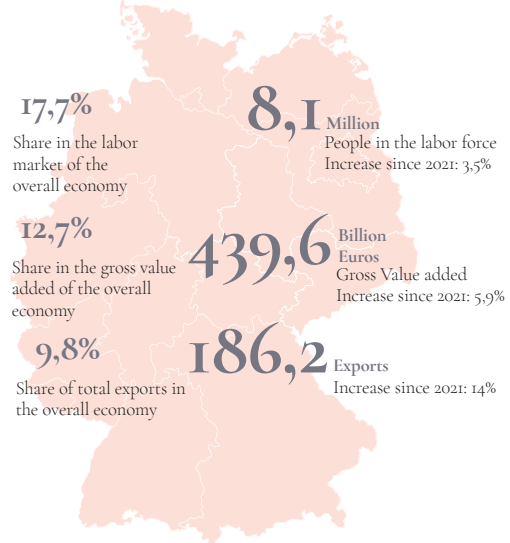
Health and Wealth: Germany's Health Sector as Driver for Economic Success

According to the Health Economy Report published by the Federal Ministry of Economic Affairs and Climate Action, in 2022, the German healthcare industry accounted for 12.7% of the total gross value added to the country's economy. "The health industry is one of the biggest sectors in the German economy," said BMWK State Secretary Anja Hajduk. This number corresponds to roughly one in eight euros of the German gross domestic product. In total, the economic footprint of the health sector, composed of the areas of medical care, industrial health care management, and other subsectors like health insurance, generated around 775 billion euros when considering its induced and indirect impact in other fields such as nutrition, fitness, and wellness.

Additionally, the sector is responsible for approximately every 5th employment in the German labor market and has been creating more than 1.5 million new jobs in the last ten years. On an international aspect, the segment represents around 9.8 % of Germany's total exports- a notorious achievement, considering that substantial portions of the system's value come from providing patients.

With a solid growth index of 4.6%, the healthcare industry is growing faster than the German economy (3.6%). These numbers alone illustrate the health sector's great importance as a driver for economic success in Germany.

The German Healthcare industry represents 12.7% of the national GDP. Every 6th person in the German workforce is active the healthcare sector.



Period under review: 2022
 Source: Federal Ministry of Economics and Climate Protection (BMWK); Health Economic Accounts (GGR), data 2022; Calculations: WifOR.

Nevertheless, the health sector still has crucial aspects to resolve. On the workforce level, the shortage of qualified professionals especially affects the healthcare area. A study conducted by Hans-Böckler-Foundation⁹ in the year 2018 indicated that in Germany, nurses had to care for an average of 13 patients. In Switzerland, on the other hand, there are only around eight patients per nurse, in the Netherlands 6.9 and in the USA only 5.3. To protect patients and caregivers and ensure quality care, the German Health Ministry, as of the year 2021, established nursing staff floors for different hospital areas. The labor market for professionals in information technology, business informatics, and software development is facing significant challenges, particularly in relation to the pharmaceutical industry. In Germany, the pharmaceutical industry focuses on the research, development, and production of complex drugs, and its progress heavily relies on digitization advancements. Persistent shortages of skilled professionals in these fields can potentially hinder the future development of the industry.¹⁰ Gaining and retaining skilled talent to cover the opened job opportunities challenges employers to create attractive packages and innovative hiring strategies.



In Dr. Frank Wartenberg's (IQVIA) words: "The health sector is a key factor in the economy" and "the environment positive for growth and at the moment in line with the population's demographic."

Backed up by the positive tendency, the momentum should be embraced as an opportunity to generate a sustainable environment and crisis-proof structures to secure a stable development in the long run. In this sense, innovative approaches and rethinking the status can maintain the healthcare industry in the fast lane of Germany's economic growth.

⁹ German Nurses at their Limit- By Frauke Suhr, 17.01.2019 <https://de.statista.com/infografik/16676/patientenzahl-pro-pflegekraft-im-internationalen-vergleich/>
¹⁰ Jasmina Kirchhoff / Lydia Malin / Simon Schumacher -Pharmaindustrie im Wandel: Fachkräftebedarfe in Zeiten transformatorischer Herausforderungen- IW-Trends- Institut der deutschen Wirtschaft Köln eV 2/2022
<https://www.iwkoeln.de/studien/jasmina-kirchhoff-lydia-malin-simon-schumacher-fachkraeftebedarfe-in-zeiten-tra>

On the economic aspect, the system must address the question of sustainable financing. While buyers seek to secure low prices a crucial factor also for access, maintaining the impact on the end consumer or patient at a minimum - manufacturers are exposed to the instabilities in supply chains, raising energy prices and external competition from emerging markets.

Acknowledging the health sector's impact on Germany's entire economy, public and private stakeholders must find innovative and collaborative solutions to strengthen the industry and protect the economy and the well-being of Germany's population.

"To achieve true innovation in healthcare, we must adopt an interdisciplinary vision that considers the product, process, and system and collaborations between governments and other types of organizations. This requires purpose-driven synergies between public and private actors. To achieve innovation in the healthcare sector, we must view healthcare as an investment rather than an expenditure.

We must initiate a sustainable positive feedback loop of health investments that drives employment, economic growth, innovation, and cyclical progress in health for all." **Prof. Dr. Dennis Ostwald**, WifOR.



Healthcare as an industrial powerhouse

In the industrial aspect, the key areas of pharmaceuticals and MedTech, including production, distribution, wholesale, and R&D, have contributed to an economic footprint of 192 billion Euros in 2022. Additionally, in the last ten years, the industrial health segment opened more than 200,000 jobs and managed to double its export volume for the international market to 171,6 Billion euros.¹¹

As the German population gets older, the demand for products will be growing naturally - while a second mainstay is technological advancement and therapeutical innovation, the industry is pushing through R&D investments.

Yet to keep the numbers running, the industry is demanding new legislation that holds up to speed with current global developments.

Meanwhile, in the current scenario, Germany's statutory health insurance system pays for about 55% of the health care expenditure. In the year 2022, public health insurance covered over 254,8 billion euros in health expenses. Nevertheless, when the new government assumed in 2021, the statutory health insurance system presented a 17 billion euro deficit. **Dr. Karl Lauterbach**, assigned Health Minister in the same year, attributed this deficit to demographic change, new technologies, and a lack of structural change.



To stabilize the system, German Government proposed the "Statutory Health Insurance Financial Stabilization Act" - a reform that, according to Dr. Lauterbach, will be the transition toward new integral structural change. The reform intends to relocate public budgets and reset the price control in the system to generate saving actions and recover the deficit. According to the bill, insured persons will have to prepare for a 0.3 percentage point higher additional contribution in 2023, while the federal subsidy to the health fund is to be

increased by two billion euros to 16.5 billion euros.¹²

Especially in the pharmaceutical industry, the price moratorium is challenging the sector. Established in 2009 and slightly adopted in 2019, the fix-price system has not been brought up to date with growing inflation rates. The Stabilization Act extended the moratorium to the year 2026, increased the mandatory rebate percentage from 7 to 12%, and shortened the free-pricing period at market launch from 12 to 6 months.

Dr. Elmar Kroth from BAH, representing the largest group of pharmaceutical manufacturers in Germany, sustains that while the environment for innovative products in Germany is still benevolent and market access achieved quickly, "the generic market suffered from enormous price pressure. According to the data published by the German Generic Industry Association (ProGenerica), generic product manufacturers represent 78% of all packages sold in Germany but only 8% of the costs for Statutory Health Insurance. The balance between both sides, the generic products and innovative products, needs to be fixed day-by-day."



Meanwhile, **Dr. Kai Joachimsen** from BPI observes: "The industry cannot afford local production due to price fixing. Moreover, the current rebate system in place is price driven and does not provide any premium for the added value, such as the quality of the product, the location of production, or to cover for shortages in supply."



When looking at the MedTech sector, this segment faces similar challenges. The industry still feels the repercussions of the Medical Device Regulation started in 2021, an effort to set common compliance with European Standards.

Dr. Marc-Pierre Möll, BVMed, states: "Regarding new innovative products, we see companies preferring the US market rather than placing the products in the market in Europe, which is making us fall behind in terms of access to better products, especially with regards patient care."



Moreover, with the Covid-19 pandemic and the current situation in Ukraine, costs are rising significantly, and the supply chain is being challenged. In Germany, most companies have fixed contracts for reimbursement, which are not flexible and cannot be changed. These mostly low-priced contracts, in combination with the current high costs for raw materials, intermediate products, and energy, leads to exceptional economic situations." These mostly low-priced contracts, in combination with the current high costs for raw materials, intermediate products, and energy, leads to exceptional economic situations."

The split agreement between buyers and providers and new global structures affecting the general price range of manufactured goods, such as medicines, call for a reset of value in the system. A value that, according to Dr. Wartenberg (IQVIA), can be generated through the conscious use of data.

"The Sickness funds will want the lowest possible price, whereas the industry wants the highest. This is why data is important, as it shows the value-added benefit of the new product or treatment. The indus-

¹¹ See Gesundheitswirtschaft Fakten und Zahlen 2022- Health Economy Report

¹² Deutscher Bundestag Textarchiv- 23.09.2022 Heftige Kritik der Opposition an GKV-Finanzstabilisierungsgesetz; <https://www.bundestag.de/dokumente/textarchiv/2022/kw38-de-gkv-909128>

try is becoming a victim of its own success. There are increasingly different shades of targeted therapies for smaller patient segments, and the cost to develop them is increasing,” says Dr. Wartenberg.

According to Dr. Wartenberg, data is a crucial factor for better identifying profitable opportunities and effective investments. Connected intelligence among the stakeholder is a solution that Wartenberg proposes to strengthen the healthcare sector and provide better patient outcomes. “We aim to keep the system affordable while still delivering quality patient results by connecting the information from multiple sources within IQVIA through connected intelligence. One example is the implementation of Real-World Evidence (RWE), which is of utmost importance for better decision-making on innovations, new or advanced therapies.” - “There are many opportunities today with the available data and technology.”

Data and digital technologies are increasingly becoming the ignition for the industry, opening new healthcare opportunities. A tendency that can be observed as a common agreement between the stakeholders:

“Through digitalization, small and medium-sized companies can catch up with the market through aggregated data and research. AI is a big game changer here. The business model can become more efficient and accurate and yield more effective outcomes through digitalization. Also, there is a huge opportunity to accelerate HTAs. And regulatory processes and decisions could be better informed, faster, and more advanced,” adds Dr. Kai Joachimsen from BPI

“Nowadays, we are collaborating with other stakeholders on issues such as E-prescriptions and E-patient files. AI is a different matter as we are discussing real-world data or real-world evidence. These data could be used, for example, to assess the off-label use of medicinal products with the meaning of expansion of the authorization to those indications, or for switches from prescription to non-prescription status,” complements Dr. Elmar Kroth BAH.

“Process optimization in the medical device production industry is significantly driven by innovation in the deployment of digital technologies and can raise quality and lower costs. These aspects are also incentives for foreign business expansions in the healthcare segment since they entail opportunities to participate and profit from the increase in digitalization and telemedicine in Germany,” expresses **Achim Hartig** from GTAI.



Better Together- Shaping a Sustainable Ecosystem for Growth

With the lessons learned in the pandemic and a degree in crisis administration, many leaders in the industry have been pushing solutions to transform the healthcare ecosystem into a terrain for sustainable growth. Much like in nature itself, a healthy ecosystem is achieved through a common symbiosis. In other words, a collaborative effort that includes all stakeholders in the sector.

To achieve true innovation in healthcare, we must adopt an interdisciplinary vision that considers the product, process, and system and collaborations between governments and other types of organizations. This requires purpose-driven synergies between public and private actors. To achieve innovation in the healthcare sector, we must view healthcare as an investment rather than an expenditure. Prof. Dr. Dennis Ostwald – WifOR Institute

To build lasting structures, Victoria Williams from GSK affirms: “We need to work together with politicians, payers, HCP associations, and patient groups to ensure that we continue to

welcome innovation. This has absolutely been the case in Germany so far, and we need to ensure it continues to be the case.” With a clear goal to “accelerate growth and make Germany a powerhouse in the overall growth of GSK.” In this sense, **Victoria Williams** has set a bet on innovation: “We were driven by wanting to bring innovation to patients. In order to increase the pace to do things faster, you need to have a clear decision-making process, a clear goal, and an organization that is absolutely focused on making a difference.” Moreover, Williams states that: “bringing innovation can also save money for the country. In a post-pandemic world, we need to look at designing a preventative strategy.” As a renowned producer of vaccines, the company can prevent burdens on the health system through immunization strategies. A field where “Performing joint initiatives on disease awareness and prevention between companies and the government is also important.”



Innovation and collaboration are also the base for sustainable systems in the long run for Bayer Pharmaceuticals. **Dr. Daniel Steiners** knows: “Innovation and collaboration are both critical to helping overcome some of the biggest challenges of our time. This is why Bayer invests continuously in research and development – with over 5 billion euros each year. This sum also reflects our confidence that we can truly make a difference today and tomorrow.”



Additionally, he highlights the value of digital advances for the sector: “Bayer believes that digitalization of the healthcare system, the application of digital technologies, and access to health data are key to boosting research and development into innovative treatments, medical devices, and diagnostics.”

Experts in seeing the value of collaboration are Thermo Fisher. As a “strong partner working in the background,” as **Claudia Dierig** defines it, “Thermo Fisher is a leader in the industry because of our diverse and integrated portfolio, which can support customers at every stage of the value chain. We collaborate across our value chain - from key universities and research organizations to large-scale manufacturing and clinical trials to enable our customers’ important work.



The collaborative approach combined with innovative ideas pushed by R&D and building diverse portfolios are strategies companies are using to ensure growth in the future. Taking threats like employee shortages into concrete action plans, as Dr. Steiners illustrates in Bayer’s Future Strategy for Germany –aims to secure sustainable employment growth in Germany from 2025 onwards. With this program, we are also leveraging our network of external scientific and governmental partners, building up an e-commerce hub, strengthening internal re-skilling, and attracting external talents for digital and R&D roles in Germany.

Lastly, it should not be forgotten that at the center of the system remains the patient. Therefore, when it comes to continuing to drive health, patients should be at the center, and companies should be flexible to adapt to new needs. As stated by **Amina Elsner** from Ferrer. “To enhance the quality of life for patients and maximize societal impact, improving our work practices and business management is imperative. This entails a strategic approach to patient care incorporating cutting-edge medical interventions and fostering innovation in the healthcare industry. By embracing these principles, we can develop a patient-centric ecosystem that empowers individuals to lead healthier, more fulfilling lives while generating positive externalities for the broader community. Achieving this requires a commitment to excellence and a willingness to adapt to changing circumstances while always placing the patient’s needs at the forefront of decision-making.”



The role of Germany in the Global Healthcare map

In 2023, Dr. Lauterbach expressed¹³ the importance of healthcare by announcing a contribution of €130 million to the World Health Organization (WHO) on behalf of Germany. He emphasized that the WHO has played a critical role in managing the COVID-19 pandemic and will continue to protect the world from future health emergencies.

This contribution supports key priority areas such as antimicrobial resistance, health emergencies, health systems strengthening, and WHO reforms. The funds were planned to be channeled to the WHO-BMG collaborative program, WHO's COVID-19 response, and the WHO Hub for Pandemic and Epidemic Intelligence in Berlin.

Germany's increased flexible funding was aimed at providing vital support to the WHO's base program. Germany has been a significant contributor to WHO's initiatives. In the 2020-2021 biennium, Germany was the WHO's largest overall contributor and the second largest in 2022. The country has also been the top donor to the ACT-Accelerator, a global collaboration to swiftly develop, produce, and fairly distribute COVID-19 vaccines, tests, and treatments.

As noted by WHO Director-General Dr. Tedros Adhanom Ghebreyesus, Germany has demonstrated exceptional political leadership and vision in helping shape the global health architecture, with a stronger, sustainably financed WHO at its center and a pandemic accord based on equity and solidarity. Germany is looked to for its support, partnership, and leadership in building a safer, healthier, and fairer world. Furthermore, Germany is the top donor to WHO's Contingency Fund for Emergencies, which is a crucial tool for responding immediately to acute health emergencies around the world.

While boosting inner innovation, Germany is also on a mission to define its role on the global healthcare map. Pandemics are the best example to showcase that health knows no borders and that guaranteeing solutions to future global healthcare emergencies and sustainable health markets will rely on a collaborative, international effort.

Since the year 2009, Germany has hosted the World Health Summit, generating a place for the conversations of the future of health on a global level- demonstrating that the country wants to take a driver's seat in the international health agenda. As **Roland Göhde** from the German Health Alliance (GHA) puts it, "The World Health Summit (WHS) is a highly effective and crucial backbone for international health engagement." Göhde adds to this that thanks to the WHS, the GHA "gain(ed) the trust of other organizations" and elaborates: "In 2014, triggered by the Ebola epidemic in West Africa, we started to collaborate with the WHS while having established a multisectoral action group on Ebola. At the time,

it was challenging for the German government and other interested parties to locate and bundle German actors to address the Ebola crisis by supporting the three affected countries. We provided mapping and matchmaking services to bring players together and to share information with institutions that lacked an overview of the situation. From that point on, partnerships with organizations such as UNAIDS and UNITE were quickly established.

All in all, WHS is the fundamental nucleus and most important platform of German global health engagement, and many of the achievements of other pillars in this area would not have been possible without it."

Clear examples like the strategic action plan formed during the Ebola out-brake in 2014 or the deep commitment to international global health programs like UNAIDS or UNITE show that Germany has taken a leading position when confronting the health crisis through strategic partnerships.

German University Hospital Charité is one of the largest hospitals in Europe. **Prof. Beate Kampmann**, director of the Centre for Global Health of the institution, shares: "The importance of global health cannot be emphasized enough, and Charité has a significant role to play." The organization has resources from patient care and innovation, essential in addressing global health issues. With this center of excellence for research, Prof. Kampmann aims to contribute evidence-based science to the global health dialogue and policy-making process. They want to engage in a worldwide conversation with various stakeholders, including industry players, to develop effective global health strategies that benefit everyone. Major academic institutions such as the Center for Global Health Charité have a significant role to play in this endeavor.

Alexander Boxler is the Managing Director of the GHA - German Health Alliance. Their task is to support our members in building international partnerships in health across the globe. "At the GHA, we believe in the power of collaboration and its synergies, so we bring together diverse actors from multiple fields and regions worldwide. Representing stakeholders from different sectors makes GHA a unique organization." As Berlin has become an international center for global health and



¹³ <https://www.who.int/news/item/03-02-2023-global-health-leader-germany-reaffirms-strong-support-to-who-for-2023>

a priority for many organizations, the GHA is in the right place to work on global health projects. Mr. Boxler believes, “We should all work towards maintaining Germany as a leading nation in the subject.”

“Germany has been a leader in setting the strategy for global health, having established a global health sub-committee within the parliament and a federal government strategy on global health that launched in 2022. The WHO Hub for Pandemic and Epidemic Intelligence also opened in 2021 in Berlin through active support from the German government. All these initiatives demonstrate commitment and lessons learned from the pandemic and show us different innovative ways to repair the chronic lack of investment. Today, ongoing issues, including the geopolitical war, energy crisis, and inflation, are continual risks to maintaining global health on the agenda and achieving the United Nations Sustainable Development Goals, especially SDG 3 – good health and well-being for all,” says **Victoria Grandsoult**, Virchow Foundation for Global Health



Extensive experience in establishing international benchmarks for innovation.

The industry’s consistent capacity to translate theoretical concepts into practical applications has played a vital role in facilitating this accomplishment. The foundation of this strength lies in the reliable and close collaboration between companies and scientific research institutions. Some of the well-known scientific organizations in Germany include:

- The Fraunhofer Institute, which encompasses the Department of Biomedical Technology.
- The Helmholtz Association of German Research Centers, which includes a Dementia Research Centre.
- The Robert Koch Institute (RKI).
- The Paul Ehrlich Institute (PEI).
- The Institute for the Hospital Remuneration System (InEK).
- The Leibniz Association, which includes various institutes such as the German Diabetes Center.

High on Germany’s agenda are also initiatives to build greener structures, as Alexander Boxler, Managing Director of GHA, explains:

“Another priority for the future is addressing climate change and exploring the healthcare sector’s role in this area. Among our members, companies have developed the concept of a Green Hospital, which employs innovative technologies and sustainable architecture

to reduce energy consumption. As we move forward, it is vital to consider new materials that can further reduce energy usage.

Committed to European climate goals, German companies are switching to more sustainable sources of energy, as **Dr. Marc-Pierre Möll** (BVMed) names “the Green Deal of the European Commission and the goal to make Europe the first climate-neutral continent” as one of the big topics, “There is a program with more than eighty directives and regulations coming up for the industry to be more sustainable – with massive effects and impacts. This program is a big challenge for the industry. Therefore, we are working within BVMed on a sustainability strategy as well.”



Moreover, the industrial sector has also put emphasis on social commitment. “In Germany, we have a national Supply Chain Due Diligence Act that will be effective in January 2023,” explains Möll, whose association is already conducting studies on the ecological and social footprint of Germany’s MedTech sector. The law, he mentioned, obliges companies in Germany to respect human rights by implementing defined due diligence obligations along their supply chain. “In Germany, hospitals that buy from Medical Device companies already ask for the social and ecological footprint as part of their contracting process,” says Möll- “With the information of our study, companies will be able to measure their footprint and use it as a benchmark. It is exciting being frontrunners for transparency and a willingness to improve.”

As a role model for sustainability, transparency, know-how, and innovation, Germany wants to shape structures for a universal, collaborative health system.

“Fast and sustainable progress in global health can only be achieved by an emphasis on translation from science and research to practice, as well as by trust and global partnerships among all sectors, inspired and led by the UN 2030 Agenda Sustainable Development Goals (SDGs). It will be decisive to link global health policy shaping and public health data science under truly equitable inclusion and involvement of the Global South at all levels, while together, we must consistently strengthen and expand translation from the strategy level to the implementation level – yet one of the largest and most critical gaps and thus main challenges. It is the triad of academia, policymakers, and digitalization that will form one of the most effective levers in addressing the global health challenges,” says **Roland Göhde** from the German Health Alliance.



It lies now in the hands of all stakeholders to sustain a multidisciplinary network that pushes this global agenda forward.

Achim Hartig

GTAI Managing Director and Chair
OECD IPA Network



EF: When was it most challenging to attract investments during this time, and why?

AH: Knowing that an energy transition would occur was one of our most challenging moments. There are two sides to the challenge. The first is incurred business costs. The demand for renewable energy for many businesses during the energy transition is reflected by significant changes in the cost structure. The other side of the challenge is required investments, the clear need to invest in future technology. Without renewable energies and the corresponding technology, businesses will become less attractive to partners, suppliers, and clients. We had to communicate new perspectives for businesses and change our objectives and communication style based on these new paradigms to attract companies to Germany's new opportunities. Executing these changes in our strategy effectively was the most challenging part.

Germany Trade & Invest is a neutral organization. We consult the investing company and recommend regions for foreign direct investments according to the demand profile provided by the investor. At the same time, we have a remit to communicate the advantages of regions in Germany that are undergoing high degrees of structural transformation. Ultimately, our clients always receive unbiased information based on empirical facts so that they can make informed decisions. And, of course, as a government agency, we offer all our services free of charge.

EF: As the chair of the OECD network of investment promotion agencies, what trends do you see in terms of atrophic investments and strategies coming forward for the future?

AH: Renewable energy, new mobility, digitalization, the availability of resources, and the circular economy are the most important sectors for FDI in many economies becoming carbon neutral. OECD countries tend to gear investment promotion activities towards these sectors. Economic digitalization is also a major factor in increasing sustainability, national resilience, and greater structural autonomy.

As the countries within the OECD are similarly structured economically, these similarities make it easier for investment promotion agencies of the network to share knowledge and best practices amongst themselves. The OECD network of investment promotion agencies strives to share the best practices and benefits of sustainability in Foreign Direct Investments. We develop methods to improve the chances for success of and benefits derived from foreign direct investment for nations.

EF: What factors keep Germany at the forefront of innovation in the sectors that promote investment?

AH: Companies across a variety of industries are using business models in Germany that tap the huge opportunities within Germany's more than 3 million companies base of small to medium-sized enterprises.

Germany also sports a unique public-private research structure with a vast number of scientific institutions working on practical applications on behalf of and together with the industries.

Many industries, including the pharmaceutical industry, use German R&D capabilities to achieve success in the German and European markets.

EF: What are GTAI's role and impact in attracting business investments to Germany, specifically in the healthcare sector?

AH: One of GTAI's greatest benefits for foreign companies is reducing the

complexity of entering the German market. Investors need just-in-time clarity for sound decision-making if or if not to engage in an international business. Germany is globally known for accuracy, precision, and quality. These qualities also extend to its administrative and regulatory processes. We cut through bureaucracy and simplified expansion to Germany. GTAI helps foreign investors understand their situation, for instance, by providing information on specific markets and industries in the healthcare sector, EU medical-device regulations, certifications for special tools and devices, the latest technological developments, public subsidies, and the healthcare reimbursement system in Germany. Investors value our information and advice as they are reflecting changes in Germany as their target market in real-time.

Conversely, when laws change on the reimbursement process, we receive direct feedback from businesses, which we can directly communicate to policymakers. In this sense, we are the voice of foreign business investors in Germany.

EF: What advice would you give to a company considering investing in healthcare and Germany?

AH: First, contact Germany Trade and Invest and get support. To create a business plan, multinational companies must research the legal, economic, social, political, ecological, technological, and commercial aspects of the country they want to invest in. Business investors must use standard frameworks to assess the markets. However, it might be challenging for a small and medium-sized company to do this sufficiently on its own. This is where we come in. We help companies address all the relevant categories. We provide advice and information, all free of charge, tailor-made to the specific situation of a company to fill in the blanks in the business plan and allow the company to make better decisions.

Businesses are organized differently in different countries. Germany has a lot of industry associations that play a major role in creating policies and building platforms to develop business. For an accelerated market entry, we can offer to connect companies with the right associations and multipliers, whereas direct seller-buyer matchmaking is not part of our services.

EF: In what way has digitalization and sustainability in healthcare been improving investment and promoting business in Germany?

AH: Digital business models in healthcare are getting traction because certified services are eligible to be reimbursed by health insurance. Process optimization in the medical device production industry is significantly driven by innovation in the deployment of digital technologies and can raise quality and lower costs. These aspects are also incentives for foreign business expansions in the healthcare segment since they entail opportunities to participate and profit from the increase in digitalization and telemedicine in Germany.

EF: What are some of the things you have been most proud of in GTAI's work attracting investment in the last couple of years?

AH: I am very proud of my worldwide team. In the last five years, we doubled the number of companies pursuing foreign direct greenfield investments in Germany. In the last three years, the demand for large multinational companies for our services has skyrocketed and led to some of the largest investments in Germany for the last 60 years. These are tremendous accomplishments. Germany's economy, throughout crises, remains attractive to investors. Although we have become a service partner for several multinational companies, the majority of our clients remain small and medium-sized businesses, creating most of the economic value in Germany.

Dr. Frank Wartenberg

President
IQVIA, Central Europe



EF: What are your priorities for the upcoming year?

FW: *IQVIA has evolved over the last ten years; we have transformed, expanding our services to reach a broader space in healthcare: the industry, the payers, the providers, and government bodies. With this in mind, we have a 360° view of the healthcare system. Our key priority lies in using connected intelligence technologies to improve and strengthen the healthcare stakeholders' collaborations for better patient outcomes.* Our key asset is the relationships with the different stakeholders across traditional borders of the healthcare system. We support and drive healthcare forward by improving patients' lives and managing costs appropriately within the system. We aim to keep the system affordable while still delivering quality patient results by connecting the information from multiple sources within IQVIA through connected intelligence. One example is the implementation of Real-World Evidence (RWE), which is of utmost importance for better decision-making, innovation, and new or advanced therapies. We bring all the stakeholders together, combining technology with clinical and our information business and services organization, to reduce the cost of health system engagement. There are many opportunities today with the available data and technology, and we are ideally positioned to offer a value-adding structure.

EF: You recently published a report on the global use of medicines where you project a 3 to 6% global growth. How do you see growth in your region?

FW: The pharmaceutical market development has two key drivers: demographics and innovation. The population is getting older, and with age comes higher morbidity, which drives demand. Additionally, Germany and Austria have a growing population because of inbound migration. Secondly, there is an increasing demand and supply of therapeutical innovations, which also will drive growth. Germany is still innovation-friendly, despite the new legislation being cost-containing. Most developed new chemical entities or active substances make their way into the German market.

“Germany will grow; generics will capture the volume growth locally, and the innovation pipeline will be even stronger with mRNA technology in oncology and CNS.”

It is hard to project future growth accurately because of the pandemic impact, the backlog of untreated patients, and the undiagnosed patient catch-up. There will be between 3 and 6% growth in value and volume in a similar range. The health sector is a key factor in the economy, roughly

about 30% of the GDP in Germany and Austria. Home care, medical devices, medical supplies, care institutions, hospitals, and industry are all part of the healthcare system, making it one of the largest employment sectors.

EF: What are IQVIA's customers' biggest requirements and needs?

FW: Our services include a combination of information and analytics, which, added to our clinical capabilities and technology, makes for an extremely strong value proposition. The most innovative firms have chosen us as partners to drive their pipeline and bring their products to the market. Secondly, we offer solutions to our clients by combining analytics, data, technology, and clinical research expertise in different areas. We do a lot of outsourcing, digitizing, and creating transactional platforms. We offer a very strong proposition, which is in demand from providers such as hospitals that integrate data, vaccination centers, and other stakeholders across the healthcare system. The combination of our assets creates a connected intelligence that is very in demand. We have conversations with Medtech companies on how to use the data they generate for real-world evidence to learn from and improve tracking patients' treatment.

AI and Machine Learning need a presence in the Hospital Sector. We are currently building AI models that use live data from procedures on patients from Hospitals, supporting HCPs. While the physicians are doing an intervention, they will get live recommendations on how to proceed depending on the live parameters, sensor data, or procedure stage. We will use historical data from the AI model to make recommendations to the surgeon. This is one of the most ambitious projects we are working on for the upcoming months.

EF: What were the key successes for 2022 and what are the key trends, and what will stand out in the German market?

FW: Post-pandemic, I believe Germany has done well in the last couple of years; decisions were quickly made, and the push for vaccines was strong.

From a digital standpoint, the public administration part of the system has significant room for improvement and still faces challenges in data exchanges. Energy, which seriously impacts the industry and is out-of-stock, is another big concern. New legislation is being discussed, which opens up better pricing for specific areas, such as oncology, antibiotics, children's medication, or specific in-demand critical medication to have a higher reimbursement for Europe-based production. Above all these challenges, there is a willingness to learn, and this will hopefully change the system for the better. *There is an awareness of the need to do more to digitize the country. The agenda is clear, which, if accelerated, will improve the situation for patients and the population.* Companies like ours have many opportunities and work to do. I am optimistic about the future of the country and IQVIA.

Roland Göhde

Co-Founder & CEO | Virchow Foundation for Global Health
Chair of the Board | GHA - German Health Alliance
Member of the Board of Trustees | World Health Summit
Senior Managing Director | Sysmex Partec GmbH



EF: You have worked in GHA - German Health Alliance since 2014. Could you elaborate on its evolution over the years?

RG: The GHA - German Health Alliance, with experience of 32 years based on its three predecessor organizations, has two distinct branches: a global health and health system strengthening focused arm, initially known as the German Healthcare Partnership (GHP) jointly established in 2010 by the German government through the Federal Ministry for Economic Cooperation and Development (BMZ) and the Federation of German Industries (BDI) and a strong Medtech focused arm, the previous German Healthcare Export Group. In summary, GHA, in its current set-up, comprises a diverse, on purpose, very heterogenous range of currently around 120 leading actors from various sectors and areas, such as pharma, Medtech, diagnostics, digital technologies, capacity building & e-learning, healthcare consulting, architects and constructors, logistics, insurance, development cooperation, NGOs, science & academia on board, among others. The change towards a multisectoral initiative was initiated when I was appointed as Chair of the Board in 2014 – at that time, a unique shift in the health area, especially considering that we operate under the umbrella of BDI.

Health system strengthening through reliable, long-term, eye-to-eye partnerships are at the core of our organization's DNA. With our diverse membership base, we form strategic alliances and stimulate, initiate, and execute concrete projects, such as the "Applied Biomedical Engineers" capacity-building initiative in Africa, involving five member companies and a university of applied sciences along with organizations and institutions of the partner countries and GIZ. Our multi-actor-based health system strengthening approach was presented at a health-related G20 event in December 2016 when Germany took over Presidency for 2017 and where it already had been considered a blueprint for multi-sectorial cooperation, intending to inspire other countries and regions to establish similar organizations leading to highly potential new cross-links and cooperation among each other.

EF: What are GHA's priorities and agenda for this year?

RG: Especially since 2020, we have significantly expanded our development efforts and formed new strategic partnerships and alliances. Special importance and relevance have a strong cooperation of GHA with vfa, the German Association of Research-Based Pharmaceutical Companies, and Spectaris, the German industry association for the high-tech medium-sized business sector. As the "Coalition for Health," together with BMZ and GIZ (German international development cooperation agency), we strive to establish a new concept of dedicated health partnerships. While climate partnerships and energy partnerships are continuously taking on the political agenda, it seems that establishing health partnerships is burdened by the complexity of biology and medicine, with health being even much more complex. In order to achieve success and contribute to transformative improvements, we are convinced that it needs an intensified multilateral health engagement while at the same time also strengthening the pillars of bilateral partnerships. Too often, there is a "versus"-discussion about multilateral and bilateral engagement. What, in fact, is required is an intelligently established and managed matrix of both. Currently, we are focusing on certain, well-selected African partner countries for health partnerships, while with our exclusively international GHA, we, of course, also have our sights set on Asia and Latin America. Establishing long-term health partnerships will remain a top priority on our agenda this year.

EF: How do you ensure that other countries recognize the value of your initiatives and projects, and what steps are you taking to raise awareness about the significance of your activities?

RG: The backbone of our initiatives involves creating, establishing, and maintaining trust among actors from different sectors and areas, requiring a proactive, continuous effort. This is crucial, and we can well draw on past experiences to achieve them, which has an immense effect on ensuring awareness and recognition of our vision, mission, and values at an international scale.

To improve health systems while building up a modern, resilient health infrastructure and health services in a well-targeted manner needs the integration of the various activities and projects from all sectors, those already running and those yet in the pipeline, small and large projects, which need to be balanced, interconnected, and make fit together in the required systemic, holistic approach. However, already the first and extremely crucial step of professional mapping and matchmaking can be very challenging. Unfortunately, it is precisely in this step resources are often not sufficiently deployed, which then has a negative impact on the entire process of a systemic strategy.

What all sectors need, including policymakers and governments, are common health metrics in order to assess health investments and to measure their impact on socio-economic development, economic growth, and the resilience of health systems and also financial systems. In general, the translation from basic research and knowledge gained from fighting diseases, epidemics, and pandemics towards shaping global health policies by *applying scientific excellence, the power of digitalization, and AI will be one of the most important potentials and contributors to achieving SDG 3.*

EF: You work on many fronts in global health, GHA, and Sysmex, and you are the CEO and Co-Founder of the Virchow Foundation for Global Health. How will you continue to balance priorities and resources to strengthen collaboration?

It is most important to listen very carefully to those who possess knowledge of the pain points, challenges, and issues, especially on the ground, including those who deliver and implement ground-breaking solutions. Establishing out of civil society engagement, together with the Presidents of the German National Academy of Sciences Leopoldina and the Berlin-Brandenburg Academy of Sciences and Humanities, the non-for-profit Virchow Foundation for Global Health follows the insight that urging all actors and stakeholders to increase their efforts definitely must go along with highlighting, recognizing and rewarding at highest possible, well visible international level the most impressive, leading examples.

The translation from the strategy level to implementation is the biggest hurdle. Coming up with strategies is significantly simpler than executing them on the ground. Also, it needs a paradigm shift from "strengthening health systems" to "strengthening systems for health." This is a distinct thought process that highlights whom we must include and what partnerships we need to form under a systemic, holistic view. GHA serves as a blueprint for instilling confidence and trust between various sectors while focusing on multisectoral-driven implementation. If we integrate this asset into more extensive alliances and strategic platforms, the private sector can further contribute to addressing current challenges in a more targeted manner.

Alexander Boxler

Managing Director,
GHA - German Health Alliance



EF: Could you begin with a brief introduction to the German Health Alliance as a global partner in healthcare?

AB: The GHA is a member-based organization aligned with the BDI. The organization comprises 120 members, including companies, NGOs, development corporations, consulting firms, and academic institutions.

At the GHA, we believe in the power of collaboration and its synergies, so we bring together diverse actors from multiple fields and regions worldwide. Representing stakeholders from different sectors makes GHA a unique organization. NGOs have great networks in many countries, which some companies lack. When companies collaborate with NGOs, it usually leads to good results. Government support is also necessary, and the GHA includes partners such as GIZ and KfW. Our task is to support our members in building international partnerships in health. We focus on world regions, Latin America, Africa, Asia, China, Eastern Europe, etc., and topics including global health, market access, and development cooperation. We work with organizations such as the WHO, GAVI, and OECD Business. While the BDI covers a European and a national level, GHA operates at an international level.

We focus on two main pillars:

The Political dimension: creating visibility at a political level for certain areas. *When engaging with Health Ministers, we often observe intense competition for limited resources. The decision to invest in a new bridge rather than a prevention program is an example of this challenge. While a bridge can be seen when completed, the benefits of a prevention program are less tangible and only become evident in its absence."*

The Practical dimension: building platforms and support with project initiation. Our working groups in Africa, Asia, and other regions offer German actors opportunities to form international partnerships with our partners abroad. We have organized successful conferences, such as the German - African Health Forum and the German-East European and Central Asian Health Forum, which have been attended by Health Ministers from various countries. These events always involve our German partners. Additionally, we participate yearly in several trade fairs, such as MEDICA & Arab Health in Dubai which is particularly important for our MedTech members.

Germany remains an important player in the healthcare industry, with over one million people employed in the sector, making it comparable in size to the automobile industry - one of the largest sectors in Germany. The health industry alone generates an economic footprint of 165 billion euros. The GHA health space is unique since it comprises, besides some big companies also, a vast number of small and medium-sized companies, many of which specialize in specific areas. These companies are not widely known but compose the backbone of the German health industry.

EF: How do you balance the needs and define priorities, considering you represent stakeholders from different sectors: industry, NGOs, academia, etc.?

AB: Finding a balance with the many members in our network can be challenging. However, we all agree that our vision is Shaping health for all. This means that the GHA improves access to health for people worldwide.

We strengthen Germany's role in global health as an essential component of international cooperation and foreign trade, and our networks and partnerships contribute to value creation in Germany and beyond.

GHA's role is to support our members with their international health projects and open platforms for their topics. We strive to maintain strong connections with all our members. Communication is key to finding solutions. *We have defined the areas in which we are active, and through our ten working groups, we cover a wide range of topics. We place great importance on personal contact to gather feedback from our members. We understand that smaller companies may have different priorities from larger ones, which may require different services.*

EF: Could you share a success story showing the success in elaborating business models?

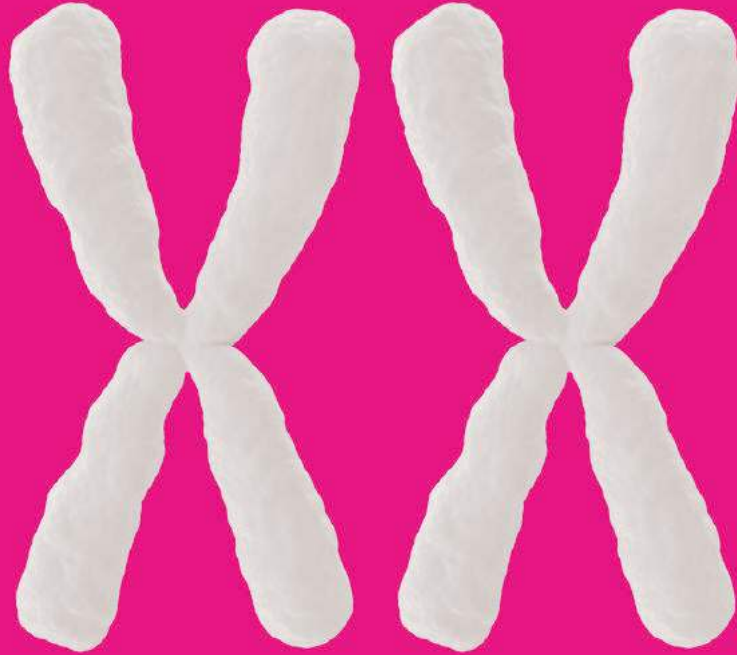
AB: The GHA is not directly responsible for the implementation of projects; the success stories belong to our members. Before the pandemic, a collaborative effort within the GHA resulted in the establishment of an Applied Biomedical Engineering program in Senegal and Kenya. GHA member companies worked alongside the University of Aachen to create a bachelor's degree program that would train engineers for maintenance purposes. This initiative is a good example of how German companies can collaborate with various stakeholders to promote the transfer of know-how and development in other countries. Another instance that exemplifies our approach is when a microscope was needed at a maternity hospital in Lutsk, Ukraine. I reached out to a member who has this type of microscope, and they immediately decided to donate it. Thanks to our partnerships with NGOs, logistics were possible, and we transported the microscope to Ukraine. We even have photographs of its arrival and usage.

EF: Fast forward five years; looking back at this period, how would you like to be remembered, and what would you like to grow further?

AB: I would like to see the GHA grow and see even more partnerships between German companies and organizations with international partners that benefit both sides. I hope that more companies will join our organization, thereby strengthening our collective efforts, advancing our shared goals, and expanding our network. *I want Germany to adapt quickly to the challenges we are facing and have favorable conditions for the further development of products, especially regarding regulation and data usage, so that our companies can grow, improve, and develop solutions and help people with these solutions.*

At a global level, it is crucial for health to be viewed not only as a cost but also as an investment, leading to more investment in health and preparedness for the next inevitable pandemic.

THERE ARE



REASONS WE DO WHAT WE DO.

Women's health is very close to our hearts. Now is the time to put it in the spotlight and focus on HER needs. That's what we're committed to, that's why we're #hereforherhealth

Find out more about us and our vision on [organon.com/germany](https://www.organon.com/germany)



 **ORGANON**
Here for her health

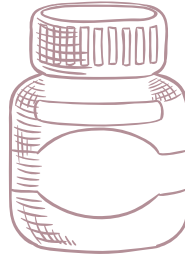
Chapter 3

The German Pharma Market

“The sector and the state need to design a sustainable healthcare system for the future.” Dr. Kai Joachimsen, Managing Director of BPI

This chapter provides an overview of Germany's pharmaceutical landscape and the role of pharmaceutical companies in Germany's industry dominance. It explores growth trends, regulations, and the sector's economic significance, aiming to provide a comprehensive understanding of the market's domestic and global importance.

The Pharma landscape



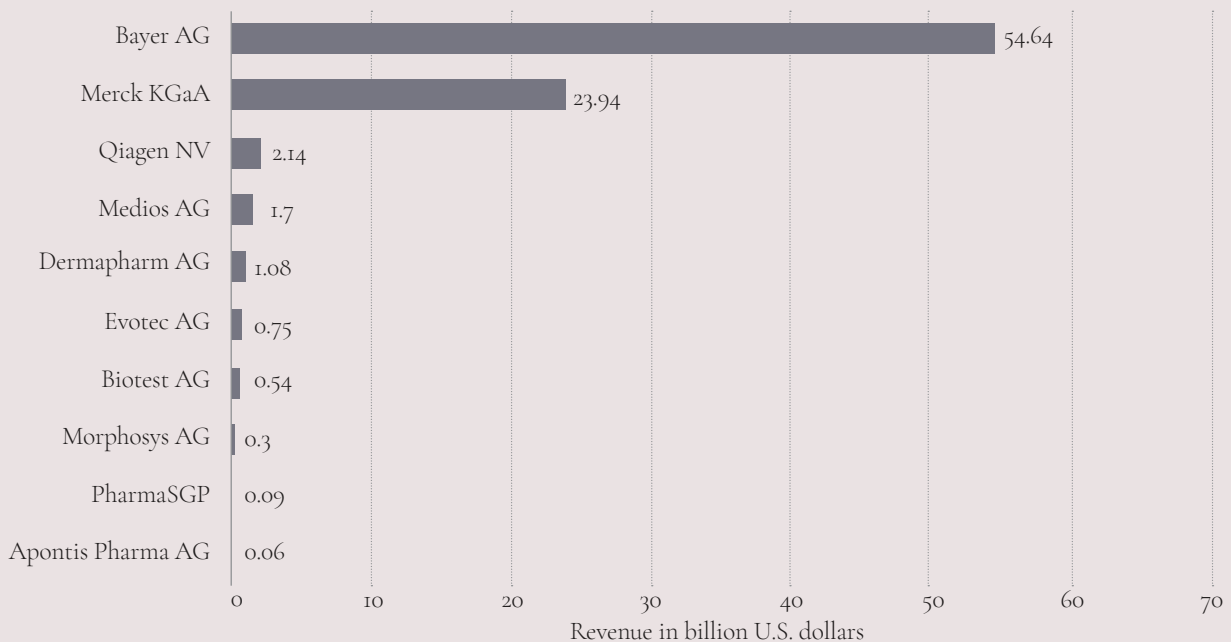
With 84.3 million inhabitants and a Gross Domestic Product (GDP) per capita of 48,527.400 USD in Dec 2022, Germany is not only Europe’s most populous country but also represents the biggest pharmaceutical market in the region and the fourth largest worldwide. In 2020, and according to GTAI, Germany generated a production value of EUR 32.4 billion, making it one of the leading pharmaceutical manufacturing locations in the EU. The approximately 550 German pharmaceutical companies, mostly SMEs, are the backbone of the economic sector, with around 91 percent of drug manufacturers having less than 500 employees. Overall, the German pharmaceutical industry has a workforce of 143,000 people (2020) and invested almost EUR 7.7 billion in R&D¹.

The sector shows the highest research intensity across all major German industries – about 14.4 percent of revenues were reinvested in R&D in 2020.

However, the German healthcare system is facing rising costs, fragmentation, and unequal distribution of healthcare resources. Health expenditure per capita and total health expenditure were up by 7.5% from a year earlier, the largest increase since calculations started in 1992².

Top 10 Pharmaceuticals manufacturing companies in Germany by revenue for May 2023

Ranking of the leading biotech and pharmaceutical companies based on revenue in Germany in May 2023



<https://www.statista.com/statistics/1385142/revenue-top-biotech-pharmaceutical-companies-germany/>

¹ <https://www.gtai.de/en/invest/industries/healthcare-market-germany/pharmaceutical-industry#:~:text=Germany's%20pharmaceutical%20industry%20in%20num-bers,-Germany%20constitutes%20the&text=Overall%2C%20the%20German%20pharmaceutical%20industry.manufacturing%20locations%20in%20the%20EU.>
² https://www.destatis.de/EN/Themes/Society-Environment/Health/Health-Expenditure/_node.html last accessed July 3rd, 2023.



Role of German Pharmaceutical Players in the World

German pharmaceutical players occupy an essential international role. According to Forbes³ Global 2000 ranking, the following German Pharmaceutical companies are among the largest in the world. Besides their global reach in sales, German Pharma companies invest

large parts of their R&D efforts outside the country. According to a 2021 published policy paper by the German Institute for Economics, German Pharma allocated 54% of its R&D expenses in regions outside Germany.⁴ This way, Germany's leading pharmaceutical companies are not only creating impactful market value, but playing an instrumental role in the growth of the economy and society when it comes to innovation, access, and professional development opportunities.

Forbes' rank	Name	Sales	Profit	Assets	Market value
137.	Bayer	U\$S 53.33 B	U\$S 4.36 B	U\$S 139.69 B	U\$S 63.47 B
263.	Merck KGaA, Darmstadt, Germany and its affiliates	U\$S 23.36 B	U\$S 3.49 B	U\$S 52.34 B	U\$S 79.2 B
411.	Fresenius	\$42.71 B	U\$S 1.44 B	U\$S 81.55 B	U\$S 15.6 B
1064.	Beiersdorf	U\$S 9.25 B	U\$S 793,5 M	U\$S 13.29 B	U\$S 31.46 B

Source: Forbes 200, June 2023

World Bank data:

Social and Economic Indicators:

Life expectancy at birth, total (years):

81 (2021)

Total population:

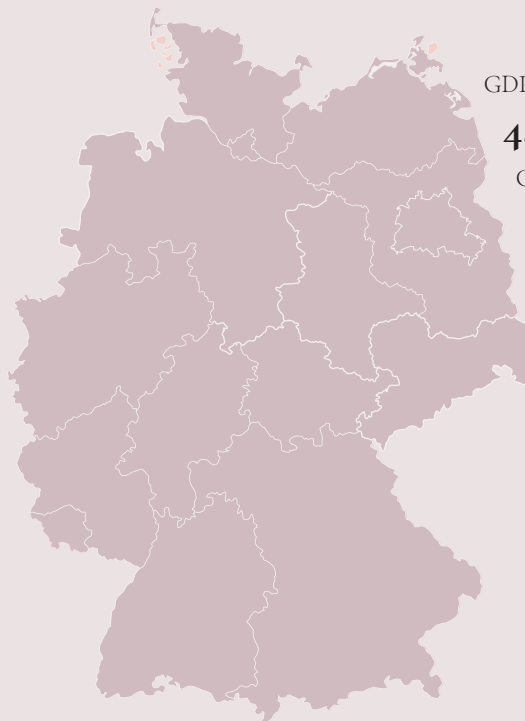
83,196,078 (2021)

Net migration:

154,592 (2022)

Human Capital Index (HCI) (scale 0-1):

0.8 (2020)



GDP (current US\$):

4.26 trillion (2021)

GDP per capita (current US\$):

51,203.6 (2021)

GDP growth (annual %):

2.6 (2021)

³ <https://www.forbes.com/lists/global2000/?sh=43a50a755aco>

⁴ https://www.iwkoeln.de/fileadmin/user_upload/Studien/policy_papers/PDF/2021/IW-Policy-Paper_2021-Arzneimittel-made-in-Germany.pdf

Revenue in millions of Germany Pharmacies by drug category



Source: <https://www.statista.com/statistics/460401/turnover-of-german-pharmaceutical-market/>

German Pharmacy Market

Pharmacies have the legal mandate to ensure the supply of medicines to the population; this includes OCT sales and prescription medicines. In the current German pharmacy landscape, 180.68 public pharmacies assist 3 million people daily, and offer courier services, and night emergency services, while online services are heavily extending.⁵

Prices in the German Pharma sector are highly regulated and this also applies for product sale in pharmacies. Sale price is set at a relatively low 3% margin above the purchasing price from the industry. Therefore, a fix pharmacy fee was established in 2004- and rose in 2013 to 8.35 Euros per prescription drug and is charged for pharmacy services.

Since the demand for pharmaceutical is directly linked to demographic development, Germany's aging population will require more medical services in the future, including the supply of medicines. In 2023 the revenue of the Pharmacy market is projected to reach US\$ 76.26 bn and show an expected annual growth rate (CAGR 2023-2027) of 4.02%, resulting in a market volume of US\$89.29 bn by 2027.

Online vs. Brick and Mortar.



“The ePharmacies have been and remain to be the growth channel” **Dr. Dominique Ziegelmayer**, from DataMedIQ, an information provider specializing in the online pharmacy business, is convinced that the future of Pharmacies is online.

As ePrescriptions arrive in Germany, a transformation period will join along. “ePrescription will lead to major growth in pharmacies because consumers will understand that, at least for some indications, it is easier to just get pharmaceuticals online and have them delivered to your doorstep,” states Dr. Ziegelmayer.

The German Pharmaceutical Industry Association (BPI) represents

a broad range of the pharmaceutical industry nationally and internationally. With over 50 years of experience developing and distributing pharmaceuticals, it aims to develop a future-oriented healthcare system and participate in health policy reform discussions. The association campaigns to maintain a variety of therapeutic quality-oriented pharmaceuticals and ensure patients receive the medicines and therapies they need.

And it is as important to develop compliant, data-driven policymaking. Access to data and interoperability of data is key, with AI being a big game changer. The business model can become more efficient and accurate and yield more effective outcomes through digitalization.”

The Association of Research-Based Pharmaceutical Companies (vfa) – is the trade organization of research-based pharmaceutical companies in Germany. The vfa includes 48 leading research-based pharmaceutical companies, more than 100 subsidiaries, and affiliated companies, which employ nearly 90,000 people in Germany. Their members represent over two-thirds of the German pharmaceutical market and are among the leading research-based pharmaceutical companies worldwide. They ensure therapeutic progress in pharmaceuticals and safeguard the high standard of drug therapy. In Germany alone, research-based pharmaceutical companies invest 5.2 billion euros annually in drug research for new and better medicines.

“Germany is one of the world's strongest production locations where innovative, patented medications are concerned,” explains **Han Steutel, president of Verband Forschender Arzneimittelhersteller (VfA), the Association of Research-based pharmaceutical manufacturers.** Adding, “Even amidst the stress test of the Covid-19 pandemic, Germany has remained capable of delivering and has exported significantly more patented medical products to China than it has imported from that country.”⁶



5 Die Apotheke- Zahlen, Daten Fakten https://www.abda.de/fileadmin/user_upload/assets/ZDF/ZDF-2023/ABDA_ZDF_2023_Broschuere.pdf

6 <https://www.ifpma.org/news/global-pharmaceutical-industry-leaders-meet-with-german-officials-to-discuss-life-sciences-innovation-in-germany-and-global-pandemic-response-involving-the-g7/>

Pro Generika, founded in 2004, is the representative body of the German generic and biosimilar pharmaceutical industry. It has 17 members covering around 70% of the German generics market. Current figures show generics are making up an ever-increasing proportion of the supply with decreasing costs. Four-fifths of all medicines taken every day in Germany are generics. Despite the healthcare system relying increasingly on the supply of off-patent drugs, health insurers are spending less on them.



Bork Bretthauer, **Pro Generika's** managing director since 2011, notes, "Active ingredients are still being produced in Europe on a significant scale. Politicians should focus on strengthening the existing production of active ingredients and medicines and stopping further migration. The best way is to change the framework conditions that led to the relocation to Asia in the first place, meaning we must eliminate the extreme cost pressure on basic supplies and create scope for more resilience in the supply chains again."

Pharma industry as an economic factor: The manufacture of pharmaceutical products leads to technological progress, especially in the medical field; jobs are created, and internationally competitive companies have positive spillover effects on other economic sectors in Germany, positively impacting the overall economy. Germany is not just about selling pharmaceuticals; new active ingredients and therapies are researched, developed, and produced for domestic and world markets. However, companies in Germany face an impenetrable network of government control instruments, which has a direct influence on the sale of their drugs and can have a lasting impact on research and production.

Bayer aims to achieve long-term returns for the business while positively impacting society and the environment through sustainable transformation development through its portfolio, global reach, and innovation power. According to **Bayer Pharmaceuticals' Senior Vice President and General Manager, Dr. Daniel Steiner**, "The current geopolitical climate has not only exposed the fragility of the global supply ecosystem –extremely complex for the pharmaceutical sector– but has triggered the need to reassess how and where we produce and trade. We now have the opportunity to build genuine resilient supply chains that foster long-term value-creation by striking a balance between growth, sustainability, and consumer demands." Adding on a more positive note, "There is increased recognition of the need for constant collaboration and dialogue between all relevant stakeholders globally and locally to strive through these tough times together."



Dr. Michael Popp, **CEO of Bionorica**, a leading company in phytotherapy with operations in more than ten countries across Eurasia, believes Germany is the best market for phytopharmaceuticals in Europe because there is the highest awareness and acceptance of these pharmaceuticals. Bionorica unlocks the huge potential of active plant ingredients by using cutting-edge research and innovative technologies to produce effective and safe herbal remedies. "We are a plant-based medicine



company, and there will be a market with opportunities and changes across Europe over the next few years," adding, "We look for the best scientists and laboratories wherever they are, find them, and convince them to collaborate with us. We strive to be competitive and, when possible, ahead of our competitors."

Regarding innovation and long-term growth potential, the German healthcare industry is a major economic driver. Dynamic innovation and transformation processes mark the vigorous growth of the sector. GSK's three pillars unite science, technology, and talent to make a difference in more people's lives. A global leader in developing medicines for respiratory disease and HIV, GSK is building a presence in other key therapy areas such as immunology and oncology. **Victoria Williams**, **Senior Vice President and GM of GSK** –a science-led global healthcare company and now a fully focused biopharma company– shares her thoughts on Germany becoming an innovation powerhouse, "With the recent changes and new financial stabilization of the statutory health insurance act, keeping Germany an innovation powerhouse is important. Germany's healthcare system and budget are at risk with the current geopolitical situation. Seeing the pharmaceutical sector as a cost driver and increasing rebates might stifle innovation with the changes to the AMNOG process. Innovation can save costs through fewer hospitalizations, more prevention, etc. We must work with politicians, payers, HCP associations, and patient groups to ensure we continue welcoming innovation in Germany."



Germany is the third-largest medical technology market in the world, offering many opportunities to maintain and grow our business, with an attractive and growing market with a highly skilled labor force. Its medical device industry is one of the most lucrative healthcare markets globally, accounting for approximately \$44 billion annually. **Thermo Fisher** remains a market leader at the forefront of innovation. "**Thermo Fisher** is committed to tailored solutions and customer-centricity in its innovative portfolio covering biotech, biopharma, MedTech, diagnostics, and applied industries. Our mission is to enable our customers to make the world healthier, cleaner, and safer. We are also focused on developing products that support our customer's goals," shares **Claudia Dierig**, **VP & MD, Thermo Fisher Scientific Germany**. As a key player in the industry, customers, suppliers, and partners look to TF to drive standards and meet industry expectations for sustainability across our operations, product design innovations, and strategic advisory services. "We are actively reducing our carbon footprint by over 30% by investing in renewables in Europe. Our overarching commitment is to achieve net-zero emissions by 2050. Thermo Fisher Germany actively engages in environmental and product design sustainability opportunities." Thermo Fisher has stepped up and implemented some policy changes from the EU Green Deal. "We implement these transformations in setting up our manufacturing and office sites and ensure that all sites comply. We have a large sustainable footprint in Germany, and a Design for Sustainability program, set up through R&D that incorporates life cycle thinking into product design early in product development."



Looking forward to Clinical trials

Clinical trials are an essential part of the development and licensing of new medicinal products, guaranteeing their efficacy and safety. According to WHO, in 2020, Germany ranked as the 4th country globally to conduct more clinical trials.

Since 2004, they have to be approved in Germany by BfArM or PEI. The German Clinical Trials Register (DRKS) is the German WHO primary registry. The DRKS contains over 14,000 studies, and around 2,000 studies are added annually, according to BfArM.

In the midst of the COVID-19 pandemic, there was a significant shift in the global clinical trial landscape. With the record fast-tracking approval of vaccines, the framework with which health agencies conduct clinical trials has been impacted for the seemingly long-term future.

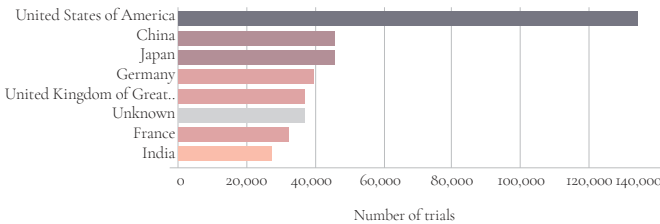
“We will not return to a pre-pandemic scenario; the new environment will simplify procedural issues, streamline approaches to avoid duplication of work, and have a more agile system in the future, backed by good data. Clinical trials are more complex, and we must support initiatives that allow for digital assessments. There will be more and more remote work in clinical trials, and we will have

to find a balance here, too. I am very optimistic about the changes and data quality, which I believe is necessary”, says **Dr. Karl Broich** from BfArM.

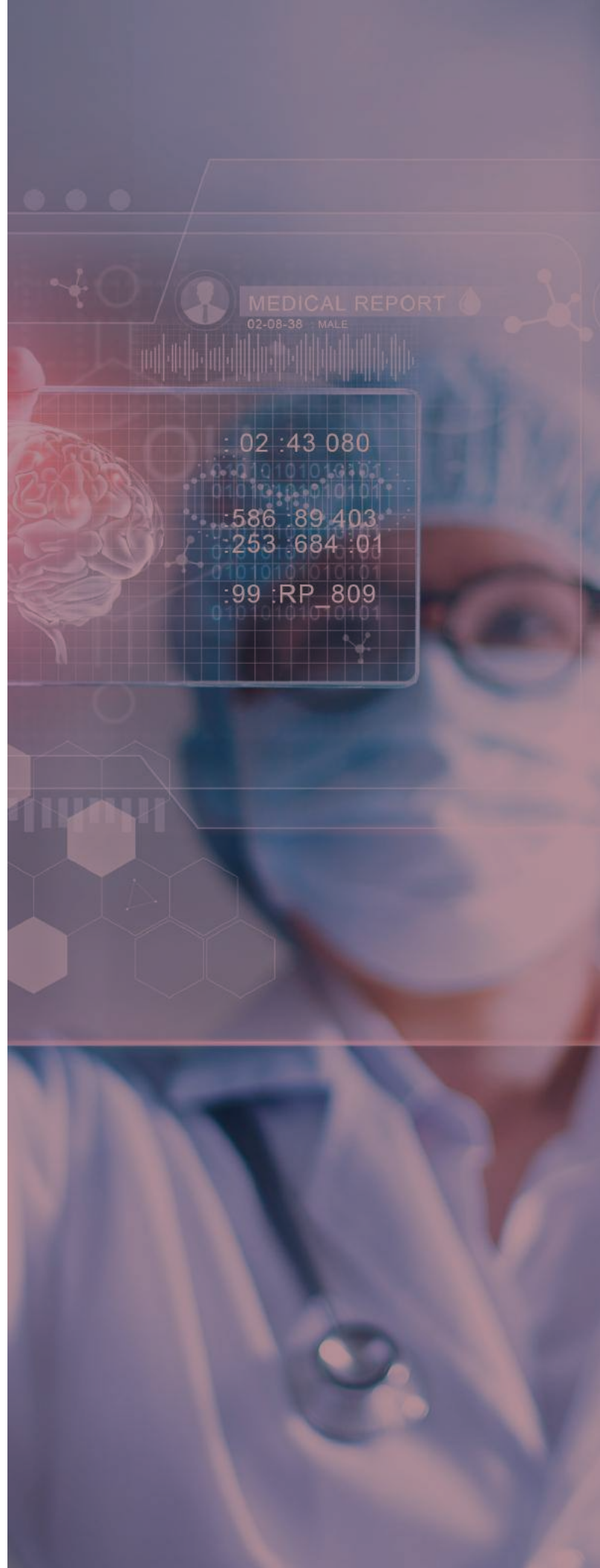


Dr. Broich guarantees that this new clinical trial regulation is an important milestone to provide a better and safer framework to bring innovation as safely and as fast as possible to patients in Europe. “Adopting new technologies to ease the procedures and complimentary use of real-world evidence with data-driven information is crucial to improve regulatory systems.”

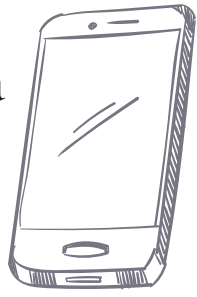
C. Number of trials by country or area



World Health Organization 2020 | Source: Global Observatory on Health R&D



Pharma Supply Chains in a Digital World



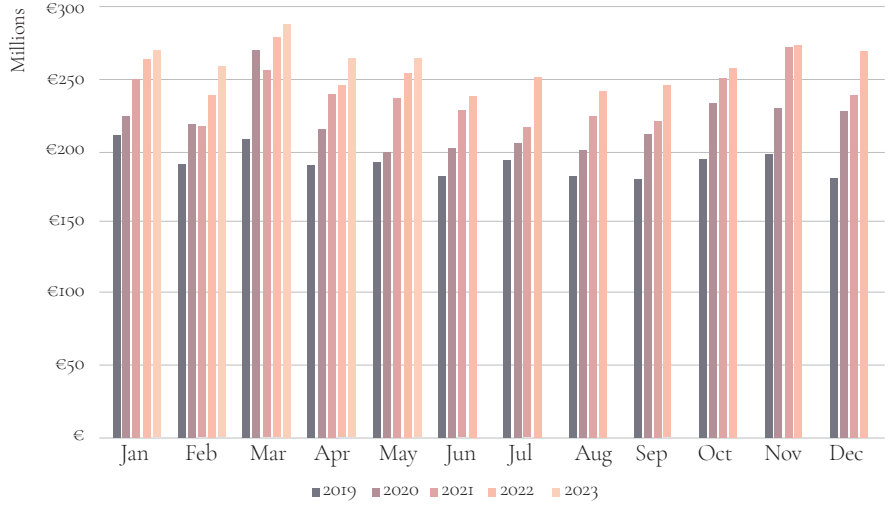
Omnichannel distribution will become the name of the game in pharma. It is still common for pharmaceutical companies to primarily rely on wholesalers, even though direct distribution models are moving in fast. In addition, pharma companies are increasingly collaborating to distribute in markets where their sales and supply chain operations are less established. With the omnichannel transformation underway, companies face pressure to be flexible and adjust their supply chains to different delivery requirements. And so, they must if organizations want to remain competitive in a fast-changing industry.

Omnichannel engagement in pharma is not a series of independent channels like multichannel but one ecosystem. Channels are connected and designed to work together. Omnichannel enables customer-centric work — orchestrating and sequencing content to meet specific people’s needs. A pharma omnichannel marketing strategy allows an HCP to receive information relevant to their specific interests in a disease area and connects them to a website with more detailed information. The industry is in a period of transformation: companies are moving from multichannel marketing to omnichannel strategies. The full pharma distribution network will need to transform. Companies have started using platforms that connect stakeholders along the full pharma supply chain to exchange information.



Five years ago, **Dr. Dominique Ziegelmayer**, CEO of **DatamedIQ**, founded the company, “We saw a need and decided to enter that market to transform pharmaceutical companies into digital leaders.” **Dr. Ziegelmayer** describes DatamedIQ as an information provider with insights on the ePharmacy market in German for pharmaceutical companies. “We buy data from ePharmacies, aggregate it, and then extract unique insights about the market, the competition, and the customer’s behavior.” The information is put on a platform and sold to the pharmaceutical industry for them to understand their brands’ performance, growth rates, gains, or losses in market share within the online market. They can also leverage the data to guide their investment decisions into the market with online campaigns and see how it will impact ePharmacies sales. Customers can access different data segments to analyze the impact of specific campaigns.

Sales development of the nonRx mail order business, 2019-2023



Source: DatamedIQ OTC Insights, INSIGHT Health, Sempora Consulting / <https://newsroom.datamediq.com/channel-shift-pharmabranche>

German Power of Innovation

Health faces unprecedented innovation opportunities due to changing customer expectations, increased digital health adoption, a shift from volume to value strategies, and new ecosystem collaboration paradigms. There are new perspectives for patients and HCPs, startups, SMEs, and institutions, and opportunities to co-design and reinvent patient experiences, medical products, services, ecosystems, and business models. Germany is a strong leader in the pharmaceutical industry, playing a critical role in pharmaceutical development on a global and local scale due to its highly skilled workforce, large population to conduct clinical studies, strong and modern infrastructure, commitment to innovation, and growing consumer health market. In Germany alone, research-based pharmaceutical companies invest 5.2 billion euros annually in drug research for new and better medicines.



“The industry has been working closely with the German government on reinvigorating Germany’s role as a life sciences innovator. Innovation from across the life science ecosystem has huge potential as a Strategic Industry (‘Leitindustrie’) for Germany’s growth potential in terms of investment and employment”, states **VfA president Han Steutel**.



Reflecting on the importance of innovation, **Dr. Steiner from Bayer** believes, “There is no innovation without collaboration, and we must invest in innovation today to help patients tomorrow. In recent years, Bayer has invested more than seven billion USD in biotech acquisitions and managed 60 strategic and ongoing alliances.” He is adamant that Germany has the potential to lead the global bio revolution. “To do this, however, we would need the right innovation-friendly environment which understands the need to invest today for tomorrow’s patients from a political, regulatory, and funding perspective. This, unfortunately, is currently not the case in Germany.”



“Germany values and accelerates innovation, which saves money for the country. Our footprint is extensive and diverse in Germany, with R&D, manufacturing, and clinical trials critical to keep innovating,” states **Victoria Williams, Senior Vice President and GM of GSK**. “In 2021, we performed 47 different clinical studies in Germany, involving over 11,000 patients at 680 research sites.” GSK Germany has 3,400 employees and two manufacturing sites in Marburg and Dresden, with over a hundred years focused on vaccine production. They also have a leading cutting-edge R&D site in Heidelberg that is focused on oncology. Ms. Williams indicates, “Germany is the most important vaccine market for GSK in Europe, the second-largest GSK vaccine market in the world. In a post-pandemic world, we must look at designing highly effective preventative strategies,” concluding, “We are at the end of the year with a strong performance, helping GSK overall meet our objective of reaching 2.5 billion people over the next ten years with our medicines and vaccines.”

As antimicrobial resistance awareness is increasing and antibiotics are being reduced, physicians prescribe more plant-based medicines, especially for children and urinary tract infections,” avers **Bionorica’s**



Professor Dr. Michael Popp. “Our products are produced under GMP regulations and quality control and are not comparable to food supplements. Before the European Phyto regulation, getting marketing authorizations for plant-based medicines was difficult. Today, we are present in many countries and have many opportunities.” Even so, Dr. Popp insists on “the need to raise awareness on the value of phytopharmaceuticals, to grow the market and are working on growing stronger in several countries with different products.”



Organon is a global healthcare company with a portfolio of therapies and products in women’s health, biosimilars, and established medicines across a wide range of conditions and diseases. **Christoph Habereeder, Managing Director of the D-A-CH Cluster**, emphasizes women’s health’s strong economic impact, “more than 50% of humans are female and a strong pillar in the workforce, with the number of women in medical or pharmaceutical professions increasing.” He believes women’s health needs to be understood and accepted as an important global field: “It is a missed-out and neglected market and healthcare segment. Women’s health is seen as an individual problem, often dismissed, ignored, or marginalized. If men had endometriosis, we would already have the best generic drugs. Women’s health needs to get the visibility it deserves, free of the stigma many women’s health conditions have.” Mr. Habereeder suggests the imminent changes in the industry will be regarding the role of AI in planning production. “Digitalization will bring tremendous changes to how certain healthcare areas are understood and provided, especially regarding women’s health. At Organon, we are advancing how we use data and digitalize products along the supply chain. Women are increasingly using healthcare apps. Devices such as smartwatches offer tracking and measurements on health matters, temperature, and ovulation.”



The Pharmaceutical market does not end with the biggest burdens of disease. Players like **Dr. Schulze**, General Manager for Germany, Ultragenyx, recognize that “Patients with rare diseases still have high unmet needs.” This is why Ultragenyx is committing to addressing those needs in severe genetic diseases.

Ahead Together



We unite science,
technology and talent to get
ahead of disease together.

Our aim is to positively impact
the health of 2.5 billion people over the next 10 years.

GSK

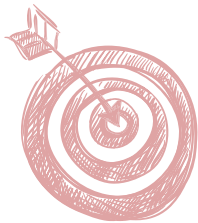


 de.gsk.com

Discovering the innovative spirit and diversity of German enterprises.

“We are generating new jobs, paying taxes, and making a significant contribution towards the healthcare industry in Germany being at the helm of innovative countries worldwide.” Dr. Daniel Steiners, Bayer.

In this article, we zoom into the local success stories that have contributed to Germany’s healthcare reputation and explore what these pioneers are currently focusing on.



Bayer

Bayer AG, a multinational pharmaceutical and life sciences company headquartered in Leverkusen, Germany, is a leading global name renowned for its diverse product portfolio and innovation. The company has business units spanning Pharmaceuticals, Consumer Health, Crop Science, and Animal Health, all geared towards its ultimate purpose, “Science for a Better Life”.

Bayer’s pharmaceutical business stands as a critical pillar within the company and represents a substantial portion of Bayer’s business footprint. According to Dr. Daniel Steiners, Senior Vice President and General Manager, Bayer Pharmaceuticals, Germany, the pharmaceutical sector holds a critical role in the context of Germany’s market size and global relevance.

The pharmaceutical business focuses on prescription products, primarily for cardiology and women’s healthcare, and specialty therapeutics for treating diseases like cancer and hemophilia. Also, it provides diagnostic imaging for early detection and treatment of diseases.

Bayer’s role in building these resilient supply chains and ensuring patient care aligns with their mission, “Health for All, Hunger for None”. Emphasizing this mission, Steiners added, “Here in Germany, we strive to ensure that the right therapies and services reach the right patients at the right time by being patient-focused on all processes and solutions. We drive innovation in fields from medical research and governance to marketing, sales, and customer interaction.”

Bayer invests over €5 billion each year in research and development, securing its position as an industry innovator. Steiners noted that Bayer had invested more than seven billion USD in biotech acquisitions between 2019 and 2021, managing 60 strategic and ongoing alliances. These collaborations amplify Bayer’s ability to accelerate innovation and expand its drug discovery capabilities. The company’s investment in these initiatives represents their commitment to building innovative, patient-focused solutions.

To illustrate Bayer’s commitment to innovation, Steiners highlighted its collaboration with the Charité Berlin and the state of Berlin to build a cell and gene translation center. “The goal here is to create an ecosystem that accelerates cell and gene therapy’s translation, development, and commercialization in Germany and Europe,” he said.

Furthermore, Bayer leverages the power of Artificial Intelligence (AI) and machine learning across its business operations, from research and development to doctor education and awareness. The company adopts new digital technologies to optimize communication channels and foster education and innovation in the healthcare sector.

Attracting and retaining talent is crucial for Bayer. Steiners said, “Researchers join us because they are curious and want to specialize and discover the one thing that would make a difference in people’s lives.” In Germany, Bayer has launched initiatives such as the “Gesamtbetriebsvereinbarung” to secure sustainable employment growth and attract talent for digital and R&D roles.



Bionorica

Bionorica is a leading German pharmaceutical company specializing in the research, development, and production of herbal medicines. The company was founded in 1933 and has its headquarters in Neumarkt, Germany. Bionorica focuses

on creating plant-based pharmaceuticals and herbal remedies, following strict scientific and pharmaceutical standards to ensure the safety and efficacy of their products.

When Prof. Dr. Michael Popp took over the company, his first decision was to focus: “Even now, as a medium-sized company, we still have to focus and prioritize. A concept is needed; in my case it was a clear: do research, run clinical trials. Bringing evidence to plant-based medicine to work on new products was unusual back then. We invested and grew, always focusing on our priorities in all we did. Our concept includes working closely with physicians and pharmacists. We enter new markets with the approval of regulatory agencies with new registrations achieved through our evidence-based focused strategy.”

Focusing on being a plant-based medicine company, Bionorica conducted research, got results, and published the information, that allowed today to demonstrate the value of our products and convince anybody worldwide of their worth. Prof. Popp is committed to working with the best and the brightest: “We look for the best scientists and laboratories; in Birmingham, Alabama, Philadelphia, Stockholm, or wherever they are, we find them and convince them to collaborate with us. It doesn’t matter where they are if they are the best in what they do.” This is how he manages to drive advancements in research and innovation.

In terms of market, Bionorica sees opportunities across entire Europe. “Germany is the best market for phytopharmaceuticals in Europe, it has the highest awareness and acceptance of these types of pharmaceuticals. The trends in Europe are not bad and they seem to follow; the second biggest market is France, where the market has been impacted because homeopathic products are no longer reimbursed, giving plant-based medicine a huge opportunity.” France, Spain, Italy, and France are key markets with constant growth.



Fresenius Kabi

The company was founded in the 19th century by the Fresenius family in Bad Homburg. Today, Fresenius Kabi is a global healthcare company that specializes in biopharmaceuticals, clinical nutrition, medical technologies, and IV. generic drugs.

With around 42,000 employees worldwide and a €7.8 billion revenue reported in 2022, the German-based company continues to expand its global footprint and provide access to highly innovative therapies for chronically ill patients.

In the segment of medical technologies, Fresenius Kabi offers vital disposables, infusion pumps, apheresis machines, cell therapy devices, and more. *Dr. Christian Hauer, the Executive Board Member and President of Fresenius Kabi MedTech Germany, shares their formula for success within their business model: “At Fresenius Kabi, we have a clear 3+1 strategy. We want to deliver future growth with the three growth vectors Biopharma, Nutrition, and MedTech and gain resilience in the IV. Generics sector. I am excited to drive the profitable growth of MedTech in the new vertical integrated organization. Fresenius Kabi will achieve this by providing MedTech products and solutions that improve clinical outcomes, patient safety, and customer process efficiency.”*

A crucial part of Dr. Hauer’s mission for Fresenius Kabi MedTech, is to expand its market share beyond German borders. “Fresenius Kabi MedTech is geographically very well balanced; we have the same business share in the US and Canada as in Europe, about 40% in each geography, and a presence in China and other Asian countries. We have also completed some acquisitions; for instance, ten years ago we decided to acquire Fenwal Holdings, Inc. for our transfusion and cell therapy business. We combined the Fresenius Kabi business with Fenwal Holdings, Inc. to form a leading transfusion medicine and cell therapy company. We have been very successful and have achieved a high market share and excellent growth momentum. We plan to do the same for our Infusion and Nutrition System business, where we are leaders in Europe, Middle East and Africa, and Latin America. Currently, we have a small market share in the US, so we decided to acquire Ivenix in March 2022 to bolster the business there. We aim to become a major player in the US IV. therapy market with Ivenix and its superior technical capabilities. In Europe, we are leaders, and we have a clear plan to be successful in the US market as well. We have invested heavily in new technologies and US-based production infrastructure; the next two or three years will be critical to gain market share in the US and improving the service quality for our customers that goes with our product in support of patients and healthcare providers”.



Schwabe Group

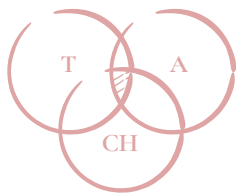
The Schwabe Group is a family-owned business that was founded in 1866 and is composed of different affiliated companies specialized in the plant-based pharmaceutical and health industry. The parent company of the Schwabe Group, which is now Dr. Willmar Schwabe GmbH & Co. KG, is one of the oldest pharmaceutical manufacturers in Europe with a company history dating back over 150 years.

Dr. Traugott Ullrich, General Manager of Schwabe Group Germany, reinstates the company's commitment to securing the health supply chain in the country whilst upholding the highest quality standards of manufacturing: "As a manufacturer of herbal medical products the holistic control of each step and aspect not only of our products but also of our supply chain is key for producing outstanding product quality and consistency. At Schwabe, we do have not only a deep understanding but also a proven track record in this respect. Due to the nature of our active ingredients, we need to ensure a consistently high quality despite geographic variations and climatic changes and logistic challenges, for this reason, we decided to have full corporate coverage of the spectrum of the whole process from plantation to production, including harvesting, transportation, and intensive

quality testing of the natural raw materials before they access to our operations processes. Therefore, we were at all times – also amidst the pandemic – self-reliant concerning our supply chain".

As today's consumers are looking to improve their health from a more holistic and responsible approach, Schwabe Group has managed to fulfill these needs through health solutions that are sustainably produced from raw materials and that align with the company's adherence to corporate social responsibility, according to Dr. Ullrich.

Schwabe Group is not only focused on physical health, rather their most important field of interest and source of business are mental disorders such as cognitive impairment, anxiety, and stress-related symptoms of depression. "We focus on the treatment of diseases of deeper relevance such as mental disorders, anxiety, and depression. This is a category that is already now a field of significant societal relevance. Due to the demographic development in industrialized countries, the increasing personal challenges due to a globalized and digitalized world and also as an aftermath of the pandemic situation their medical prevalence will even increase considerably. Being able to offer efficacious natural medicines with an excellent profile of tolerability and safety creates Schwabe a significant growth potential".



Merz Pharma

Merz Pharma is a family-owned specialty-healthcare business that was founded in 1908 in Frankfurt. The company has three businesses: Merz Therapeutics, Merz Aesthetics, and Merz Consumer Health.

The Merz Therapeutics division's portfolio specializes in movement disorders, neurological conditions or liver diseases. Stefan Brinkmann, CEO of Merz Therapeutics Germany, explains how the company has grown the become a regional pioneer in neurotoxins: "In Europe, we are the first company with an approved botulinum neurotoxin for the treatment of sialorrhea in children and adults. The treatment is administered through intraglandular injections. One injection significantly improves the patient's quality of life for four months or longer. Thus, it

is important to treat and bring relief to all patients by providing access to this treatment. Currently, we are focusing on delivering different new forms and types of neurotoxins. We consider the time of onset, duration, and new indications for different patients".

Merz Therapeutics currently has over 80 affiliates globally, 2 production sites in Germany, and more than 700 employees around the world. *As a German success story, "we pride ourselves in being a local production champion with most of our products being produced in Germany. We heavily invest in increasing our capacity for our neurotoxin production facilities. At Merz Therapeutics, we focus on people. We are working together to address the unmet needs of those living with chronic disease and improve their quality of life".*



90 years of knowledge about the healing powers of nature



At Bionorica, we have been researching the pharmaceutical power of medicinal plants for ninety years. That's why we cooperate with around 490 renowned universities, clinics and institutes all over the world. The result is innovative, effective herbal medicines of the latest generation with few side effects. This is in line with the wishes of many doctors, pharmacists and patients: More and more people want to rely on effective herbal medicines.

Best effect from nature - that's what Bionorica stands for.

Dr. Christian Hauer

Executive Board Member and President
Fresenius Kabi MedTech, Germany



EF: You have worked at Fresenius Kabi for over eleven years and enlarged your role in MedTech; how was the transition, how is MedTech included, and what does it mean to Fresenius Kabi?

CH: Shifting to Fresenius Kabi MedTech was important; We merged our Transfusion Medicine & Cell Therapies (TCT) and Infusion & Nutrition Systems (INS) segments into one entity. As a fully vertically integrated organization, I have full P&L accountability for the entire MedTech business, from R&D, production, and supply of all our MedTech product lines, up to our commercial operations. This improved our agility by increasing our decision-making process. Accountability drives each specific vertical business forward.

Fresenius Kabi has other businesses, including IV. Generics & Fluids, Biopharma, and Nutrition. MedTech is different by nature; We supply both, hardware, and software components. We need a strong and reliable service network, we have long-term contracts with our customers, and we provide clinical education to ensure nurses and physicians are properly trained to use our equipment. The sales cycle is much longer than other businesses. All these differences led to the creation a specific vertical organization for positive development. In all segments, managers are accountable for developing the portfolio and the global business.

EF: Could you elaborate on the importance of the MedTech Division to Fresenius Kabi?

CH: At Fresenius Kabi, we have a clear 3+1 strategy. We want to deliver future growth with the three growth vectors Biopharma, Nutrition, and MedTech and gain resilience in the IV. Generics sector. I am excited to drive the profitable growth of MedTech in the new vertical integrated organization. Fresenius Kabi will achieve this by providing MedTech products and solutions that improve clinical outcomes, patient safety, and customer process efficiency.

EF: You are a German-based company with global reach. Could you elaborate on your footprint?

CH: Fresenius Kabi MedTech is geographically very well balanced; we have the same business share in the US and Canada as in Europe, about 40% in each geography, and a presence in China and other Asian countries. We have also completed some acquisitions; for instance, ten years ago we decided to acquire Fenwal Holdings, Inc. for our transfusion and cell therapy business. We combined the Fresenius Kabi business with Fenwal Holdings, Inc. to form a leading transfusion medicine and cell therapy company. We have been very successful and have achieved a high market share and excellent growth momentum.

We plan to do the same for our Infusion and Nutrition System business, where we are leaders in Europe, Middle East and Africa, and Latin America. Currently, we have a small market share in the US, so we decided to acquire Ivenix in March 2022 to bolster the business there. We aim to become a major player in the US IV. therapy market with Ivenix and its superior technical capabilities. In Europe, we are leaders, and we have a clear plan to be successful in the US market as well. We have invested heavily in new technologies and US-based production infrastructure; the next two or three years will be critical to gain market share in the US and improving the service quality for our customers that goes with our

product in support of patients and healthcare providers.

EF: Fresenius Kabi MedTech needs to provide great service and education on its equipment; what strategies are in place to maximize this?

CH: Our product portfolio adds a lot of value to our customer base; our plasma collection devices, infusion pumps, and other products cannot be used without proper training and clinical education. We ensure nurses, pharmacists, and physicians receive the best training to use the equipment with all its functionality. The solutions and improvements result from being close to our customers and users. In addition, we listen carefully to the salespeople to improve the product and add new technological ideas from our R&D centers. We have two R&D centers in the US, one in Germany, France, Italy, and in China. Clinical practices can be different in America, Asia, and Europe, so listening to the local markets is very important because we modify products for them to serve local requirements best. We support our customers in the clinical outcome, improving patients' safety and making the process of our customers more efficient. We invest in software solutions to connect to hospital electronic medical records, to be paperless, and have easy access to their system, leading to a fully web-based architecture; data can be wirelessly and bi-directionally downloaded to the infusion pumps. Our technology is efficient and easy for the nurses to use to save precious time. We pay attention to the nurses', pharmacists', and physicians' work and mirror that as efficiently as possible in our workflow support of our product software.

With the current regulations in some countries regarding data protection and privacy, we lose the potential to access patient data fast, which can sometimes be crucial for healthcare providers to decide on the right treatment.

“ Today’s technological possibilities are enormous, and we believe there should be a way to find a middle ground to ensure data privacy and protection while taking advantage of the technology to provide a better patient outcome. ”

I believe the current strict implementation of data privacy regulations is affecting patient safety in Germany; we could be safer, and it would be to the patient's advantage to use more technological solutions. We need to promote technical advantages and convince society and politics so the patients can benefit.

We acquired Ivenix in the US because we saw Europe lagging behind in software-based solutions. We see that software solutions are advancing faster in the US. They have the software solutions for interoperability and data integration today that we dream of having some years from now.

EF: Germany has been at the forefront of innovation before. What initiatives could be put in place to push this agenda through?

CH: Germany might not have cutting-edge software solutions today,

but we have many other innovative technologies and products. German's MedTech industry is historically very strong in mechanics and optics. Currently, material sciences are becoming more and more important, especially with the new focus on sustainability and environmental protection. In these areas, innovation will play a key role in the next few years. e.g., for new materials, which make overwraps unnecessary, guarantee longer shelf life and with that, we produce less waste.

EF: Fresenius Kabi is involved in social responsibility and sustainability. What initiatives do you have in Germany and at a global level?

CH: Our projects at Fresenius Kabi are spread worldwide; our approach is global and depends on the different locations. For example, our plants in the Caribbean are equipped with photovoltaic systems on top of parking areas and on rooftops of our plants, which contributes to a reduction of our energy consumption. We conduct awareness initiatives that vary depending on the region to foster social responsibility. We initiate various activities with our employees and their families such as planting trees or cleaning highways. At Fresenius Kabi, we recently established environmental protection as one additional decision criteria for new R&D projects or CAPEX investments.

EF: Fresenius Kabi's MedTech division still pushes for acquisitions and partnerships in various countries. What are the key milestones, one year into your role, that you would like to celebrate with your team?

CH: One of the key milestones for us is the acquisition and integration of Ivenix, which will allow us to be a meaningful player in the US IV therapy market. The Ivenix Infusion System with the dedicated IMS software suite is the leading solution regarding flow rate accuracy, dose error reduction, interoperability with EMR systems, and workflow support. This will help our customers in IV therapy to improve their patient-centricity. We continue to support Ivenix and the IV therapy market and grow further in the US market.

During the Covid pandemic, we were faced with many supply challenges; suppliers could not deliver based on force majeure, we had big absenteeism of workers in the plants, and shortages of containers. We used our global footprint to produce close to our customers and worked with our customer groups on a harmonization of the product portfolio to be able to ensure a more robust supply chain. The Utilization of contingencies within our plant network and supplier base was key to ensuring a functioning supply for our customers. During these days we learned more than ever before how important it is to have a global production footprint that allows us to be agile and flexible and react to customer demands and unforeseen shortages in the market.

Claudia Dierig

VP / Managing Director
Thermo Fisher Scientific Germany



EF: From your perspective, is 2023 as a challenge or opportunity?

CD: In every challenge there is an opportunity. As a global leader in serving science, Thermo Fisher plays a critical role in improving the lives of people across the globe. *We foster collaborations that are tailor-made to improve patient outcomes, positively impact our planet, and bring equitable health for all.*

Our mission is to enable our customers to make the world healthier, cleaner, and safer. *Thermo Fisher is committed to tailored solutions and customer-centricity in its innovative portfolio covering biotech, biopharma, MedTech, diagnostics, and applied industries.*

EF: Thermo Fisher is actively reducing its carbon footprint in the world. How are you evolving to net zero emissions by 2050?

CD: Thermo Fisher recently announced two power purchasing agreements to enable 100% renewable electricity across all our current US operations sites by 2026. Thermo Fisher is working to make similar investments in Europe. These projects placed us ahead of schedule for our current reduction target, and Thermo Fisher subsequently raised our Scope 1 and 2 reduction targets to 50%, aligning with the Paris Agreement on the carbon footprint. Our overarching commitment is to achieve net-zero emissions by 2050 and Thermo Fisher has submitted these targets to the Science Based Target initiative for validation. *As a key player in the industry, customers, suppliers, and partners look to us to drive standards and meet industry expectations for sustainability across our operations, product design innovations, and strategic advisory services.*

EF: Can you elaborate on Thermo Fisher Germany's role in the group's growth?

CD: *Thermo Fisher globally had strong results in 2022 despite the challenges with the energy crisis and supply chain constraints. Thermo Fisher grew by 15%, and organic revenue rose slightly, while our core organic revenue grew by 14%.*

Germany's market is critical for the MedTech and science industry and our presence is significant. *Thermo Fisher has a dynamic footprint in Germany with 30 sites nationwide, including the latest acquisition of Peprotech that came through last year.* Of the 30 operating sites, 13 are manufacturing and warehousing sites. The manufacturing sites are large-scale global producers. *Thermo Fisher has over 6,000 colleagues in the country, and Thermo Fisher is an integrated member of the health ecosystem in Germany. Our partnerships with customers, industry associations, and employees are the key to our success now and in the future.*

Germany is the third-largest medical technology market in the world. The German medical device industry is one of the most important healthcare markets globally, accounting for approximately \$44 billion per annum. To remain a market leader, Thermo Fisher remains at the forefront of innovation.

Germany is an important market for Thermo Fisher. There are many opportunities that Germany presents to help us maintain and grow our business. It is an attractive and growing market with a highly skilled labor

force. *Thermo Fisher is committed to our business in Germany and continually looking for opportunities to further grow.*

EF: How is Thermo Fisher using technology for education and further research and development?

CD: *Thermo Fisher is deeply committed to not only enabling our customers' important work but also ensuring Thermo Fisher train the next generation of scientists.* The pandemic accelerated digitalization and drove companies to find ways to engage, educate, and train customers and employees to reach more communities, all from the comfort of their homes. There is an exponential rise and a series of different types of webinars that Thermo Fisher and other biotech companies are launching. *Thermo Fisher ensures that our customers always have the latest research, development, and scientific insights.* It is only sometimes completely product specific, but there is a drive for knowledge sharing. For example, the webinars and conversations Thermo Fisher establish on gene and cell therapies are best for patient-tailored solutions.

EF: How do you assess the power of collaborations advancing in the industry?

CD: *Our Mission is to enable our customers to make the world healthier, cleaner, and safer. Collaboration is central to achieving this. Thermo Fisher supports customers at every stage of the value chain through a diverse and integrated portfolio. Thermo Fisher is present across the entire value chain: from key universities and research organizations to large-scale manufacturing and clinical trials to enable our customers' important work.*

In Germany, Thermo Fisher have a large network of partners Thermo Fisher collaborate with, including research organizations large-scale biopharma and biotech customers, and industry associations. Thermo Fisher is supporting life science research that directly influences diagnostics. *Thermo Fisher partner with our customers at each step and facilitate cross-collaboration.*

EF: In your experience as a manager, how do you keep your employees motivated and how can Thermo Fisher keep attracting the best and brightest for future innovation?

CD: Everyone wants talented employees. *Thermo Fisher keeps employees motivated by a purpose-driven Mission and our 4I Values. Our 4I Values of Integrity, Intensity, Innovation, and Involvement guide our colleagues' interactions—with our customers, suppliers, and partners, and with each other. These four values are the very foundation of our culture and fundamental to our continued growth. Keeping in line with these values, I feel that communication is the backbone and most important mandate for leadership.*

Lastly, Thermo Fisher is committed to making STEM education more accessible and equitable, which leads to a workforce that more fully reflects our society and embraces its diverse perspectives to solve the world's most complex problems.

Kristof Boogaerts

General Manager / Vice President Medical Devices
Johnson & Johnson Medtech



EF: With the recent appointment of Mr. Joaquin Duato as the CEO of Johnson & Johnson, how do you see the future of the company look like?

KB: Mr. Joaquin Duato has extensive experience within Johnson & Johnson. Before being named CEO, he served as the Vice Chairman of the Executive Committee, where he provided strategic direction for the Pharmaceutical and Consumer Health sectors and oversaw both Information Technology and the Global Supply Chain. He strongly believes in the power of technology to accelerate progress in healthcare.

It is all about applied digitalization. Applied digitalization is digitalization with a purpose – and our purpose at Johnson & Johnson has been the same for more than 135 years and we will stay true to it. We believe good health is the foundation of vibrant lives, thriving communities and forward progress. We strive to improve access and affordability, create healthier communities, and put a healthy mind, body, and environment within reach of everyone, everywhere. When it comes to the use of technology, *J&J aims to harness data science and intelligent automation for insight generation to solve the world's toughest health challenge and to reinvent how patients are treated.*

EF: Can you elaborate on the importance of Germany to J&J MedTech?

KB: Germany is definitely one of the key markets for Johnson & Johnson and we have a significant social as well as economic footprint. In Norderstedt, close to Hamburg, J&J MedTech operates one of the largest production facilities within the global J&J supply chain network for surgical sutures and needles and offers professional education for healthcare professionals at the Johnson & Johnson Institute.

The Medical Technology footprint in Germany mostly consists of small to mid-sized German-based companies, with 66% of their revenue being generated from exports. Germany can develop and manufacture medical devices and export them to other countries because of the quality and confidence people have in our innovations.

The Surgical Process Institute (SPI) e.g., is an innovative German organization that was tackling local unmet customer needs and is a great example which highlights the innovative strength of Germany. It came on our radar through its collaborations with some of our customers in Germany. We are supporting the health system by synchronizing workflows digitally, offering real-life learning and making onboarding of new surgical team members easier.

The Johnson & Johnson MedTech German team engages with customers to improve clinical surgical outcomes as it is still a key issue dependent on the procedure. There is a lot of value gained from the data and the algorithms we run.

EF: How is the German market adopting innovation, and how do you see Germany as an innovation powerhouse?

KB: *I strongly believe that Germany will continue to be a hub for innovation.* From my perspective, the hospital landscape and the adoption of innovation and new technology by German physicians could be improved, mostly because Germany has still a high number of hospitals compared to other countries. We should look at different avenues to safeguard patients' access to care by setting up centers of excellence for more centralized complex care. *To give German patients the best, newest, smartest, and least invasive access*

to treatment options and technology, we need to start paying for quality instead of quantity.

EF: How do we increase technological and innovation adoption in Germany, especially in hospitals and for physicians?

KB: It starts with listening to and understanding customer and patient needs and jointly looking into potential solutions. If there is a positive and proven impact on customers and patients the adoption is more likely. It is about developing solutions that tackle the most pressing needs of hospitals, caregivers, patients, and other stakeholders like payors.

There is an impressive example in the bariatric area, where we were able to prove how technology can help caregivers to stay connected with their patients to keep them motivated along the patient pathway and reduce the drop-out rate. For bariatric surgery, there was an 80% drop-out rate between the first consultation and the final procedure, mainly because of a need for better awareness and engagement. Through our digital solution, patient engagement, and patient education initiatives, we were able to decrease the drop-out rate from 80% to 40%. This example shows again how important a holistic approach is and that the investment in prevention is worthwhile.

EF: Is healthcare investment related to value-based care?

KB: In my opinion, it needs a change of perspective. We need to look at healthcare differently - as an investment, not a cost. Healthcare is clearly an investment welfare driver for society. Healthy people contribute to and make a difference in society. In a nutshell, - a healthy nation is a wealthy nation.

Going forward, trust is a key element and an end-to-end, holistic mindset. We should move away from the existing fragmented silo-thinking. Often it is better to invest in an area like prevention to save costs in another area of the care pathway.

Quality value-based healthcare requires trust and willingness to collaborate from all relevant stakeholders to make the collective better. Looking into the future, with a value-based mindset the industry can invest more toward innovation and secure Germany as an innovative hub.

EF: What would you like to celebrate in December, as it will be your fourth year leading the German J&J MedTech organization?

KB: There are many things to celebrate, but one of our biggest celebrations will be the positive impact we had on our patients, our customers, and our employees. We helped our customers with our products, services, and end-to-end solutions to ensure patient treatment and better clinical outcomes. We are truly committed to sustainability. With our various initiatives we secure to be an employer of choice and we are living our Diversity, Equity and Inclusion values and goals. And regarding Environmental Sustainability we implemented some successful and innovative projects to help healthcare providers reduce their carbon footprint. We are supporting frontline healthcare workers with various initiatives and are training around 17,000 healthcare professionals to ensure the highest standard of care. I can celebrate these initiatives with many talented, enthusiastic colleagues, who are contributing to building a sustainable healthcare powerhouse in Germany.

Dr. Daniel Steiners

SVP and General Manager
Bayer Pharmaceuticals Germany



EF: 2020 was the year of diagnostics, and 2021 was the year of vaccines. What do you think 2022 will be remembered for?

DS: Several fundamental changes occurred in 2022, such as Russia's invasion of Ukraine, rising inflation as well as the ongoing COVID-19 pandemic. All of these factors combined have had a severely negative impact on supply chains which is why I believe that 2022 will be remembered as the year in which we rediscovered the importance of supply-chain resilience.

The current geopolitical climate has not only exposed the fragility of the global supply ecosystem – which for pharmaceuticals is extremely complex – it has triggered the need to reassess how and where we produce and trade. We now have the opportunity to build genuine resilient supply chains that foster long-term value creation by striking a balance between growth, sustainability, and consumer demands.

On a positive note, I do believe there is increased recognition of the need for constant collaboration and dialogue between all relevant stakeholders globally and locally to strive through these tough times together. At Bayer, our company purpose is “Science for a Better Life,” which shines a light on topics that drive us and which consequently can help patients and consumers to lead a better life. With this in mind, we also aim to further build up resilient supply chains through innovative solutions to ensure even better patient care.

EF: What mission did you set for yourself, and what lessons are you excited to bring over from Japan to Germany?

DS: When I came back to my Bayer Germany roots, it wasn't so much about setting a mission for myself; it was more about crystallizing a mission for our employees. Together with my Management Team, we want to better understand our contribution towards Bayer's highly inspiring vision of Health for All, Hunger for None.

At Bayer, we are extremely proud of our 160-year-old heritage and also of our almost 100,000 worldwide employees who help to drive our vision. Here in Germany, we strive to ensure that the right therapies and services reach the right patients at the right time by being patient-focused on all processes and solutions. We drive innovation in fields from medical research and governance to marketing, sales, and customer interaction.

Having worked for three years with Bayer Yakuhin in Japan as Head of the Cardiovascular & Nephrology Business Unit, what first surprised me was the traditional methods of communication preferred by doctors, particularly the high frequency and proportion of face-to-face visits. Looking back, what I learned and cherished most about my time in Japan are two mindset-related aspects that will stay with me for the rest of my life.

The first is the art of listening while letting go of preconceived judgments. I truly believe that the ability to tune into a situation without making snap judgments allows for new insights, more collaborative pathways, and, ultimately, better decision-making.

The second thing I learned in Japan is the art of Ikigai: while many people in the Western world focus on winning or losing, Ikigai is about finding a healthy balance between what drives us (our passion), what the world needs (our purpose), what we are good at (our gifts), and what we are paid to do (our careers).

I firmly believe that if we can achieve this balance as individuals, we have the power and potential to collectively shape the future of healthcare in Germany and take it to new and exciting heights for patients today and tomorrow.

EF: What message can showcase the importance of innovation?

DS: If I may, I would like to highlight two key messages. The first is that there is no innovation without collaboration, and the second message is the importance of investing in innovation today to help patients tomorrow. Let me start with the importance of collaboration. Although innovation is deeply engrained within Bayer's DNA – and we are extremely proud of our successful legacy in researching and developing therapies that address high unmet medical needs – we are also aware that no single organization can achieve the Bayer vision of Health for All, Hunger for None. For this reason, a core part of our Bayer strategy is to complement our in-house expertise with external partners focused on technology and expertise that can accelerate and expand our innovation capabilities.

In recent years, Bayer has invested more than seven billion USD in biotech acquisitions and managed 60 strategic and ongoing alliances.

Between 2019 and 2021, for example, Bayer acquired companies including BlueRock Therapeutics, Asklepios Biopharmaceutical (AskBio), and Vividion Therapeutics. These companies share our vision to leverage new technologies and develop urgently needed therapies for patients by embracing breakthrough innovation. Vividion, for example, boasts a breakthrough chemo proteomics platform that enables Bayer to expand its own drug discovery capabilities and unlock traditionally undruggable targets of the human proteome. BlueRock, meanwhile, is a pioneer in stem cell engineered cell therapy, which is advancing its pipeline of therapies for treating patients with neurological, immunological, cardiovascular, and ophthalmic diseases, including Parkinson's Disease.

This brings me to my second innovation message, which is the need to focus on the future today to help patients tomorrow. At Bayer Vital, we recently created a new hashtag, #ForTheNextGeneration. Looking at the bigger picture in Germany, this country is a perfect base to further advance innovation for the next generation of therapies, particularly when you consider its ecosystem and close links between research, development, hospitals, and the pharmaceutical industry.

In fact, Germany has the potential to lead the global bio revolution. To do this, however, we would need the right innovation-friendly environment which understands the need to invest today for tomorrow's patients from a political, regulatory, and funding perspective. This, unfortunately, is currently not the case in Germany.

Take, for example, studies into cell therapies against cancer. According to a 2019 Report by the Expert Commission for Research and Innovation (EFI), China led with 228 studies into cell therapy against cancer, followed by the U.S. with 203 studies. In Germany, meanwhile, only 14 studies took place. One reason for this is that the current research landscape is fragmented and characterized by a multitude of local cluster initiatives.

At Bayer, we recognize this and are therefore collaborating with the biggest hospital in Germany, the Charité Berlin, and the state of Berlin to build a cell and gene translation center in the heart of Berlin. The goal here is to create an ecosystem that accelerates cell and gene therapy's translation, development, and commercialization in Germany and Europe.

“In essence, innovation and collaboration are both critical to helping overcome some of the biggest challenges of our time. This is why Bayer invests continuously in research and development – with over 5 billion euros each year. This sum also reflects our confidence that we can truly make a difference today and tomorrow.”

EF: How is Bayer driving digitalization, AI, and technology to promote doctor education awareness?

DS: Digital technologies, including AI, play a key role in education and innovation at Bayer. We use it, for example, in research and development, supply chain, forecasting, marketing, and sales. In marketing, the healthcare professionals we speak to all have different information needs, and they all fall into various sub-segments. Digitalization helps us better understand and satisfy their information needs. We accomplish this by optimizing our communication channels and messages to better resonate with doctors and their requirements. All the information we package is based on facts from different clinical trials that are tailored according to the professional's needs – and of course, provide a balanced view of the efficacy and safety of all our products. As within most industries, the pandemic positively catalyzed how we digitally interact with stakeholders, including doctors. Virtual meetings are now a common tool to reach out to doctors and healthcare professionals. Two years ago, our pharma representatives used to would mainly visit physicians in person. Now we have adopted the hybrid model because some doctors prefer to meet us in person, and others virtually. Another specific area in which we are pioneers in the healthcare industry is the use of new blockchain tools to further foster education and innovation. For example, we are one of the first pharma organizations to introduce Proof-of-Attendance-Protocols, POAPs, and digital certificates that (as the name suggests) prove attendance at meetings or specialty training.

EF: Can you elaborate on how Bayer uses AI and machine learning towards research and development and how you see it as a disruptive tool for the industry?

DS: At Bayer, we are leveraging the power of digitalization and Artificial Intelligence (AI) in many ways, including enhancing R&D efficiency. Together with our partners, we are using AI, computer modeling, and simulation to catalyze in-house drug discovery. Through our collaboration with Schrödinger, for example, we are using machine learning to design many new molecules, predict their properties, and discover promising new drug candidates.

AI is also used in other parts of our business, for example, within radiology. Many radiologists turn to Bayer as a partner of choice providing

holistic solutions for their specific needs. One challenge, for example, is the increased workload of radiologists – the ever-increasing demand for medical imaging often leads to time pressure and stress, which can contribute to diagnostic errors. With such trends in mind, Bayer recently expanded its radiology portfolio to launch a new platform that provides radiologists with access to digital applications, including AI programs for medical imaging that can help increase efficiency, efficacy and reduce workload for radiologists.

Bayer believes that the digitalization of the healthcare system, the application of digital technologies, and access to health data are key to boosting research and development into innovative treatments, medical devices, and diagnostics.

Within clinical development, there is also an uptake in virtually decentralized clinical trials in which software and sensors are used to monitor patients virtually. Within Bayer, we have an entire team dedicated to researching and looking through different digital platforms for information and solutions.

The biggest challenge we face currently is the digitalization framework and data regulation. Europe is a leader in data privacy, and while high data protection standards are necessary, we should avoid that over-protection of data hinders access to research and innovation. There needs to be a happy medium, such as a safe space for the secondary use of data, where researchers can generate the power of health data whilst protecting it. An example of where data could help us is the AI algorithm we are developing for patients whose cancer is likely to be due to a specific genetic variation. These patients can receive targeted drugs specifically designed to treat their type of cancer, creating better health outcomes for them and increased benefits for social security systems.

The pharmaceutical industry is such a fascinating industry with so much room and potential for growth and development to address patient needs. There is so much insight to be captured yet.

EF: How does Bayer attract the best talent, and how do you keep your employees engaged?

DS: Firstly, working in life sciences is fascinating. Many bright minds are inspired by our vision of Health for All, Hunger for None, and they also are attracted by our Bayer slogan Science for Better. We were just talking about data science – and on my team, for example, I have an astrophysicist who is an absolute wiz in forecasting models, AI, and machine learning. Researchers join us because they are curious and want to specialize and discover the one thing that would make a difference in people's lives. Our data scientists truly desire to use data to create new insights for the industry. We have medical doctors and pharmacists who are intrinsically driven to help improve the lives of patients. Marketers, salespeople, and other talents come to Bayer because they want to channel their creative and communications skills into purpose-driven work.

I personally was captivated by the pharmaceutical industry because we truly make a difference. What is more rewarding than working in an industry that positively changes someone's life or that of your loved ones? I believe this is the key driver that leads many people to join the industry.

We have spoken about talent attraction, yet another critical topic is engagement and retention. On this front, Bayer now boasts a new function called Integrated Talent Experience, the goal of which is to be recognized as the best life science company that develops and accelerates the impact of talents. We are doing this by creating a fertile base to develop meaningful and brilliant future leaders. One example is our move towards helping our employees to “lead with a coaching mindset.” It is crucial that leaders engage with their people and allow them the freedom to operate and harness their creativity and potential.

In Germany specifically, Bayer has launched a new “Gesamtbetriebsvereinbarung,” which – under the motto Future Strategy for Germany – aims to secure sustainable employment growth in Germany from 2025 onwards. With this program, we are also leveraging our network of ex-

ternal scientific and governmental partners, building up an e-commerce hub, strengthening internal re-skilling, and attracting external talents for digital and R&D roles in Germany.

And, of course, several other factors are critical when it comes to retaining talent, such as Inclusion & Diversity, for example. With our recently launched 2030 I&D commitments, we focus on goals such as gender parity throughout management and striving for an adequate representation of nationalities, sexual orientations, generations, and disabilities within our workforce. I personally am also a sponsor within Bayer Vital of GROW, a Bayer Resource Group which is focused on Women's Leadership. I truly believe that the more diverse the team, the more you can look at a project or problem from different perspectives and create out-of-the-box solutions.

EF: What key factors should companies pay attention to become sustainable?

DS: When I joined Bayer in 2009, I was the Head of Sustainability Strategy. Bayer began working and strategizing on sustainability in the 1970s. We committed ourselves to tackling climate change decades ago when we still had bigger chemical plants. As we work towards our vision of Health for All, Hunger for None, having sound KPIs is a key success factor. In this sense, we are resolutely committed to our highly ambitious sustainability goals that are dovetailed with the United Nations Sustainable Development Goals. These include a science-based target to decarbonize and a net zero target, including our supply chain, by 2050. By 2030, our goal is to meet the needs of 100 million women in low- and middle-income countries for modern contraception each year. And by 2030, we also aim to support 100 million people in economically or medically underserved communities each year with self-care solutions.

Bayer is also being recognized for our progress in driving these goals. For example, in the 2021 benchmark report CA100+ investor initiative, Bayer scored best among 166 companies evaluated. And the ESG rating agency ISS ESG praised Bayer as a "Climate Outperformer."

Bayer is additionally recognized for leadership in corporate transparency and performance on climate change by the global environmental non-profit Climate Disclosure Project, recently securing a place on its annual 'A List.'

Despite our progress, we recognize that this is a journey that we are committed to continue together with our worldwide partners.

EF: What do you want to celebrate with your team in 2023 as you celebrate 160 years?

DS: In 2023, I hope various stakeholders will continue to highly appreciate the purpose-driven work of the pharmaceutical industry. We want our work to be recognized and appreciated as a strategic investment that generates new therapy options for patients. We are also generating new jobs, paying taxes, and making a significant contribution towards the healthcare industry in Germany, being at the helm of innovative countries worldwide. I do believe the success of our industry is dependent on our creativity and our capacity to keep innovating as we work for the next generation of health.

Within Bayer Vital, I want to celebrate 160 years strong with the hashtag #ForTheNextGeneration. Our key role at Bayer is to continually invest in the further development of our products and services – and ultimately leverage the full potential of science and technology – so that patients and people all over the world can lead better lives today and tomorrow.

The upcoming years are exciting for the industry because there is a fundamental change in how we approach the development of new therapeutic options.

With all these key treatments and exciting developments, we must prepare the market innovatively and partner with local stakeholders to not only shape the future of healthcare but also to create increasing acceptance of pioneering pathways that move us from treating to potentially curing disease.

Victoria Williams

General Manager Germany
GSK



EF: What was the mission you set for yourself when appointed in January this year?

VW: GSK Germany has been very successful, and this is a landmark year for the company. We have separated from our consumer business, which has now become the independent company Haleon.

My mission at GSK Germany is to take a well-performing business and look at ways to accelerate growth and make Germany a powerhouse in the overall growth of GSK. We have made a global commitment; we will impact 2.5 billion lives worldwide over the next ten years. And through doing that, we will drive a step up in the topline sales growth of 5%. The focus is on bringing innovative medicines and vaccines to patients across Germany and ensuring the right patients have access to our medicines and vaccines as quickly as possible. That is my driver.

EF: What are the lessons learned from the pandemic?

VW: I learned a lot during the pandemic. I was the Global Commercial Lead for a COVID therapeutic, interacting with governments and other stakeholders whilst in lockdown. I also needed to lead a global team at a distance, keeping them engaged and motivated during the pandemic to deliver medicines during uncertain times. We were driven by wanting to bring innovation to patients, and this was a massive learning for me.

To increase the pace of doing things, you need a clear decision-making process, a goal, and an organization that focuses on making a difference. That is how you can make a massive difference.

EF: Could you elaborate on your footprint in Germany and your role in keeping access to medicine at the top?

VW: In GSK Germany, we are 3,400 employees, and we have two manufacturing sites in Marburg and Dresden with over a hundred years of heritage focused on vaccine production. We also have a leading cutting-edge R&D site in Heidelberg called Cellzome, which is focused on oncology. In 2021, we performed 47 different clinical studies in Germany involving over 11,000 patients at 680 research sites.

Our footprint is extensive and diverse in Germany, with R&D, manufacturing, and performing clinical trials, which is critical to have to keep innovating.

Germany is also the most important vaccine market for GSK in Europe, the second-largest GSK vaccine market in the world. Germany must remain a country and healthcare system that values and accelerates innovation. Bringing innovation can also save money for the country. We know vaccinations among children and adolescents in Germany decreased significantly after the pandemic. We are often not crossing the 20-30% threshold for immunization rates in adults, even after the Corona experience.

EF: What initiatives can be put into play to address this situation?

VW: First, we must ensure that government bodies and departments are effectively resourced to move beyond COVID. We must focus on other viruses like meningitis B for children and other diseases. Seeing national recommendations gives Health Care providers and the public confidence. We must ensure we are returning to business as normal to focus on what is next. Performing joint initiatives on disease awareness between companies and the government is also important and can drive that awareness of why prevention is important. Moreover, working with doctors to ensure that they are aware of the benefits of recommending the vaccine is one of the most important actions that could be taken for a patient. We are ensuring that doctors have the capacity and education to suggest preventive measures like vaccines.

EF: How is GSK driving digitalization?

VW: Digital is touching everything we do. In pursuing education, we have a program called the Impfakademie, an entirely educational resource that is a one-stop place for vaccination information. It's non-promotional, where people can attend webinars, request information, or schedule a visit from our team if needed. Using digitalization to drive access to information quickly and completely helps educate physicians better and faster. We are also tailoring our information through understanding our customers better with digitalization. We can address physicians with relevant information to them. Understanding the preferences of information and preferences of channels can really help tailor our education and promotional strategies.

EF: What is needed to ensure Germany is an Innovation Powerhouse?

VW: With the recent changes with the new financial stabilization of the statutory health insurance act, keeping Germany an innovation powerhouse will be important. Innovation can lead to cost savings through fewer hospitalizations, prevention, etcetera. There is no doubt that the healthcare system and budget in Germany are at risk with the current geopolitical situation. *Seeing the pharmaceutical sector as a cost driver and increasing rebates, and with the changes to the AMNOG process, which is market access and payer process, might stifle innovation. We must work with politicians, payers, HCP associations, and patient groups to ensure we continue welcoming innovation in Germany.*

EF: What would you like to celebrate after your first year?

VW: The primary thing we are celebrating is what is behind the innovation: the patients we helped with our medicines and vaccines.

I would also celebrate that we have a very engaged, motivated, talented workforce who are extremely proud of GSK and relate to our innovative products, also for diversity, inclusion, and work conditions. We are getting innovation to patients with a team that is still highly motivated. Celebrating success in the pipeline, we have brought innovative therapies and vaccination. We are at the end of the year with a strong performance, which is helping GSK overall meet our objective of reaching 2.5 billion people over the next ten years with our medicines and vaccines.

Christoph Habereeder

Managing Director
D-A-CH Cluster, Organon



EF: What were the biggest lessons learned from starting with Organon in the German market during the pandemic?

CH: Organon is building up a company purely focused on women's Health; this is something new and will provide for unmet medical needs. I was attracted by the company's purpose and the start-up's significant portfolio and pipeline.

My biggest lesson learned from the pandemic came from putting different priorities into perspective. *You don't need to be together in the same office daily to do a great job. Therefore, you can open yourself to a hiring policy perspective beyond a local level or a specific area. The pandemic allowed us to go for a talent-first approach.*

From an economic perspective, we learned not to take anything for granted. The pandemic showed us that well-established and highly sophisticated systems could pivot. An example of this is the supply chain process of vaccines: There has been a shift in how the economy, including the pharma industry, looks at globalization.

EF: How is Organon setting an example as a forward-thinking company?

CH: Women's Health will be based on incremental changes and niche products, meaning that the organization needs to be agile and seize opportunities as they arise. Our first acquisition, Alydia Health, was a medical device company, not a classical pharma organization. This example sets us apart from others, for our portfolio is more than just big blockbuster compounds. It's about living the purpose, being aware of what serves women, and providing them with their needs.

In addition, it is crucial to establish Public-Private Partnerships and increase visibility to raise awareness. We have been vocal about the role of women in society and their healthcare choices. From the outset, it has been my responsibility to engage with politicians and stakeholders and advocate for this issue.

EF: How do you view the significance of digitalization in advancing Organon's efforts to raise awareness about women's health?

CH: The most imminent changes in the industry will be regarding the role of AI in planning production. At Organon, we are advancing how we use data and digitalize products along the supply chain.

From a research perspective, digitization enhances medical knowledge and will advance the pharma industry, e.g., in understanding real-world evidence.

Women are increasingly using healthcare apps. Devices such as smartwatches offer tracking and measurements on health matters, temperature, and ovulation. Digitalization will bring tremendous changes to particular areas of how healthcare is understood and provided, especially regarding women's Health.

EF: How will digital data privacy adapt to the situation?

CH: Healthcare data is sensible data. We need to find a way to meet the demands and protect sensitive information while using the potential to advance science, security, access, and even save healthcare expenditure. We work on small aspects and incremental advancements rather than on a huge strategy claiming to pursue big healthcare digitalization efforts. Meanwhile, I look forward to a strategy on a European level.

EF: What are the priorities regarding women's health in the German market?

CH: On a global level, women's Health needs to be understood and accepted as a generally important field. It is a missed-out and neglected market and healthcare segment. Women's Health has been seen as an individual woman's problem, or even worse, dismissed, ignored, normalized, and marginalized. If men had endometriosis, we would have the best generic drugs already. *Women's Health needs to get the visibility that it deserves, leaving aside the stigma around many women's health conditions.*

Moreover, women's Health has a strong economic impact, as more than 50% of humans are female. Women are a strong pillar in the workforce, and the number of women in medical or pharmaceutical professions is increasing.

The view on fertility needs to change as well. More than one-third of pregnancies in Germany are unintended. This situation significantly affects women's careers, family situations, and economies. Contraception is not lifestyle medicine, it has a huge impact on societies, and we need to increase awareness of this.

Also, German society is over-aging, which impacts the workforce and fertility as an incentive that could aid.

From a governmental and policy perspective, it's about freedom of choice and unstigmatized support for women. We need to collaborate and bring their Health to the spotlight.

EF: How important are initiatives regarding contraception?

CH: In our country, contraception is in a small segment reimbursed only at a young age. In contrast, France has taken a positive step by reimbursing contraception up to the age of 25 and providing access to fertility. In Germany, *the level of access to fertility and reimbursement varies for married couples depending on their age and state of residence, which is unacceptable. This issue is compounded by the prevalence of myths and misconceptions surrounding female contraception, highlighting the need for education efforts targeting all stakeholders.*

EF: How is Organon setting a new standard in healthcare?

CH: We are listening to women's needs all around the globe. Patient centricity is increasing in importance. It's about bringing scientific advancements and better patient outcomes, which is what the German system looks into.

Professor Dr. Michael Popp

Chief Executive Officer
BIONORICA, Germany



EF: If 2020 was the year of diagnostics and 2021 the year of vaccines, what do you think will be the key healthcare talking points for 2022?

MP: In 2018, more than 20 thousand people died from colds and flu in Germany, Poland, and Austria. In Bavaria, where Bionorica is located, all hospitals were as full as when we transitioned the pandemic, although less critical. During Covid, there were almost no other viral infections, but this changed in June/July 2021 when we realized that especially children didn't have a developed immune response, giving rise to flu. mRNA vaccines for normal colds and flu are still under research, and there are none yet. *The upcoming "normal" cold and flu season could be harder than in previous years, and we need to ensure people will be able to get their medicines. Our business model will not change; we are strong in medicines for colds and flu, and we have successfully used evidence-based research for uncomplicated urinary tract infections and antibiotic replacements, which we introduced in many markets. We have high-quality science and evidence-based products for women's health, which we will be introducing on the market to broaden our product portfolio.* The portfolio in Germany, Austria, and Poland is respiratory and viral infections oriented. We always get European marketing authorization approval for our products before we enter a new country and market, and we then submit it worldwide to other regulatory agencies.

EF: Could you elaborate on Bionorica's footprint and how to stay a leader in the market?

MP: *I joined the company before the re-registration of all the European markets and new pharmaceutical laws when we had only one market: Germany. Physicians were the only channel, and we were relying on the German reimbursement system. As I realized it was risky to depend on this, I started working with pharmacists, and today we are the best-liked company in Germany by pharmacists. We focused on developing various respiratory disease products, which today are very popular.*

In Germany, we are developing women's health and urinary tract infection products and developed growth, which is an advantage when expanding market share. In East Europe, we market multiple products; we first started with respiratory, then urinary tract infection products, so we have a track record. Now we are working to increase our market share to give us the opportunity to grow stronger in each country with different products. *The markets are also increasing; the urinary tract infection market is growing worldwide because, historically, women didn't take medication; they take painkillers or antibiotics or drink more liquids. As antimicrobial resistance awareness is increasing and the use of antibiotics is reduced, the urinary market will automatically grow. An example can be seen with respiratory diseases; 20 or 30 years ago, physicians used to prescribe antibiotics to children, which is not the best medical option. Now, plant-based medicines are prescribed.*

EF: Considering your success story, what would be your advice to other family companies that are willing to take their business to the next level?

MP: When I took over, Bionorica was quite small, and we had difficulties with product registrations. *My first decision was to focus. Even now, as a medium-sized company, we still have to focus and prioritize. A concept is needed; in my case, it was clear: do research and run clinical trials. Bringing*

evidence to plant-based medicine to work on new products was unusual back then. We invested and grew, always focusing on our priorities in all we did. Our concept includes working closely with physicians and pharmacists. We enter new markets with the approval of regulatory agencies with new registrations achieved through our evidence-based focused strategy.

EF: How would you rate the level of awareness of phytopharmaceuticals in Europe, and how have the trends developed over recent years?

MP: *Germany is the best market for phytopharmaceuticals in Europe; it has the highest awareness and acceptance of these types of pharmaceuticals. The trends in Europe are not bad, and they seem to follow; the second biggest market is France, where the market has been impacted because homeopathic products are no longer reimbursed, giving plant-based medicine a huge opportunity.*

Homeopathy has been one of our biggest competitors, and without reimbursement, people are looking at plant-based medication, a huge advantage for us. In France, the market for Homeopathic, supplements, and other similar medicines is quite big, and we could take over as our products are plant-based medicines. *Spain also has a growing market for our products and food supplements, but there is still a need to educate physicians and pharmacists on their use and why there are better than food supplements. Food supplements don't compare to our products; they don't have Good Manufacturing Practices or quality control. Italy is a big market for natural products, mainly food supplements, but awareness of the value of phytopharmaceuticals among Italian physicians, pharmacists, and patients is still needed. It will be a market with opportunities and changes over the next years. Poland is a good market for us; it is growing because the Polish economic situation is convenient.*

Today we are present in many countries, and we have many opportunities. However, it wasn't easy to get marketing authorizations for plant-based medicines years ago, mainly because we didn't have the European Phyto regulation, which helped to introduce products in different markets. As an example, getting approval in Poland used to take about six years, and now with European regulation, it can be done in less than two years, which is encouraging. In Spain, it took us years to get approval because there was no department to work on our case. Things have changed since our portfolio was approved in Spain.

EF: In pursuing research-based evidence and clinical trials, I understand you work with multiple partners. How do you find and work with your partners, considering they are scattered worldwide?

MP: *Having all the research and employees in-house would be a mistake. One can still consult the best scientists without them joining the company. Cooperating with great independent scientists and the best universities and institutes is better. We look for the best scientists and laboratories; in Birmingham, Alabama, Philadelphia, Stockholm, or wherever they are, we find them and convince them to collaborate with us. It doesn't matter where they are if they are the best in what they do. As the owner and CEO, I am a generalist, and all my co-workers must know more than I do in their field. As a company, we want to learn from the best and combine it with our knowledge for successful research.*

EF: How do you attract the best and the brightest to come on board with you?

MP: Thirty years ago, it was very difficult to bring the brightest as people could not see the value in plant-based medicine; they just thought it was just a placebo and didn't work. Without research, we could not get results; without results, we couldn't publish anything. As we managed to conduct research, get results, and publish the information, today it is possible to demonstrate the value of our products and convince anybody worldwide of their worth. It is no longer a problem; we are accepted as a company. We are a plant-based medicine company, and nature matters to the younger generation. The work culture has changed; 20 years ago, the salary was the most important point when looking for a job, nowadays the concept of purpose has also become important. How to contribute to society and influence the future positively are issues that matter when taking a position in a company.

EF: What would you like to celebrate next year for Bionorica's 90th anniversary? What will your message be to your team and those who made it all possible?

MP: Our concept is not about reflecting on these last 90 years. We must be fresh and young in our minds and actions, continually looking for new ideas. All the work and thinking of all the co-workers should be the same as when we started the company. Today, we adapt to digital operations and marketing. We strive to be competitive and, when possible, ahead of our competitors.

“ Celebrating 90 years means looking into the future, not to the past, proving we are updated and striving to improve our research. I celebrate our anniversaries scientifically, not historically. ”

Dr. Rüdiger Schulze

Vice President And General Manager
Ultragenyx, Germany



EF: If 2020 was the year of diagnostics and 2021 the year of vaccines, what do you think will be the key healthcare talking points for 2022?

RS: The war in Ukraine has precipitated a severe recession. The global compounded inflation is reaching a level we haven't seen in decades and becoming the most significant economic threat. There are exacerbated supply chain shortages in Europe and, particularly in Germany, energy shortages that are a danger to the very existence of many businesses. Our industry is affected by all the above.

EF: What are the lessons learned from the pandemic?

RS: The pandemic has given us lessons for the future. The speed with which vaccines were developed is a remarkable aspect, showcasing to the public the substantial and positive impact of the pharmaceutical industry. During the pandemic, I found it noteworthy how science, particularly virology, was suddenly the focus of public attention.

Like many other European countries, Germany has an aging population, particularly in rural areas, where young physicians want to live the least. Furthering the development of telemedicine will help to better address the medical needs of an aging population. From an industry perspective, the pharmaceutical field force was not allowed to visit physicians in hospitals, and virtual channels for interacting had to be developed. Despite face-to-face interaction will still play an important role, digital channels are here to stay. They will play a more important role than pre-2020, saving time and unnecessary greenhouse gas emissions. At a macro-socioeconomic level, we will need to evaluate the efficiency of the measures taken by the government in response to the pandemic. Money was spent, which is now debt and a burden to future generations. A fact-based conclusion would serve as a lesson for future pandemics.

EF: How do you see virtual interactions and physician education evolving in rare diseases?

RS: Virtual will certainly play an important role in educating physicians with the purpose of earlier diagnosis. According to the Alliance of patient organizations for rare diseases, ACHSE, it takes seven years for a rare disease patient to receive the correct diagnosis. In the case of even rarer diseases, it can take longer. These diseases are rare, and we cannot expect a pediatrician or general practitioner to be familiar with all thousands of rare diseases described in the scientific literature. Primary care physicians must recognize the signs and symptoms of rare diseases and should be encouraged to refer patients to a center for rare diseases in Germany. There are still several unmet medical needs in rare diseases for diagnosis and treatment. Online education and artificial intelligence will play a role in accelerating diagnosis. Many physicians are interested in the whole spectrum of rare diseases. A win-win scenario would be creating a joint effort between companies developing orphan drugs to deliver broader and more relevant medical information to a wider audience of healthcare providers. Communicating about multiple rare diseases will increase the relevance of the information for the recipient and reduce the cost for companies.

EF: How can we increase the importance of rare diseases and orphan drug awareness in Europe? How do you see the Draft Healthcare bill impacting?

RS: The current Bill is an effort to contain costs for statutory health insurance, and it will very likely reduce the attractiveness of the German pharmaceutical market for innovation in general. We have already seen the trend in Germany that more and more innovative medicines are pulled from the market and are no longer generally reimbursed.

The German healthcare system is one of the most expensive systems in the world without producing above-average results. There are healthcare systems that have equal results at a lower cost, such as Denmark. The underlying reasons must be analyzed. One of the most striking differences is that in Denmark, there are fewer hospital beds per capita than in Germany. The hospital sectors consume the most resources for statutory health insurance revenues. I would encourage healthcare policymakers to review the entire German healthcare system and address their structural problems: Are hospitals delivering the desired quality? Could interventions performed in hospitals in Germany, with equal quality, be done in an outpatient setting, thus optimizing resources? There is a need for restructuring and substantial reforms.

EF: Shifting to Talent Acquisition now. How do you attract the best and the brightest to the organization?

RS: Being a highly specialized organization that caters to small patient populations does not make it a challenge to hire the best. I have recently recruited for several vacant positions without using external service providers. A company with a future that develops innovation will always be considered an attractive workplace. It is always exciting to build something new. Ultragenyx is perceived as an attractive employer in the labor market, and we reinforce that by offering flexibility to our employees.

EF: What is the level of access to innovation in Germany compared to other markets?

RS: Historically, access to innovation has always been very good in Germany, mainly because new products are reimbursed before price negotiations with payers are concluded. A future scenario may be that Germany would not always be the first country to launch a new product in a European context. Germany is the biggest market within the EU, and a negative scenario has repercussions on the attractiveness of the EU overall as a pharmaceutical market for innovation.

EF: In 4 years from now, on your tenth anniversary, what would you like to celebrate?

RS: On our tenth anniversary, I would like to celebrate having made more innovative medicines accessible to rare disease patients. We have multiple drugs in development that address inherited errors of metabolism that have a high burden of disease and a severe impact on the patient's quality of life. We have a broad pipeline, which is remarkable for a company our age. I would like Ultragenyx to be widely recognized as an innovation leader in rare diseases and as a trustworthy partner for stakeholders in healthcare by taking care of patients.

Dr. Traugott Ullrich,

General Manager Germany
Schwabe Group



EF: What were the lessons learned during these last two years of the pandemic?

TU: Primarily, the fast digitalization of executing our business was key for business continuity. That encompassed the technological availability and people's willingness and capability to use it.

Secondly, our focus on employee safety and health safeguarded our supply chain and the unrestricted availability of our products in the marketplace. Right from the beginning, we implemented corporate PCR testing availabilities for our employees, and as soon as it became available, we built up a Corporate Vaccination Centre. In the out-phasing pandemic, we understand that despite all digital possibilities, personal contact and interaction produce a significant business uplift when working with our customers or collaborating within our corporate structures and processes.

EF: How did you ensure security supply?

TU: As a manufacturer of herbal medical products, the holistic control of each step and aspect not only of our production but also of our supply chain is key for producing outstanding product quality and consistency. At Schwabe, we have a deep understanding and a proven track record. Due to the nature of our active ingredients, we need to ensure a consistently high quality despite geographic variations, climatic changes, and logistic challenges. For this reason, *we decided to have full corporate coverage of the spectrum of the whole process from plantation to production, including harvesting, transportation, and intensive quality testing of the natural raw materials before they access our operations processes. Therefore, we were at all times – amidst the pandemic – self-reliant concerning our supply chain. We will follow this path even though this will become even more challenging and expensive under the actual circumstances and in a future perspective.* We will have to deal in this respect with further societal challenges like climate change, which will be even more important for the sustainable success of our business model. Our natural health solutions' target group cares increasingly about that aspect.

EF: Could you elaborate on the current footprint of the company?

TU: Even though we produce plant-based medicines, we have the same manufacturing frame and rules that are in place for producers of chemical APIs. Therefore, also we are emitting CO₂ in a relevant dimension. To improve, we first must have sufficient intelligence on our emissions. We are just now thoroughly analyzing our footprint while developing a concrete plan with defined milestones to reduce it until 2035.

EF: Could you elaborate on the extent of the operations of a business with 150 years of history and the reasons for this solid growth?

TU: Schwabe specializes in natural health solutions. Consumers and Patients seek efficacious remedies for everyday ailments with excellent

tolerability. Our offering fulfills that need. But *nowadays, conscious consumers do not only search for health solutions that are good for them but also for society and the environment. Our Health Solutions deliver that since they are produced sustainably from natural raw materials* and as a family-owned company, we also emphasize corporate social responsibility. Therefore, our Business Model also has excellent future perspectives.

EF: What are the products with the highest growth and performance in the company's portfolio?

TU: Whereas most companies in the natural health sector strongly focus on cough and cold as the largest OTC category, *Schwabe Group's most important field of interest and source of business are mental disorders such as cognitive impairment, anxiety, stress-related symptoms of depression focus on the treatment of diseases of deeper relevance such as mental disorders, anxiety, and depression.* This category is already a field of significant societal relevance. Due to the demographic development in industrialized countries, the increasing personal challenges due to a globalized and digitalized world, and also as an aftermath of the pandemic situation, their medical prevalence will even increase considerably. Being able to offer efficacious natural medicines with an excellent tolerability and safety profile creates a significant growth potential for Schwabe.

If we complement our outstanding knowledge of natural health products with excellent customer-centricity, we will be able to create a user experience with a sustainable competitive edge.

EF: Which areas in the pharmacological industry will grow the most with the help of digitalization?

TU: Digitalization will be a major driver for better adherence and compliance of patients taking medications or using other forms of treatment. Patients will be digitally enabled to monitor the therapy progress in real-time. That encourages people to stick with the therapy in a disciplined way.

Secondly, our communication with our customers- be it patients and Health Care Professionals will be more precisely targeted concerning content and channels used.

And by digital means, we will be able to develop new health solutions with a more customer-centric and faster outcome from people.

EF: Considering the last ten years of the company trajectory, what are your celebrations as CEO of Schwabe Group?

TU: Developing into a customer-centric thinking organization without giving up our ambition to produce and offer excellent natural health solutions is a challenging ambition. So far, we have walked this road with remarkable speed. Everyone in our organization can be proud of this.

Stefan Brinkmann

Chief Executive Officer
Merz Therapeutics



EF: 2020 was the year of diagnostics, 2021 the year of vaccines; what do you think 2022 will be the year of?

SB: *2022 will be the year of recovery and digitalization.* Non-acute and non-communicable diseases have moved out of focus which has posed challenges for our business. This came particularly in relation to global supply chain disruptions. Coupled with inflation and energy shortages, this affected our production, distribution, and operations. Despite these challenges, the pandemic served as an accelerator for digitalization which will last much longer than the challenges.

Digitalization has been integrated into the things we do on a day-to-day basis. It will be a major tool and a driving force for the entire healthcare ecosystem in the future. Initially, we used digitalization to open communication channels; now, we use it to create personalized healthcare.

EF: What lessons did you learn during the pandemic?

SB: Merz Therapeutics adapted to the pandemic quickly, as we already offered our employees the option of mobile working before it. We formed and implemented webinars, digital platforms, and classes, which boosted our digital footprint. Right now, *we are integrating analog and digital formats because face-to-face interaction is just as important as* virtual collaboration. We have all appreciated the flexibility and a healthy mix of online and on-site interactions. I am convinced that the hybrid model is the future.

EF: What was your given mission when you were appointed, and how has it evolved since 2020?

SB: Merz Therapeutics' mission is to bring better outcomes to more patients. It is our motivation and daily drive. *The most important aspect to remember when creating a new treatment is the patient's needs and quality of life. Our core product enables individualized treatment for each patient.* Engagement with all relevant stakeholders, from the patient to the doctor and the caregiver, is fundamental to providing high-quality services.

Working to deliver the best patient outcomes and being patient-centric in our decision-making strongly resonates with our employees. Digitalization is fundamental in creating more opportunities for meaningful communication with our stakeholders. That is why we are working extensively to increase our digital footprint.

EF: What skills are needed for the new generation of employees in the pharmaceutical industry?

SB: As we use digital tools and skills to expand our portfolio, we look for digitally literate and digitally enabled talents among pharmacists, doctors, biologists, and other experts. *Knowing and using digital tools is the future of the changing healthcare ecosystem.*

Merz Therapeutics is one of only a few experts in the market on botulinum neurotoxin from research, production, marketing, and sales. As a pharmaceutical company, our future is based on our R&D innovation and products, which is why we reinvest a significant amount of our revenue back into research.

EF: How can local production in Germany be improved, and what advice would you give to others looking to grow in this area?

SB: *We pride ourselves in being a local production champion and heavily invest in increasing our capacity for our neurotoxin production facilities.* One of the key requirements in local production is reliable reimbursement conditions. Germany passed a new law that lowered prices for pharmaceutical products, yet fixed reimbursement prices during inflation are one of the main issues to be resolved early. Reimbursement systems should increase prices on essential drug lists to make it easier to supply pharmaceuticals in the long run.

The healthcare industry is one of the major economic pillars of Germany. The government should support the industry with reliable frameworks to manage dependencies and attract investments. Creating the right conditions for investment, especially for German-based companies like Merz Therapeutics, is important. As a company, we contribute to securing Germany's position as an innovation hub.

EF: How are you driving innovation through partnerships?

SB: Merz Therapeutics has a very active business development, making us a global partner of choice. We are constantly looking for new partners to develop and commercialize new therapeutic opportunities with our neurotoxin and actively seek out opportunities in the market.

Recently, we embarked on a developmental partnership with Vensica to develop a new and less invasive treatment for overactive bladder. Together we will offer an innovative treatment option that directly delivers neurotoxins to an overactive bladder using an ultrasound-assisted catheter- a needle-free injection treatment that does not require anesthesia.

EF: What do you look for in a partner?

SB: This tends to be specific to what we are collaborating on. It is about entering a mutually beneficial partnership. We are engaged in development partnerships as well as in marketing and sales alliances to expand our footprint.

EF: What are the biggest advantages and challenges of producing in Germany?

SB: Supply chain management is a major topic right now. All the elements and ingredients must be in place to produce a pharmaceutical product. If a component is missing, production is impossible. Therefore, we are expanding our production footprint in Germany, ensuring several sources for each ingredient or element.

EF: How is Merz Therapeutics shaping the future of the innovative pharmaceutical sector in Germany and globally?

SB: We strive to become a global leader in specialty pharma by expanding our product portfolio beyond toxins. "Better outcomes for more patients" are the purpose and mission we work towards every day. At Merz Therapeutics, we focus on people. We are working together to address the unmet needs of those with chronic disease and improve their quality of life.

Dr. Oliver Scheel

CEO

apo.com Group



EF: What motivated you to join the apo.com Group, and what has been your proudest achievement so far?

OS: As a biochemist and an international pharmaceutical healthcare expert with over 30 years of experience in the industry, I have occupied different positions over the years in different parts of the value chain. Being appointed as the CEO of apo.com Group was an exciting opportunity for me, as I would be leading a company and actively advancing digital health with tangible assets rather than a startup with solely a conceptual idea and an application.

I have gained a deep understanding of how e-commerce works and my quest to innovate it for breakthroughs in health has been a steep learning curve for me. apo.com Group comprises over 350 employees generating revenue of approximately 300 million Euro yearly. It is a highly agile organization, allowing us to shape and refine the company's structure daily.

The soft start of e-prescriptions in 2021/22 is starting to open up a significant part of the Rx market in Germany to online /digital pharmacy business. The addressable market is growing from €10-15 billion (OTC/BPC markets plus 2% of the current paper-Rx market) today to €50-60 billion (OTC/ BPC plus a major share of the full Rx market) and would allow the innovative online pharmacies to generate an unprecedented increase in revenue while simultaneously innovating the entire pharmaceuticals distribution landscape by introducing new services and demonstrating a modern pharmacy concept.

There is vast potential for innovation in e-commerce and online marketing through artificial intelligence in content creation, service scalability, and logistical material flow management. Such innovation requires conceptual, creative, and inspirational capabilities to motivate and guide the respective online pharmacy teams. It also necessitates strong employer branding efforts to attract the right individuals, as the right team can make all the difference. We must introduce positive disruption through innovation to assist society in achieving a continuously leading and affordable healthcare environment in Germany. Our market share and consumer satisfaction prove our trending success in this regard.

EF: How are you leveraging digital tools and technology to drive progress within your organization?

OS: The foundation of our business model involves combining a traditional online shop with reliable logistics. Given that logistics is an asset-intensive industry, scaling requires access to a diverse range of assets, products, and dependable suppliers, as well as a significant financial investment for purchasing products to sell. Scaling may only be feasible for some pharmacies due to these requirements. Establishing modern market tiers for products and services that extend beyond performance marketing is important. While performance marketing is now commonplace, service marketing, fast-moving consumer goods marketing, branding, and pharma marketing are also critical components, focusing on improving quality of life outcomes and passing these benefits onto our customers.

During my tenure at apo.com Group, we have been focused on developing a business model that surpasses that of other online and brick-and-mortar pharmacies. We are about to achieve this by investing in various elements such as modern business intelligence techniques, artificial intelligence, databases, and content creators. Understanding our customers has allowed us to address their concerns and meet their expectations more effectively. As a result, we have garnered over 4,000,000 active customers who place orders frequently, helping us to grow

continuously and increase all our core business KPIs since 2021. We gain thereby insight into people's daily lives, their health needs, and the daily problems they encounter.

The launch of the new e-prescription-driven business unit is our gateway to the €50-60+ billion-euro market that caters to chronically ill patients. It is important to note that in Germany, there are 83 million inhabitants, and 33 million of them are considered chronically ill. Specifically, at least 8.5 million people have diabetes, and 5.6 million patients suffer from heart disease, high blood pressure, and hypertension. These figures help us to understand the market and to offer the quality of life improving services as a pharmaceutical company.

We also established a new team in our prescription business, patient engagement managers, who concentrate on specific indications. Every quarter, these managers spend time and work together with patients and physician organizations focused on those indications to improve the quality of our services.

The German pharma healthcare market environment industry is still an attractive investment destination due to its strong infrastructure and skilled workforce. However, we need new legal approaches to scale up operations. Countries like the Netherlands have shown that this is possible by applying the European law that enables the ownership of an unlimited number of pharmacies by a capital company as a legal entity type.

EF: What is the importance of innovation for the German market?

OS: As a healthcare professional with 30 years of experience, I am a firm believer in driving innovation forward, and I know there are companies and investors with the resources, intelligence, and passion needed to make it happen. However, we also require policymakers to create the right environment and incentives to embed innovation in the industry.

Although online pharmacies offer innovation potential, it is important to recognize that their business model extends beyond simply shipping packages and competing on pricing through basic logistics, performance marketing, and IT proficiency. At apo.com Group, we want to be a fundamental element in covering the entire product and service value chain. My ultimate goal is to take our patient service to the next level by utilizing patient access to provide not only package shipments but also pharmaceutical and telemedical services that analyze and anticipate patient needs.

We aim to enhance our service design through data intelligence. By gaining real-time insight into our customers' actual and potential needs, we can offer more efficient advice and support for the entire family ecosystem.

Drug safety is of utmost importance for patients in medication handling and potential adverse effects. Ensuring drug safety is a critical consideration for us, given that highly trained individuals with access to the best databases in the world maintain our databases and AI knowledge. *Our logistics also feature automated quality control measures, which enables us to offer systematically further improved levels of drug safety than traditional brick-and-mortar pharmacies. In this regard, Germany has the potential to be more innovative and forward-thinking.*

As a pharma/ HealthTech company, our goal is to contribute our skills and knowledge to ensure that therapies are more successful and that there are higher safety and better measurable outcomes, pushing the benefits for society and the overall cost efficiency of the healthcare system.

Annegret Wittich – Hoeffler

General Manager Germany
Galderma Laboratorium GmbH



EF: You joined the Galderma team in January; what appealed to you about this company that motivated you to become a part of it?

AW: Thanks to my previous experience in the dermatology area and the immense development inside this organization and in the market, I was sure that this company was the perfect fit for me. *The mission, vision, and potential of Galderma are unique compared to other enterprises in the marketplace, and for this reason, I decided to team up with it.* With the continuous new projects and innovations, like the numerous synergies from which we are exploiting, its vast spectrum and pipeline with aesthetics, prescriptions, and derma cosmetics, *this company seeks to become the worldwide leader in dermatology.*

EF: Are there any new products you are excited about to launch into the market any time soon?

AW: In fact, there are multiple innovations coming our way. *The pipeline will benefit and have a great impact on the entire sectors of the business and the whole company.* Galderma is planning to launch every year transformative and pioneering products in the market.

EF: In this post-pandemical world, do you perceive any growing tendencies in the way people perceive on appearing and self-care?

AW: Prior to the pandemic, people took a lot of things for granted, but with the restrictions affecting the logistic services and our supply chains, people became aware of the possible disruptions and limitations of the system. *On the other hand, an immense advance that the pandemic brought to the healthcare systems was the development of telemedicine.* It is the greatest achievement from the pandemic stage because it makes possible easier access of patients to our services. This new connection and approach with patients were some examples of the positive effects of the pandemic.

EF: Before joining Galderma, you worked a lot on digitalization resources, and I would like to know if you are driving some initiatives within the company nowadays.

AW: From the company's point of view, it is vital to provide a premium customer experience, and my role in Galderma is to follow this goal and provide valuable resources for customers. The services we provide, besides the high quality of the products depend on digitalization and the advantage this brings to the company. *Galderma provides content and patient education, and treatment satisfaction in the easiest possible way through different platforms and channels according to the needs of each consumer individually.*

EF: We touched on Galderma being a physician-centric company, but are there any measures to focus the company's attention on the patient?

AW: As a pharmaceutical company we have the purpose of curing and preventing diseases. We support this mission by, e.g., involving patients in our sales conferences. Hearing their stories on what an impact the condition has on patient's lives and the immense relief and improvement in quality of life we can bring with our products creates a strong motivator for the salesforce. *Galderma strives to create positive environments and to have a significant impact on improving patients' quality of life.*

EF: It is enriching to hear about all the personnel of Galderma being involved and emphasizing so much the importance of patient centricity. This mission needs to be engaged and promoted throughout the company; how do you manage to achieve this?

AW: *Galderma is driven by our purpose.* We want everyone to feel proud of the company they are part of and the impact we are having on patients and customers.

EF: Are there any growth opportunities, specifically, that you see at this moment for Galderma?

AW: There are many opportunities: in the existing portfolio, *with line extensions and innovations across all areas of the business.*

EF: Coming back to the key aspects of healthcare working teams and regarding the initiatives of digitalization, do you consider that the skill set of potential workers is changing?

AW: Actually, for our company, the skill set of prospective employees has changed deeply. *We seek personnel with a Can Do attitude and a strong, positive personality.* We seek purpose with this special mindset, willing to provide innovation to consumers and patients. Within our teams, you will find true fans of our products/ brands and they act like brand ambassadors every day. *Intrinsic motivation is what we look for in prospective workers.*

EF: Knowing that you are going to accomplish one year in Galderma, what would be your celebration speech to your colleagues?

AW: I will thank them for all their achievements during this year. Each member of our team showed true grit, resilience and kept the spirit of the whole company up. *We managed to gain positive outlooks despite working on new and challenging initiatives and projects. I do embrace mistakes because having a pioneer mindset means failing sometimes, but it also means that something new is being attempted and may result in amazing outcomes and true leapfrog moments. To be brave and dare to try new things and have this winning mindset will lead Galderma to the future.*

Chapter 4

Healthcare infrastructure

“We will soon be dealing with more climate change-associated illnesses, what with globalization, Covid, and even tropical diseases in Europe, which will change the need for medical treatment in hospitals.” Dr. Marc Schreiner, Berlin Hospital Association

Germany's commitment to fast-track sustainable facilities to guarantee an integral Healthcare infrastructure for the needs of tomorrow.

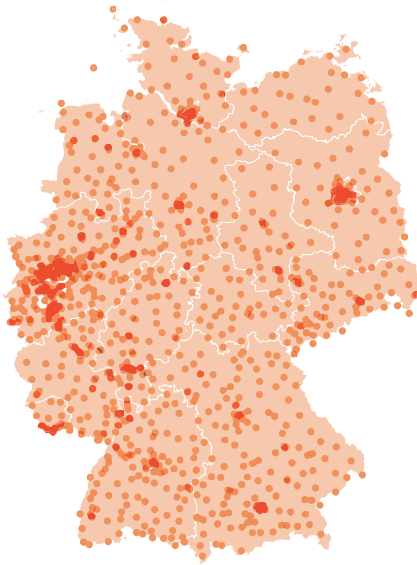
A Glimpse of the Infrastructure

According to the German Federal Statistics Office, Germany's healthcare infrastructure encompasses 1887 hospitals with a total of 483,606 available beds. In the year 2021, these facilities were attending 16.7 million patients per year at an average of 68.2% of bed occupancy. The total cost of this hospital infrastructure rounds around an annual amount of € 126.9.¹

Compared to the European average of 5 hospital beds for 1000 population, Germany's doubles this number to 8. This makes Germany the European nation with the highest number of beds available, even though the country has been reducing capacities over the last two decades.²

The data provided shows interesting trends in the German healthcare system from 1991 to 2021. There is a clear decline in the number of hospitals and the total number of beds provided over this time period. Specifically, the number of hospitals decreased from 2,411 in 1991 to 1,887 in 2021, and the number of beds fell from 665,565 to 483,606 over the same period. However, this decrease in hospitals and beds didn't lead to reduced healthcare services. Instead, the system became more efficient.

Hospital Density in Germany



https://www.blickpunkt-klinik.de/grafiken_klinikstrukturen.html

Medical facilities, hospital beds and movement of patient

Year	Hospitals		Movement of patient			
	total	beds provided	number of cases	occupancy and billing days	average	
	number	number	number	1 000	length of stay days	bed occupancy rate %
1991	2,411	665,565	14,576,613	204,204	14.0	84.1
1992	2,381	646,995	14,974,845	198,769	13.2	83.9
1993	2,354	628,658	15,191,174	190,741	12.5	83.1
1994	2,337	618,176	15,497,702	186,049	11.9	82.5
1995	2,325	609,123	15,931,168	182,627	11.4	82.1
1996	2,269	593,743	16,165,019	175,247	10.8	80.6
1997	2,258	580,425	16,429,031	171,837	10.4	81.1
1998	2,263	571,629	16,847,477	171,802	10.1	82.3
1999	2,252	565,268	17,092,707	169,696	9.9	82.2
2000	2,242	559,651	17,262,929	167,789	9.7	81.9
2001	2,240	552,680	17,325,083	163,536	9.4	81.1
2002	2,221	547,284	17,432,272	159,937	9.2	80.1
2003	2,197	541,901	17,295,910	153,518	8.9	77.6
2004	2,166	531,333	16,801,649	146,746	8.7	75.5
2005	2,139	523,824	16,539,398	143,244	8.7	74.9
2006	2,104	510,767	16,832,883	142,251	8.5	76.3
2007	2,087	506,954	17,178,573	142,893	8.3	77.2
2008	2,083	503,360	17,519,579	142,535	8.1	77.4
2009	2,084	503,341	17,817,180	142,414	8.0	77.5
2010	2,064	502,749	18,032,903	141,942	7.9	77.4
2011	2,045	502,029	18,344,156	141,676	7.7	77.3
2012	2,017	501,475	18,620,442	142,024	7.6	77.4
2013	1,996	500,671	18,787,168	141,340	7.5	77.3
2014	1,980	500,680	19,148,626	141,534	7.4	77.4
2015	1,956	499,351	19,239,574	141,281	7.3	77.5
2016	1,951	498,718	19,532,779	142,170	7.3	77.9
2017	1,942	497,182	19,442,810	141,152	7.3	77.8
2018	1,925	498,192	19,392,466	140,225	7.2	77.1
2019	1,914	494,326	19,415,555	139,268	7.2	77.2
2020	1,903	487,783	16,793,962	120,202	7.2	67.3
2021	1,887	483,606	16,742,344	120,421	7.2	68.2

<https://www.destatis.de/EN/Themes/Society-Environment/Health/Hospitals/Tables/gd-hospitals-years.html>

Simultaneously, the data demonstrates that the movement of patients, as denoted by the number of cases, has steadily increased over the years, even as the total number of hospitals and hospital beds decreased. This indicates an increase in the efficiency and turnover of patients within the system. In 1991, the total number of cases was approximately 14.5 million, and this increased to 16.7 million in 2021. This uptick happened despite fewer hospitals and beds available, showing a significant enhancement in throughput.

Notably, the average length of stay in hospitals has also been decreasing over the same period, from 14.0 days in 1991 to 7.2 days in 2021. This decrease indicates improvements in treatment procedures, care coordination, and discharge planning, leading to more efficient use of hospital resources.

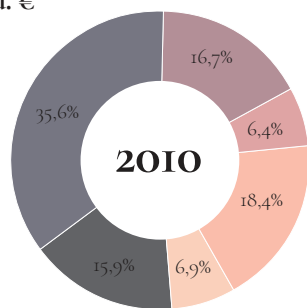
¹ https://www.destatis.de/EN/Themes/Society-Environment/Health/Hospitals/_node.html

² https://health.ec.europa.eu/system/files/2022-12/2022_healthatglance_rep_en_o.pdf

Expenses in Services by SHI (statutory health insurances): 164,96 Mrd. €

thereof:
Hospital Care

35,6 %
(58,73 bn €)



Another key metric is the bed occupancy rate, which has also seen a decline. From an occupancy rate of 84.1% in 1991, it decreased to 68.2% in 2021. This might seem counterintuitive, given the rising number of patients treated. However, this is likely due to the faster turnaround times and shorter stays, leading to more efficient usage of beds and allowing for more patients to be treated with the same or fewer resources.

In summary, these trends reflect a trend of increased efficiency and throughput in the German healthcare system. Despite reductions in the number of hospitals and beds, the system has been able to treat a higher number of patients more quickly and effectively. This has likely been achieved through improvements in medical technologies, healthcare protocols, and administrative efficiencies, among other factors. Regarding the workforce, 20% of the 5.65 million people employed in the health sector work in hospitals. Nevertheless, the sector is facing a challenging shortage of nurses and medical professionals. To ensure quality care, in 2021, the Health Ministry regulated the floor staff for nursing beds according to different hospital areas. With still an average responsibility for over ten patients, Germany's nursing staff exigency lies high above the demand in comparison to countries like the Netherlands (6.9 patients per nurse) or the USA (5.3).³ These exigency levels, combined with insufficient compensation and unattractive working hours, have caused the decline of apprentices in the industry.

As for financing, since 1972, a dual system shares the hospital costs between the insurance sector and the federal government.

The statutory insurance funds carry the operating cost of hospitals in Germany, while investment costs are paid by the federal state responsible.

Despite being legally obligated to finance investment in the hospital sector, federal subsidies have been decreasing over the years. While in 1972, the investment percentage for hospitals still represented 25% of the total investment quote, in 2020, this number dropped to 3%.

Although investments vary according to each state's liquidity and population density, the German Health Ministry indicates that, while in 1993, the states still paid 3.9 billion euros for hospital investment, in 2020, this figure has reduced to 3.3 billion euros. At the same time, hospital spending by health insurers rose from 29 billion euros to 81.5 billion euros.

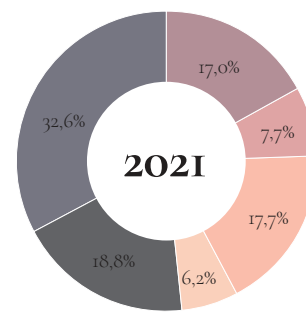
To manage their operational costs, hospitals use a so-called "Fall-

Expenses in Services by SHI 263,41 bn €

thereof:
Hospital Care

32,6 %
(85,87 bn €)

- Hospital Care
- Medical Attention
- Aids and appliances
- Pharmaceuticals
- Dental Care
- Other Services



pauschale"-or case-based flat-rate - attributing estimated expenses based on a DRG- System (Diagnosis-related Groups). The flat rate per case is used to calculate the remuneration for a defined illness and its treatment (excluding the nursing staff costs incurred at the bedside) within a certain range of the length of stay. Within this range, the same flat rate is paid regardless of the actual length of stay.

Regarding this system in relation to current events, **Dr. Marc Schreiner** from the Berlin Hospital Association observes. "We are battling inflation of about 8%, and the hospitals don't have a flexible remuneration system; we have only been allowed a cost raise of 4.3%. The gap between cost and the increase is getting bigger, and this is just the symptom of the structural underfinancing of the hospital's running costs. The German DRG system no longer covers all the costs, endangering our healthcare system."



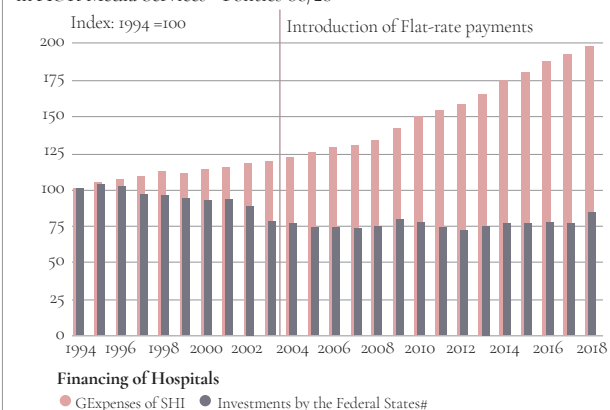
Hospitals need smarter funding to promote innovation and raise infrastructure to new digital, environmentally friendly, sustainable standards that can also decompress the exigency of the workforce. On the operational side, hospitals require better and more efficient cost management to relieve the burden of health insurers and patients in the long run.

During this running year, under the leadership of **Prof. Dr. Karl Lauterbach**, the Ministry of Health has presented a hospital reform plan, which is now under revision for approval.



Hospital Financing from 1994 to 2018

in AOK Media Services - Politics 06/20



(https://www.aok-bv.de/imperia/md/aokbv/presse/bilderservice/krankenhaus/ams_grafik_0620_g.jpg)

The draft of the Hospital Reform foresees reclassifying hospitals and clinics into levels of care, from basic medical attention to highly specialized treatment, based on the specialty of services provided. While Level I hospitals shall offer care close to patients' homes throughout the country, specialized care will be concentrated in highly qualified centers regrouping expenses and putting the focus on patient-quality treatment.

Screening the voices present in Germany's healthcare and political landscape addressing the reform debate shows the complexity of the venture.



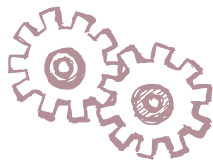
Re-thinking structures

"Increasingly tough requirements for healthcare, exacerbated by a spiraling shortage of skilled workers, cannot be dealt with solely through hiring and employee retention strategies. - Preventing disease will be essential, with a new macrosocial focus on prevention and keeping people healthy in all areas. At the same time, we need to harness technological and digital innovation and channel these advances toward developing new ways of working in healthcare and innovative training programs for future healthcare workers. Changes in compensation systems, new coverage networks for urban and rural areas, telemedicine approaches, and access to and sharing of medical data in the European healthcare space are also important tools that we and our European partners need to bring forward." **Prof. Dr. Heyo K. Kroemer**, CEO of Charité



Ensuring rural areas and downsizing the inpatient sector

"It is inevitable that some hospitals will be closed or converted to outpatient clinics. By converting some rural clinics into outpatient hospitals, rural health care could be ensured. The key is to downsize the inpatient sector and ramp up the outpatient sector. However, this requires specially equipped outpatient clinics that are linked to inpatient hospitals." **Kai Hankeln**, CEO Asklepios Kliniken.

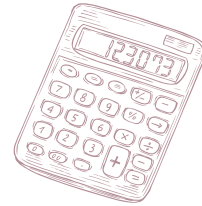


Improved working conditions and outpatient services

"Working conditions in the health care system must be drastically improved, and non-physician professional groups must be given more

responsibility. The outpatient and inpatient sectors must be better networked at the regional level and, in the future, planned and remunerated jointly. As far as hospital locations are concerned, we must achieve more centralization, not primarily for financial reasons but for reasons of quality of care.

"We must provide more services on an outpatient basis and promote interprofessional services, for example, in primary care centers. To achieve this, we need substantial reforms that regulate the binding networking of medical, nursing, and therapeutic services and realign the tasks of the various healthcare professions." **Dr. Kirsten Kappert-Gonther**, Green Party, Health Committee Deputy.



New budget proposals for basic funding

"The main goal of the reform is getting hospitals out of their hamster-wheel. Due to the flat-rate financing system, many hospitals saw themselves compelled to treat many patients in short timeframes to improve the income situation of the facility. This needs to change. According to the reform plan, the Hospital shall receive basic financing on a contingency budget. The first step in this direction was establishing a separate nursing allocation. The next move should be raising the contingency budget that serves as base funding and reducing the calculations made on the DRG system to a minimum." **Heike Baehrens**, SPD, Health policy spokeswoman.



Need for federal involvement

"The reorganization of the German hospital landscape will only succeed in close exchange with the federal states. It is obvious that this exchange must also lead to a significantly greater willingness on the part of the states to pay for investment costs." **Tino Sorge**, CDU/CSU Health policy spokesman.

A last optimistic prediction of the health minister before the beginning of the 2023 summer break was an expected introduction of the reform in January 2024 – now that after weeks of intensive discussion with a joint state and federal task force has seemed to have reached an agreement on the key points of the reform.

Digitizing Infrastructure

“German hospitals are not among the best-digitalized institutions. We need to invest,” states Dr. Marc Schreiner from the Berlin Hospital Association, addressing the need to push Germany’s digital infrastructure in the healthcare sector.

In the European comparison of the digital economy and society in 2022, Germany ranks 13th behind France, Slovenia, and Austria, while Scandinavian countries like Finland and Denmark take the lead. The European Commission publishes the Digital Economy and Society Index (DESI) annually to track the progress of member states in the five key areas of connectivity, digital skills, Internet use by private individuals, integration of digital technology by companies, and digital public services. However, Germany is still not reaching the level of digital adoption it wishes to have. Especially in the health sector, there is still room for improvement regarding digital transformation, an issue that government and health stakeholders are eager to resolve.

In 2021 the Federal Social Security Office (Bundesamt für Soziale Sicherung), in cooperation with the Health Ministry, set up a Hospital Future Fund (KHZF), thus amounts to up to EUR 4.3 billion. The funding is destined for investments in modern emergency capacities and improved digital infrastructure, e.g., patient portals, electronic documentation of care and treatment services, digital medication management, IT security measures, and cross-sector telemedicine network structures.

For the capital state Berlin, this means an investment of around 220 million Euros specifically for digitalization measures. Financing is, however, just the beginning of setting a new digital frame; Dr. **Marc Schreiner** knows that along with software innovation, the need for IT specialists in the healthcare field is also growing.



“We aim to make the investment sustainable in the permanent renewal of hardware and software, the renewal of licenses, and necessary purchasing to maintain the higher complexity of the digitalization level. We have a great challenge ahead; without IT specialists, a hospital can come to a standstill. As a hospital association, we must ensure that hospitals have access to skilled IT workers.” The Association is aware that building a digitally prepared workforce requires proactive measures that will help shape the skillset of tomorrow. “I am proud that the Berlin Hospital Association can offer, in collaboration with a university in Berlin, an IT course specialized in hospital work with a curriculum that encompasses hospital management needs and IT. We hopefully will launch the course next year and have new specialists after a few years. *Finally, working with the Chambers of Commerce, we are implementing special education programs for IT administration workers, looking at special education for the needs of hospitals.*”

As part of the digital strategy, the Ministry of Health appointed the now state-owned agency Gematik to integrally digitalize the German Healthcare system. Telematik is this agency’s infrastructure proposal to connect hospitals, medical offices, and pharmacies through a unified system. “Gematik has played a crucial role in assisting hospitals to avoid the expenditure of funds on inappropriate commercial offers. Given the fragmented nature of having 1900 hospitals in Germany, each with its unique software systems, hospital systems needed to adjust gradually to this connectivity. Gematik offers standardized programming soft-

ware that fosters interoperability and connectivity, allowing for structured data to link various stakeholders and enhance patient-centered care, resulting in earlier diagnoses and better financial stability for payers.” **Dr. Markus Leyck Dieken** – General Manager, Gematik



When it comes to shifting pharmacies online, Dr. Oliver Sheel from Apo.com Group shares: “There is vast potential for innovation in e-commerce and online marketing through artificial intelligence in content creation, service scalability, and logistical material flow management.” Dr. Sheel is advancing in the experience patients have when they need to get their medicines, and he believes that going online is the future and that there are plenty of opportunities to improve the relationship pharmacies and e-pharmacies have today with patients.

Turning the health system in Germany is a main concern of the Ministry of Health and all stakeholders in the field. This tendency has led to a positive evolution of telemedicine, thanks to regulation barriers being removed- The German government introduced e-health, which includes telemedicine, and abolished the 30% rule that previously limited doctors to spending only 30% of their cases on telemedicine. The removal of the 30% rule will attract telemedicine companies back to Germany, allowing for state-of-the-art healthcare delivery, particularly in remote areas. Traditional face-to-face doctors must also adapt to the telemedicine model, and companies specialized in telemedicine can provide training to obtain as much patient information as possible. - as **Dr. Leyck Dieken** explains, while another significant advancement has been made with the implementation of electronic patient records. “Electronic health records will be mandatory with an opt-out option. By the end of 2025, 80% of Germans are expected to use electronic health records, which is critical for effective data collection.”

Ensuring the safety of all data involved and addressing the related concerns is a crucial aspect of digitally transforming Germany’s Health system.

“Today’s technological possibilities are enormous, and we believe there should be a way to find a middle ground to ensure data privacy and protection while taking advantage of the technology to provide a better patient outcome. I believe the current strict implementation of data privacy regulations is affecting patient safety in Germany; we could be safer, and it would be to the patient’s advantage to use more technological solutions. We need to promote technical advantages and convince society and politics so the patients can benefit.” **Dr. Christian Hauer**, Executive Board Member and President, Fresenius Kabi MedTech,



“Germany is renowned for its excellent resources, research institutions, and population capabilities. However, all that talent becomes pointless without data openness and a drive toward innovation.” **Dr. Markus Leyck Dieken**

Hospital sustainability

Under the Climate Action Program 2030 and the new Climate Action Act (Klimaschutzgesetz), the German government has made a binding undertaking to reduce greenhouse gas emissions by 55 percent by 2030.

This commitment will impact the health sector, especially in the areas of hospital sustainability.



“Hospitals are big resource consumers; they work around the clock, and the carbon emissions are enormous -5% of CO₂ emission in Germany is related to hospital activity”, explains **Dr. Marc Schreiner** on this matter. “Working with German experts, the Berlin Hospital Association created a master plan and raised funds with the regional government for the first million euros to analyze Berlin hospitals concerning the consumption of resources and emissions before deciding how to move forward. The Berlin administration is employing extra staff and investing an initial 30 million euros in creating a hospital’s climate protection cover capacity.”

The Berlin initiative serves as an example for other hospitals in the country. General measures applied relate to boosting the energy efficiency of hospitals, investing in renewable energy, and changing the food supply system to local providers.

Moreover, Schreiner mentions the field of mobility, where besides shifting their own hospital fleets to more environment-friendly vehicles, employees can also be motivated to switch to more ecological options like bicycles or public transport, providing the right incentives.

Improvements are made in water and waste management, seeking to reduce single-use items.

A very critical point of hospital emissions is narcotic gases used in anesthesia. A gas like desflurane is 2500 times more warming than CO₂. Therefore, an hour of surgery under the use of this particular narcotic is equivalent to 30-60 kg of carbon dioxide, which represents about 200-400 km of driving a car.

Hospitals are regulating the use of high-impact gases, exploring alternatives, improving doses, and ventilation and recycling systems.

From banning single-use plastic cups in the cafeteria to the use of high-efficiency MedTech devices, hospitals can reduce their environmental impact step by step. Berlin is already proud of its two climate-friendly hospitals, Martin Luther Hospital and Havelhöhe, and is committed to the climate protection strategy.

“Every hospital employee can achieve low hurdle measures in a normal working day. We can save energy and resources, avoid wasteful consumption, lower our emissions, and share these good energy-saving examples with other hospitals in other federal states; we can all learn from each other.” **Dr. Marc Schreiner.**



The importance of Collaboration

Healthcare deliverability is a joint effort. While hospitals present the point of contact, many partners are present behind the scenes. Process optimization, streamlining workflows, assistance in diagnostics, and other time and effort-saving solutions take service, treatment, and general management to new efficiency and quality levels.

IT agencies like Gematik are committed to connecting the healthcare sector's digital infrastructure nationwide, amplifying their solutions to the broader front of the healthcare system. MedTech companies provide innovative tools to raise quality, ease the work burden and facilitate new treatment and research options.

"Many of our products were initially designed for single and double-doctor practices, as tracking a doctor's prescriptions in a small clinic is easier than in a large hospital. However, now, with the German Hospital Association as a shareholder, hospitals and multiple-doctor practices are gaining more attention. For hospital software systems, interoperability plays a crucial role. Gematik's objective is to integrate physician-based and



software-based solutions to address this challenge." **Dr. Markus Leyck Dieken**

Other companies like Fresenius Kabi are aligned with this mission.

"We support our customers in the clinical outcome, improving patients' safety and making the process of our customers more efficient. We invest in software solutions to connect to hospital electronic medical records, to be paperless, and have easy access to their system, leading to a fully web-based architecture; data can be wirelessly and bi-directionally downloaded to the infusion pumps. Our technology is efficient and easy for nurses to use to save precious time. We pay attention to the nurses', pharmacists', and physicians' work and mirror that as efficient-



ly as possible in our workflow support of our product software." **Dr. Christian Hauer**, Executive Board Member and President, Fresenius Kabi MedTech,

"We partner with our customers at each step and facilitate cross-collaboration.

In Germany, we have a large network of partners we collaborate with, including research organizations, large-scale biopharma and biotech customers, and industry associations. We are supporting life science research that directly influences



diagnostics." **Claudia Dierig**, VP / Managing Director, Thermo Fisher Scientific Germany



Investing in Life: How Companies are Shaping the Future of Healthcare



Investing in Health

“In recent years, Bayer has invested more than seven billion USD in biotech acquisitions and managed 60 strategic and ongoing alliances.

Between 2019 and 2021, for example, Bayer acquired companies including BlueRock Therapeutics, Asklepios Biopharmaceutical (Ask-Bio), and Vividion Therapeutics. These companies share our vision to leverage new technologies and develop urgently needed therapies for patients by embracing breakthrough innovation. Vividion, for example, boasts a breakthrough chemo proteomics platform that enables Bayer to expand its own drug discovery capabilities and unlock traditionally undruggable targets of the human proteome. BlueRock,



meanwhile, is a pioneer in stem cell engineered cell therapy, which is advancing its pipeline of therapies for treating patients with neurological, immunological, cardiovascular, and ophthalmic diseases, including Parkinson’s Disease.” **Dr. Daniel Steiners**, SVP, and General Manager, Bayer Pharmaceuticals Germany



Pushing sustainable growth through access and innovation

“We have made a global commitment; we are going to impact 2.5 billion lives across the world over the next ten years. And through doing that, we are going to drive a step up in the topline sales growth of 5%. My mission at GSK Germany is to take a well-performing business and look at ways to accelerate growth and



make Germany a powerhouse in the overall growth of GSK. I believe the focus is on bringing innovative medicines and vaccines to patients across Germany and making sure the right patients have access to our medicines and vaccines as quickly as possible.” **Victoria Williams**, General Manager Germany, GSK

Sustainable growth is achieved by how resources within the organization are being used, and having external stakeholders validate creates trust. “Ferrer was certified as a B Corp worldwide, making it the first of its kind and ranking it among the top 25% B Corp-certified companies in the world, with an impressive score. This accomplishment indicates the company’s genuine commitment to supporting sustainability initiatives and positively impacting society”, Dr. Amina Elsner, Ferrer



Bringing Access to Rare Diseases & unmet Needs

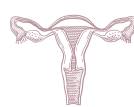
“Patients with rare diseases still have high unmet needs, and it is our objective at Ultragenyx to address those needs in severe genetic diseases. (...)

Online education and artificial intelligence will play a role in ac-

celerating diagnosis. A win-win scenario would be creating a joint effort between companies developing orphan drugs to deliver broader and more relevant medical information to a wider audience of healthcare providers. Communicating about multiple rare diseases will increase the relevance of the information for the recipient and reduce the cost for companies.” **Dr. Rüdiger Schulze** – Vice President and General Manager, Germany and Central / Eastern Europe at Ultragenyx Pharmaceutical Inc.



In Ferrer, they are collaborating with the Swiss clinical-stage biotechnology company Asceneuron to develop specialized treatments for patients with progressive supranuclear palsy (PSP), a rare and debilitating neurological condition. “Developing treatments for rare diseases requires a highly specialized and complex process, particularly in diagnostics and therapies. Despite the challenges posed by regulatory and political transitions in Germany, Ferrer is dedicated to pushing the boundaries of medical research to bring transformative solutions to patients,” Dr. Amina Elsner, their General Manager in Germany, shared with Executive Forecast.



Promoting Women’s Health

“Women’s health needs to be understood as a general and accepted important field as well as a missed out and neglected market and healthcare segment. Up to now, women’s health has been seen as an individual woman’s problem, or even worse; it has been seen as normal. I always say that if men had endometriosis, we would have the best drugs as generic. Women’s Health needs to get the visibility that it really deserves and be understood as an important field, leaving aside the stigma around many women’s health conditions. Very often, it’s been dismissed, ignored, normalized, and marginalized - this needs to stop.

What Organon has been doing since the beginning is listening to women’s needs all around the globe, what they are looking for in healthcare, and what they are missing. This guided our pipeline build-up.” **Christoph Habereeder**, Managing Director, D-A-CH Cluster, Organon



Investing in sustainable plant-based Pharma

“As we managed to conduct research, get results, and publish the information, today it is possible to demonstrate the value of our products and convince anybody worldwide of their worth.

We are a plant-based medicine company, and nature matters to the younger generation. How to contribute to society and influence the future positively are issues that matter when taking a position in a company.” **Professor Dr. Michael Popp** – BIONORICA, Germany



Marc Schreiner

Managing Director
Berlin Hospital Association, Germany



EF: You have been reelected for another five years as head of the Berlin Hospital Association, indicating you are doing things right. What are your biggest achievements and mission for the next period?

MS: One of the achievements is that we have repositioned the Berlin Hospital Federation as a relevant actor in the healthcare sector. Despite the Covid pandemic's challenges over the last three years, we have proved we are crisis managers, guiding hospitals and problem-solving, helping us shape our profile back to its original level. We serve the public by providing information; we have an audience on all relevant media where we deliver factual information to the people of Berlin and all interested parties. Besides crisis management, we raise funding for hospitals; in Germany, hospitals have a legal claim to grants from the regional governments for investment funding. How much funding is granted is a political decision, and over the five years I have been CEO, we have organized three demonstrations gathering several thousand people demanding for rights and claims of the hospitals. Hospitals are now partners at a regional level, providing many activities. We have also created campaigns. Three years ago, our first campaign was for more nurses and more and better care in the city. Based on a scientific study of 2019 on the healthcare workforce till 2030, only in Berlin are ten thousand full-time working nurses needed. We have created a master plan to match this need. We employed extra staff to run this campaign and develop full public awareness through media: websites, blogs, and podcasts. We are starting another campaign for climate protection in and by hospitals. We know hospitals are big resource consumers; they work around the clock, and the carbon emissions are enormous – 5% of CO₂ emission in Germany is related to hospital activity. Working with German experts, we again created a master plan and raised funds with the regional government for the first million euros to analyze Berlin hospitals concerning the consumption of resources and emissions before deciding how to move forward. We are setting our agenda with relevant topics other than acting and reacting in crisis and politics. We have persuaded the government and the administration to go along with our climate strategy. The Berlin administration is employing extra staff and investing an initial 30 million euros in creating a hospital's climate protection cover capacity.

EF: What are the main strategic points you want to focus on next?

MS: I already mentioned two of our priorities, the campaign for workforce and nurses and climate protection in and by hospitals. We will soon be dealing with more climate change-associated illnesses, what with globalization, Covid, and even tropical diseases in Europe, which will change the need for medical treatment in hospitals. More severe conditions will arise, particularly in big cities, because of air ventilation. In the summertime, with 35°C, a heat-reaction plan is necessary. We have already started creating a plan for this, e.g., guiding hospitals on how to cool down patients' rooms.

A third big topic is the digitalization of German hospitals, which are not among the best-digitalized institutions. We need to invest. We have a big investment package of 4.3 billion euros, co-financed by the national government and the federal states; this means some 220 million euros for Berlin, specifically

for digitalization measures. We are now investing this booster in new devices and processes. We aim to make the investment sustainable in the permanent renewal of hardware and software, the renewal of licenses, and necessary purchasing to maintain the higher complexity of the digitalization level. We have a great challenge ahead; without IT specialists, a hospital can come to a standstill. As a hospital association, we must ensure that hospitals have access to skilled IT workers. I am proud that the Berlin Hospital Association can offer, in collaboration with a university in Berlin, an IT course specialized in hospital work with a curriculum that encompasses hospital management needs and IT. We hopefully will launch the course next year and have new specialists after a few years. Finally, working with the Chambers of Commerce, we are implementing special education programs for IT administration workers, looking at special education for the needs of hospitals.

Then there are issues such as inflation costs; we are battling inflation of about 8%, and the hospitals don't have a flexible remuneration system; we have only been allowed a cost raise of 4.3%. The gap between cost and the increase is getting bigger, and this is just the symptom of the structural underfinancing of the hospital running costs. The German DRG system no longer covers all the costs, endangering our healthcare system. The German hospital remuneration system has two pillars, i) the financing of the running costs done by the DRG system and ii) the investment costs borne by the regional governments. But the regional governments don't invest, and year by year, we are missing 3 billion euros which should have been invested but which we haven't got. The underfinancing of the running and investment costs has led to the conviction we need a reform. The federal minister presented an expert committee report at the beginning of the process on the reform, which would endanger the very existence of hospital care if implemented as suggested. In Berlin, of our 60 hospitals, only seven would remain. From the 22500 hospital beds, we have today, only 7000 would remain. The committee believes hospitals should be organized in a new way, with five levels of hospital care. Each of the suggested five hospital levels would have to fulfill a certain structural quality criterion. They created 128 service groups, each including similar treatments – e.g., one group for orthopedics for extremities, another group for birth, and so on. Each group would be sorted into one of the five levels. Childbirth, for instance, would only be provided at level 2 or 3 hospitals. Level 2 must have a stroke unit, and half the hospitals in Berlin aren't level 2, so they won't be able to deliver babies because they don't have a stroke unit. A stroke unit and birth have no medical connection, but this reform will mean that a hospital that delivers 4500 babies a year cannot go on doing so because they don't have a stroke unit. It is only one example of the many incongruences, and we have already proved it would not be implementable in day-to-day practices. We have also delivered our view and strategy for modernizing the hospital landscape. We agree that not all hospitals could be protected and that there must be a concentration process according to the region. We have big federal states with a low and even shrinking population density, but Berlin is a growing city of almost 4 million people, which shows the diversity of the starting scenarios in the different federal states. Since the reunification of Germany, we have

had a vast reduction of beds in Berlin, and there is a low density of hospitals regarding population. The Berlin hospitals have a very high rate of use and a high case mix, a very different scene from rural areas; the national government analysis doesn't consider the various settings. We believe the German hospitals are more qualified to deliver a concept on the reform. *The expert committee also gave a report on emergency care which I don't think will be treated this year because we are at odds with the first hospital report.*

EF: You are also the chair of the committee of the EU international affairs in the DKG, giving you knowledge on how hospitals in the EU perform. How do you rate the performance at a regional level compared to Berlin?

MS: The problems described, digitalization, climate change, and lack of healthcare workforce, are all issues we have in common. The common challenge is better working conditions. Many domestic issues also exist. In 2010, there was the PIP scandal in Paris, where a French company used industrial silicon instead of medicinal silicon for breast implants, with thousands of women suffering pain and having to be re-operated. The EU immediately reacted to the scandal by launching a legal proposal in 2011; however, it took till 2017 for the EU lawmakers to agree on medical device regulation. Even today, we struggle with implementing this regulation. In the middle, we went through Brexit; traditionally, Great Britain has been among the notified bodies making the admissions for the new medical devices, which they no longer can do as they are out of the EU. The remaining EU-notified bodies had to be recertified as their quality was doubtful; all this has led to today not having the adequate number of notified bodies to admit new medical products. We still don't have any notified bodies for the so-called single-use devices, so other remaining notified bodies must newly admit the products that have been successful on the market for years.

We don't have adequate capacities, and companies are stopping readmitting them or are not innovating, affecting the European population even to the extent of death due to the lack of an admittance process by EU law. Children are dying, especially when small product lines are not interesting for the companies under the new admission process. Doctors in hospitals must use medical devices developed for adults and adapt them to children's needs, with all the liability questions this implies. Fortunately, we are in dialogue with the Parliament, Commission, and Council with a new draft to postpone the implementation period for another five years, which should help. During the crisis, Europe raised much political awareness on medical devices with knowledge from third regions, such as Asia, to redirect production to the EU. But the medical device producers look for the best conditions for manufacturing, and labor costs in Europe are much higher, so it will be difficult to bring them back.

We are in the last year of the legislative period on the EU level, there will be new elections in 2024, and at the end of this year, the election campaign will begin, so the EU work will decrease, making it even slower than it usually is. We have missed chances to pass necessary laws, and working there is currently very frustrating.

EF: On a more positive note, could you share some successes in hospitals on strategic approaches to climate change or any other topic in Berlin?

MS: We have several very advanced hospitals in Berlin. They have decided

to protect the climate and achieve carbon emission freedom and are on the way to their goal. The person who leads the climate protection groups in our member hospitals is part of our expert group that developed our strategic paper, which includes making a building more energy efficient hospitals have their heating system making the renewal energy plan expensive. Climate protection changes for buildings are a direct challenge to the extensive laws for monument conservation. People have romantic ideas about historic buildings, but we need to restore the Berlin hospitals, many of which are historic buildings. In some cases, we need to be allowed to neglect monument conservation to be able to achieve climate protection. Our hospitals are investing in solar energy and reorganizing their food system so that it comes from certain regions. Besides Martin Luther Hospital and the hospitals Havelhöhe, being the climate-friendly hospitals in Berlin, others are also working hard on their strategies; the *Unfallkrankenhaus managed to employ well-known experts on hospital climate protection and launched new expert-driven processes. The Charité Facility Management, a daughter company of Charité, has a CEO who has already established several effective and successful projects for climate protection, some very simple, for instance, avoiding single-use cups and plates in cafeterias. In Berlin, now there is a trend in these strategies. In the last 15 years, Martin Luther Krankenhaus has done much toward climate protection.*

The mobility concept of the hospital is also important; in our strategic plan, the fleet of cars should be sustainable, and the mobility of 55 thousand employees coming to work daily is considered. It could be an additional idea to offer the employees electric supported bicycles, or to offer easier access to public transport means. Installing electric filling stations in front of hospitals to promote the use of bicycles and electric cars. We are also talking about waste management; the medical device industry made a study on their footprint waste. When they hand the medical product to the hospital, we must avoid waste; when it is unavoidable, we study how to better deal with it. Water consumption is another consideration: how water waste is redirected in the public water system. Also, recycling narcotic gazers that are emitting a lot of carbon dioxide can be reused after preparation -good examples already exist also in Berlin. Every hospital employee can achieve low hurdle measures in a normal working day. We can save energy and resources, avoid wasteful consumption, lower our emissions, and share these good energy-saving examples with other hospitals in other federal states; we can all learn from each other. With the explosion of energy costs entering winter last year due to the war against Ukraine, we organized conferences. We invited experts to explain simple ways to save energy in hospitals that require special conditions. It was successful; we quickly achieved a reduction in energy consumption. There is still potential to be worked on in processes.

“ Climate protection by hospitals must be a success. Having a hospital association that structurally works on strategic matters is critical. ”

We do a lot of networking, basically organizing the money, talking to the government, and generally concentrating on climate protection. It is possible to create a hub on climate protection in Berlin. We are not an exclusive club; we are open and welcome colleagues in other federal states to make a good environment for this topic to flourish.

Dr. Amina Elsner

Country Manager
Ferrer Germany



EF: How has your mission evolved in the last five years as a country manager in Germany?

AE: I began as the country manager for the newly founded affiliate, Ferrer Deutschland. It has been an exhilarating journey witnessing the significant changes and developments that have taken place over the years.

Ferrer is a purpose-driven company with a well-defined and strong purpose. The company's single-family owners drive this purpose to make a positive impact on society. This purpose is deeply ingrained within the company and is evident in how it is lived and felt throughout the organization.

Our success rests on three main pillars: Great People-to promote a people-centered culture based on trust and accountability, in which talent thrives; a Livable Planet, to foster environmental protection for our own good and that of future generations; and Social Justice, to support people in vulnerable situations, contribute to a fairer and more equitable society and to ensure equality of opportunity.

EF: As the general manager for Germany, what key initiatives or pillars should a manager have to share the purpose with their staff?

AE: *Effective management is not just about making public statements but about integrating sustainable practices into everyday life.* In Germany, we are committed to promoting these pillars by transitioning our fleet to electric vehicles, illustrating our commitment to implementing sustainable initiatives. Ferrer has launched several excellent initiatives, including the Days for Good, where employees worldwide participate in volunteer activities. In 2021, 420 volunteers contributed over 1,300 hours to social and environmental projects, underscoring the company's dedication to sustainability and social responsibility.

Last year, Ferrer was certified as a B Corp worldwide, making it the first of its kind and ranking it among the top 25% B Corp-certified companies in the world, with an impressive score. This accomplishment indicates the company's genuine commitment to supporting sustainability initiatives and positively impacting society.

EF: How is Ferrer continuously driving innovation globally, especially from a sustainable point of view?

AE: To enhance the quality of life for patients and maximize societal impact, improving our work practices and business management is imperative. This entails a strategic approach to patient care incorporating cutting-edge medical interventions and fostering innovation in the healthcare industry. By embracing these principles, we can develop a patient-centric ecosystem that empowers individuals to lead healthier, more fulfilling lives while generating positive externalities for the broader community. Achieving this requires a commitment to excellence and a willingness to adapt to changing circumstances while always placing the patient's needs at the forefront of decision-making.

As a science-based company, we are steadfast in our commitment to developing transformative solutions for patients in need. Our focus is primarily on two therapeutic areas that address severe and debilitating diseases with low

prevalence. By honing our efforts in these areas, we hope to provide alternative therapeutic options where none exist. As shown with our Phase II and III studies, we remain committed to these patients in order to bring potential solutions to those areas with unmet needs. Our investment in research and development is significant. In 2021 alone, the total amount invested was 43.5 million euros.

EF: How do you share the purpose of Ferrer within the company among the employees and customers, and how do you make sure it is understood?

AE: *The company's strategic plan only has three pillars, Great People, Livable Planet, and Social Justice. As such, every single employee must take this into account before making any decision. This guarantees that we are all working in the same direction towards our purpose of making a positive impact in society.*

To put an example, the corporate volunteering program at Ferrer, which is available to all of our employees worldwide, focuses on combining social and environmental projects aligned with the work of affiliated foundations, allowing employees to experience the impact of their contributions firsthand. For example, employees may harvest potatoes in urban gardens or prepare meals for those in vulnerable situations in industrial kitchens.

Ferrer's commitment to social responsibility is evident through various initiatives undertaken at a global and regional level. Ferrer cultivates a shared purpose by involving employees in meaningful initiatives, making it an attractive company. While the larger company in Spain has a wider reach, the smaller German team also contributes to such efforts. For instance, German employees donated personal belongings such as clothes and books for a social cause last year. Such programs demonstrate that Ferrer prioritizes social transformation. This translates into the company's purpose in every country, including Germany.

EF: How can we enhance these initiatives in the German market and amplify Ferrer's positive social impact in Germany?

AE: As the German affiliate expands, its primary focus is reinvesting in social and environmental initiatives. By prioritizing these critical areas, we seek to create a sustainable business model that generates economic benefits that can then be reinvested positively society and the environment. This strategy stems from a keen awareness of the increasing size and volume of the affiliate and the recognition of the responsibility that comes with such growth.

Besides prioritizing social and environmental responsibility, the company places equal emphasis on caring for its employees, referred to as the "Great People" pillar. The company's purpose is aligned with this approach, recognizing that a commitment to giving back to society must begin with taking care of one's own. This commitment to caring for its employees is vital to the company's DNA and ability to serve communities in vulnerable situations and reinvest profits into social and environmental programs effectively. Overall, the company's purpose is deeply ingrained in all its operations, from portfolio building to benefit reinvestment, creating a shared sense of purpose among its employees.

Dominique Ziegelmayr

CEO and Founder
DatamedIQ



EF: When you started DatamedIQ 5 years ago, what was the need you identified in the market for this venture?

DZ: DatamedIQ was initially founded as a joint venture of three companies. It involved the three biggest ePharmacies in Germany: Zur Rose's DocMorris, Shop Apotheke, and Medpex, now a part of the Zur Rose Group as well.

“Our vision was to bring the speed and transparency of the state-of-the-art eCommerce to the pharmaceutical industry because, at that time, information providers only cared about monthly sellout data.”

EF: Could you elaborate on what DatamedIQ provides and how it disrupts the market?

DZ: We are an information provider selling insights about the ePharmacy market in Germany to pharmaceutical companies. We buy data from ePharmacies, aggregate this data, and then extract unique insights about the market, the competition, and the customer's behaviors. We then put this on a platform and sell it to the pharmaceutical industry.

Today we are supporting the marketing and sales teams at almost every major pharmaceutical company in Germany. However, our vision is a lot broader. We want to become e-health insights specialists in Europe. We are growing from Germany to other countries and moving away from simple ePharmacy data to telemedicine data, eRecords, and whatever else we can get our hands on in the digital healthcare market. We also want to make and support use cases for different customers with consulting and training. It is very ambitious, and it is part of our five-year plan. We have made our first steps into Europe.

EF: What challenges and opportunities do you see in the German pharmaceutical industry?

DZ: ePrescription is poised to revolutionize the pharmaceutical market in Germany, enabling a higher level of digitalization. The current paper-based prescription model involves multiple physical steps and processes. With ePrescription, paper is eliminated, allowing for telemedicine services. Patients can choose between local pharmacies and ePharmacies for prescription fulfillment shift also presents valuable opportunities for data collection and standardized datasets for research. Challenges regarding patient and personal data security need to be addressed, but overall, this transformation can lead to a digitally supported healthcare system.

German data protection laws, including GDPR, sometimes hinder re-

search involving patient data. A federal initiative aims to establish a German data center where stakeholders can access anonymous data for research purposes. This presents a significant opportunity for pharmaceutical companies to work on vital research topics using data sets that no longer contain personal identifiers. The data center provides anonymous and extensive data that helps us understand complex oncologic problems. Initiatives like the German research data center (FDZ) facilitate access to large-scale data sets while ensuring privacy protection.

When we started DatamedIQ, we had already talked about prescription data's importance. Currently, about 22% of all OTC purchases are performed online in German.

EF: Pharmacies are shifting to a more value-based model, trying to own the relationship between the patient and the pharmacy. How do you think this trend will impact the growth of the online pharmacy market?

DZ: The ePharmacies have been and remain to be the growth channel. 2022 was the first year where the offline pharmacies had a higher growth rate than the ePharmacies, which was only due to the strong references to ePharmacies in 2021 and a very low reference for the brick-and-mortar pharmacies. If you think about it as a consumer, ePharmacies can be understood as a convenient and price-efficient channel. Consumers are used to buying their products online and having them delivered to their doorstep. With the launch of ePrescription and the rise of telemedicine, all of that will help grow a digital health infrastructure.

There is a lot of growth potential in digitalization in terms of the whole value chain. But I think with the German jurisdiction and the strong healthcare stakeholders, we are talking about a period of at least ten years until this works in an integrated way.

EF: Your company is celebrating its fifth anniversary. What are some of the key milestones that you have already accomplished that you want to celebrate with your team?

DZ: Our product seems to be relevant, and we work with every major pharmaceutical company today. That is a great achievement for these five years. Breaking even after only two years and getting the company running was also another great achievement. From a product perspective, we had the idea to get the pharmaceutical companies' data that help them make faster and smarter decisions.

We are proud that our customers are increasing the usage of our data. Two years ago, digital data was not that important. Today, however, our data has become integrated everywhere, and people are starting to understand how they can combine the data from DatamedIQ with data from elsewhere. They are starting to analyze it from a business perspective, look at the datasets, and produce a valuable source of truth. This is something we achieved together with the pharmaceutical companies. Our achievement at DatamedIQ is that we have the most accurate, fastest, and most transparent dataset.

Victoria Grandsoult

Managing Director
Virchow Foundation for Global Health



EF: Could you describe your current footprint, history, and what your company aims for?

VG: The Virchow Foundation for Global Health was founded in 2021, so we are a rather new foundation and organization. *Our mission is to drive international awareness and engagement for global health.* We achieve our mission through four pillars of activities; networking with stakeholders and disciplines related to public and global health, promotion of research projects and the application of research results and supporting symposia and conferences within the field of global health. *The fourth and largest pillar is the awarding of the Virchow Prize for Global Health. It is the only award of its kind that recognizes innovations with significant impact on the broad health challenges faced by our global community while upholding the United Nations 2030 Sustainable Development Goals. The Virchow Prize is intended to honor exceptional individuals and organizations at a high level for their commitment to global health, energizing the field, and incentivizing great minds to improve health access and outcomes.* This is our unique role within the international health community. It is the legacy and footprint we are working to leave behind.

We are looking forward to awarding the Virchow Prize for a second time this year, which will take place on October 14 in Berlin City Hall. The 2023 nomination phase is currently open until March 31. We highly encourage qualified nominators to submit if they know an individual or organization who has dedicated their work to global health. All the information can be found on our website.

EF: Last year's winner Dr. Nkengasong awarded the €500,000 prize to the networking alliance of African Field Epidemiology (AFENET) in Uganda. What do you think is the impact of the donation he made?

VG: The Virchow Foundation was founded as an awareness-raising platform. We are collaborative at our core. *Through the foundation, we seek to unite different actors from academia, politics, and others to work jointly on new partnership opportunities.* It is the vision of the founders that a large portion of the prize money is given back to the community. It was a pleasant surprise that John Nkengasong donated the entire prize endowment to AFENET, which went towards addressing health inequities in vulnerable populations in Africa. The awarding of the Virchow Prize, which elevates the recognition of the laureate and their work, supports relevant engagement before and after the ceremony. The funds are being donated back to the community, which injects money and awareness back into global health topics. From this, future collaborations and partnerships can grow. It is our hope that the inaugural laureate will serve as a role model for all future awardees of the Virchow Prize, also when it comes to the use of the prize endowment. The goal is to fuel this ecosystem, teamwork, and a global vision.

EF: What are some of the most pressing global health issues you see now, and how can the Virchow Foundation increase awareness of these issues with the prize and the different initiatives?

VG: *One of the most pressing and key challenges in global health, especially in 2023, is financing. The pandemic emphasized the need for health systems investment and innovation, with Germany pioneering a global health strategy and*

supporting the WHO Hub for Pandemic and Epidemic Intelligence in Berlin. However, geopolitical conflicts, energy crises, and inflation threaten global health goals, including the UN's SDG 3 for universal well-being. The pandemic spurred innovation in testing and vaccination but hindered access to chronic and infectious disease treatments. Thus, sustained health investment is crucial for resilience against unforeseen challenges.

The Virchow Foundation and the Virchow Prize are still quite new, but the prize is something unique we bring to the global health ecosystem in Berlin. By offering an avenue of awareness raising, we are working to inspire and open new platforms for the winners and their work at the highest level. We are fortunate to have some of the top international experts engaging with the foundation and prize within its Board, Council, and Virchow Prize Committee. This is one way to elevate awareness and generate connections toward possibilities for innovation in health.

John Nkengasong's journey from humble origins to a successful virologist exemplifies the power of education and opportunity. He significantly contributed to healthcare infrastructure through initiatives like the Africa Centers for Disease Control, fostering diversity and innovation. Sharing such stories inspires unique partnerships and knowledge sharing. Moving forward, it's essential not to revert to the status quo but continuously seek improvements in our systems.

EF: How do you see the concept of global health in reducing the gap of technology asymmetry globally?

VG: *The difficulties in achieving universal health coverage come down to the frameworks that cause discrepancies in access, research, and knowledge sharing.* These discrepancies then increase between countries with more limited access to investment and resources. We can see this with HIV, for example, a pandemic we have been living in for 40 years. The burden of this disease continues to be highly unequal around the world, and the delayed diagnosis, treatment, and cure speak a lot to the inconsistencies in interest and investment for certain diseases.

Therefore, we must break down the borders between us and begin to view global health as public health on a larger scale. *The future is uncertain, but investing in health stimulates a ripple effect to generate a more stable economy and society. The importance of having a global perspective cannot be overstated.*

EF: How is the Virchow Foundation working toward bridging the gaps of knowledge exchange in global collaborations between stakeholders?

VG: *People's health is interconnected, and it is one global entity. The way we address healthcare in one part of the world has the potential to impact the health of those in another part of the world.*

Although the Virchow Foundation is based in Berlin, Germany, our outlook is global. We recognize global health from Berlin to the world. It is a bridge we can provide for international stakeholders to engage in Germany.

Germany is a global health leader, and Berlin is the city of global health. We play a unique role by supporting Berlin and finding ways to connect the pathways internationally. There are other strong global health actors in Germany and our collective aim is to provide an international and valuable contribution to the entire effort so that we can all foster and thrive together.

Dr. Markus Leyck Dieken

General Manager
Gematik



EF: When first appointed, what was your main objective, and how has the pandemic impacted the implementation of e-health and e-digitalization since then?

MD: After 14 years of serving as the central agency for digitalization, the organization was taken over by the government and other shareholders, resulting in significant improvements to the company. Prior to the takeover, Germany ranked low in healthcare digitalization despite being a highly technological nation, and the country needed to catch up with other major players in the rankings.

As the GM of Gematik, I was appointed to lead the organization toward new opportunities in digital currency. However, just nine months after my appointment, the outbreak of Covid-19 challenged our cultural grip and contact. Despite this setback, the pandemic ultimately had a positive impact on digitalization efforts in Germany, and two major nationwide digitalization initiatives were implemented: the Corona Warn App and the Covid Pass. Gematik was involved in the latter and distributed more than 243 million vaccination certificates, which is an example of how people tend to support technology and digitalization when they trust it.

EF: How is the industry adapting to the switch from analog to digitalization in Germany?

MD: Looking at electronic records as more than a tool is crucial. The electronic healthcare system records normal findings such as ECGs and labs. Autoimmune diseases, like multiple sclerosis or Alzheimer's, however, have complex histories, and it takes a long time to determine their cause. For example, an Epstein-Barr virus infection can increase the risk of developing multiple sclerosis by 80%, even thirty years later. *Electronic records can help to correlate and pursue research faster, making it easier to test theories without involving thousands of people in a double-blind random trial.*

EF: What can we expect in the future in terms of improving the pace of digitalization in Germany?

MD: Germany needs to speed up its digital transformation efforts to keep up with other European nations. To achieve this, every quarter, an external interoperability board of specialists defines international standards for certain parts of the ecosystem. The aim is to have organized and easily accessible electronic records for everyone, similar to Denmark's healthcare system. *The significance of digitalization lies in its ability to transcend physical and cultural barriers, as well as barriers related to patient activism, making it a crucial factor in advancing the digital transformation process.*

The current healthcare system's inefficiency can already be improved with smart digital tools like appointment reminders. Gematik, with its 420 employees, operates fully as part of the healthcare system and plays a crucial role in its backbone. The goal is to create a base of structured data and research for better health services from sick funds, health insurance, doctor associations, and patient associations. With a structured data foundation, logical consequences for patients can be properly deduced.

EF: How can Gematik enhance awareness about the importance of adapting to digital tools, especially around the healthcare delivery frontline?

MD: *Reaching international standards and ensuring a high level of security increased the trust of our frontline customers.* Gematik has focused on single-doctor practices for the last fourteen years. However, now, with the German Hospital Association as a shareholder, hospitals and multiple-doctor practices are gaining more attention. Many of our products were initially designed for single and double-doctor practices, as tracking a doctor's prescriptions in a small clinic is easier than in a large hospital. For hospital software systems, interoperability plays a crucial role. Gematik's objective is to integrate physician-based and software-based solutions to address this challenge.

Two years ago, the Krankenhaus-Entlastungsgesetz, Germany's Hospital Relief Act, allotted 4.4 billion for hospital IT upscaling. Gematik has played a crucial role in assisting hospitals to avoid the expenditure of funds on inappropriate commercial offers. Given the fragmented nature of having 1900 hospitals in Germany, each with its unique software systems, hospital systems needed to adjust gradually to this connectivity. *Gematik offers standardized programming software that fosters interoperability and connectivity, allowing for structured data to link various stakeholders and enhance patient-centered care, resulting in earlier diagnoses and better financial stability for payers.*

Effective management of data and improvement of healthcare delivery require interconnectedness. The German government introduced e-health, which includes telemedicine, and abolished the 30% rule that previously limited doctors to spending only 30% of their cases on telemedicine. *The removal of the 30% rule will attract telemedicine companies back to Germany, allowing for state-of-the-art healthcare delivery, particularly in remote areas.* Traditional face-to-face doctors must also adapt to the telemedicine model, and companies specialized in telemedicine can provide training to obtain as much patient information as possible.

EF: What achievements would you like to celebrate?

MD: Currently, Gematik is commemorating two significant achievements. The first milestone involves adopting international standards for all tools designed since I joined the company. Gematik has implemented the Matrix Foundation protocol for its team messenger, which is widely used by ten million people across Europe. This protocol ensures the safety and security of the messenger.

The second milestone is the successful opening of Gematik to actual healthcare professionals, which was achieved through significant effort. *The company is proud to have direct communication with patients, caregivers, doctors, and pharmacists. Gematik's employees now engage in dialogues with these groups, and, in collaboration with 17 other medical associations, therapists, and healthcare professionals, we have designed a new healthcare record.*

Chapter 5

Medtech

“83% of all MedTech companies are small and medium-sized companies.” Dr. Marc-Pierre Möll – Managing Director, BVMed

Germany is known for pioneering technological advancements, particularly in the medical industry. In this chapter, we will describe the current situation, opportunities, and initiatives taken by the players in the market.

A Glimpse of the Infrastructure

Over the past decades, medical technology has played a transformative role in healthcare globally, and Germany's medical technology infrastructure has been at the forefront of this revolution. With a relentless focus on research and development, Germany has solidified its position as a pioneer in medical technology, driving advancements that have had a profound impact on patient care and economic growth. According to a recent WifOR study, Germany is the second largest MedTech location worldwide.

Germany's commitment to innovation and excellence in medical technology has resulted in groundbreaking discoveries and revolutionary devices. From cutting-edge imaging systems to sophisticated surgical instruments, these advancements have transformed diagnostics, treatment procedures, and patient outcomes. The country's medical technology industry has played a vital role in improving the accuracy and efficiency of medical diagnoses, enabling early detection of diseases and precise interventions.

However, according to a recent study and communication from BVMed, companies rate the innovation climate for medical technology in Germany at an average of only 3.6 on a scale from 0 to 10. This is the absolute lowest value since BVMed surveyed the index in 2012.

It is imperative to keep working on frameworks that allow growth and transformation of the existing organizations that have been committing to delivering better healthcare. "83% of all MedTech companies are small and medium-sized companies," expressed **Dr. Möll** from BVMed. "Having access to a notified body is challenging for them, and this can endanger their sustainability."



Claudia Dierig, Managing Director at Thermo Fisher, shares how they choose Germany to drive innovation: "In Germany, we have a large network of partners we collaborate with, including research organizations, large-scale biopharma and biotech customers, and industry associations. We are supporting life science research that directly influences diagnostics."



Dr. Christian Hauer, a key player at Fresenius Kabi MedTech, speaks to the company's dedication to innovation within the German MedTech industry. Highlighting the company's strategic approach, he said, "We merged our Transfusion Medicine & Cell Therapies (TCT) and Infusion & Nutrition Systems (INS) segments into one entity... This improved our agility by increasing our decision-making process. Accountability drives each specific vertical business forward." With the integration of TCT and INS, they have streamlined their processes, bolstered agility, and fostered a culture of accountability that advances each business vertically.

The Importance of Patient Centricity

The heart of Fresenius Kabi's innovation strategy rests on their focus on providing value to their customer base and listening to local markets. **Dr. Hauer** explains: "We support our customers in the clinical outcome, improving patients' safety and making the process of our customers more efficient[...] we modify products for them to serve local requirements best[...]The solutions and improvements result from being close to our customers and users." This customer-centric approach has enabled the company to develop products that not only meet market requirements but also contribute significantly to improving patient safety and process efficiency.

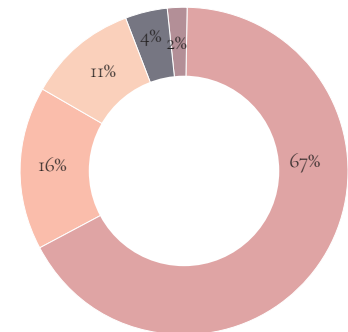
Adopt or adapt, lead or be led.

Fresenius Kabi stays ahead of the curve by driving strategic acquisitions of companies like Ivenix, which demonstrates their commitment to staying at the forefront of medi-

Most MedTech companies in Germany are SMEs

Number of companies according to employee size

● <50 ● 50-99 ● 100-249 ● 250-499 ● >500



Source: SPECTARIS 2022

cal technology. According to **Dr. Hauer**, "We aim to become a major player in the US IV therapy market with Ivenix and its superior technical capabilities[...] We have invested heavily in new technologies and US-based production infrastructure." This strategic acquisition and investment are a clear testament to Fresenius Kabi's determination to spearhead innovation in the MedTech industry, ultimately leading to better clinical outcomes, improved patient safety, and enhanced process efficiency.

A prime example of Johnson & Johnson MedTech's innovative approach can be seen in the bariatric area, where Johnson & Johnson leveraged technology to



significantly reduce patient drop-out rates. **Kristof Boogaerts**, Vice President Medical Devices Germany for J&J MedTech, elaborates, "For bariatric surgery, there was an 80% drop-out rate between the first consultation and the final procedure, mainly because of a need for better awareness and engagement. Through our digital solution, patient engagement, and patient education initiatives, we were able to decrease the drop-out rate from 80% to 40%." This instance underscores Johnson & Johnson MedTech's holistic approach and commitment to investing in preventative measures to improve patient outcomes.

Key Players in the Market

Germany boasts a thriving medical technology market, home to a diverse range of companies catering to various healthcare facets. Let us shed light on a few prominent players shaping the German medical technology landscape:

Fresenius Medical Care: With a specialization in dialysis products and services, Fresenius Medical Care stands as the world's largest provider of dialysis products. Their unwavering commitment to renal care has transformed the lives of countless patients around the world.

Siemens Healthineers: As a global leader in medical technology, Siemens Healthineers offers a comprehensive portfolio of imaging systems, laboratory diagnostics, and advanced healthcare solutions. Their innovations

empower healthcare professionals and contribute to better patient care globally.

B. Braun Melsungen AG: B. Braun Melsungen AG focuses on medical and pharmaceutical products, offering a broad range of innovative solutions in areas such as infusion therapy, anesthesia, and surgical instruments. Their contributions enhance the efficiency and safety of medical procedures.

Stryker Corporation: Stryker, a multinational medical technology company, offers a wide array of products and services, in-

cluding orthopedic implants, surgical equipment, and neurotechnology. Their innovations enable breakthroughs in surgical precision and patient mobility.

Carl Zeiss Meditec: Renowned for optical and optoelectronic medical technology, Carl Zeiss Meditec develops and manufactures cutting-edge visualization solutions, surgical microscopes, and diagnostic systems. Their advancements facilitate accurate diagnoses and effective treatments.

Drägerwerk AG & Co. KGaA: Drägerwerk is a global leader in medical and safety technology, specializing in products and services for acute patient care, emergency care, and personal protection. Their solutions ensure the safety and well-being of both patients and healthcare providers.

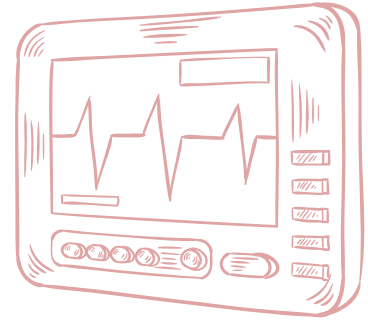
TOP COMPANY REVENUES (WORLDWIDE & CONSOLIDATED)=

in billion USD (US\$)

	2019	2019	2020	2021	2022
Abbott Laboratories	30.58	31.90	34.61	43.08	43.65
Becton, Dickinson And Company	12.09	17.12	20.25	18.87	
Boston Scientific	9.82	10.74	9.91	11.89	12.68
General Electric Co	121.60	90.22	75.83	74.20	76.56
Johnson & Johnson	76.45	82.58	93.78	94.94	76.45
Koninklijke Philips	21.41	19.20	19.75	20.30	19.94
Medtronic	29.95	30.12	31.69		
Roche Holding	58.13	61.86	62.11	68.72	68.85
Siemens Healthineers	15.86	16.25	16.50	21.30	24.29
Stryker	13.60	14.88	14.35	17.11	18.45

Data from Statista suggests that revenue in the Medical Technology market in Germany is projected to reach US\$38.36bn in 2023, contributing significantly to the country's growth.

The Role of the Medical Technology Industry in Germany



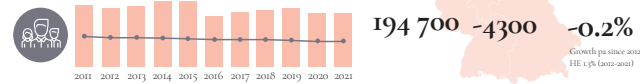
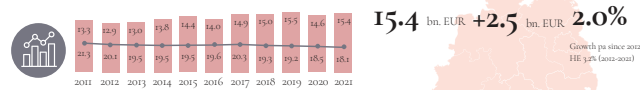
According to BVMed, Germany is the third biggest market for medical technologies in the world.

The medical technology industry is one of the most important sub-sectors of the health economy. In 2021, the German MedTech industry's absolute gross value added amounted to 15.4 billion euros, which corresponds to 18.1% of the total IHE, and employed around 414,000 people according to BVMed and WifOR's 2022 SEE Impact-Study.

According to Statista, in 2020, Germany was the second-largest exporter worldwide of Medical Technologies. Exports have been growing steadily since 2012, with the exception of the Covid-19 pandemic.

The MedTech industry also represents one of the country's most innovative sectors. In 2021, R&D generated a gross value-added contribution of around 1.0 billion euros and employed more than 10,400 people.

The economic development of the MedTech industry



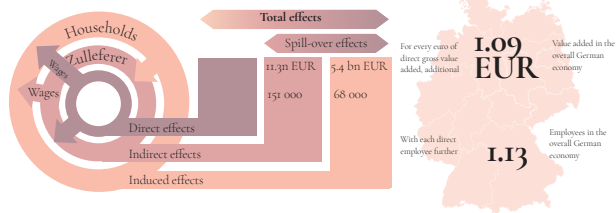
Source: Federal Ministry of Economics and Climate Protection (BMWK) (2022): Health Economics - Facts & Figures. Health Economy Reporting results, data 2021

The economic development of R&D in the MedTech industry



Source: Federal Ministry of Economics and Climate Protection (BMWK) (2022): Health Economics - Facts & Figures. Health Economy Reporting results, data 2021

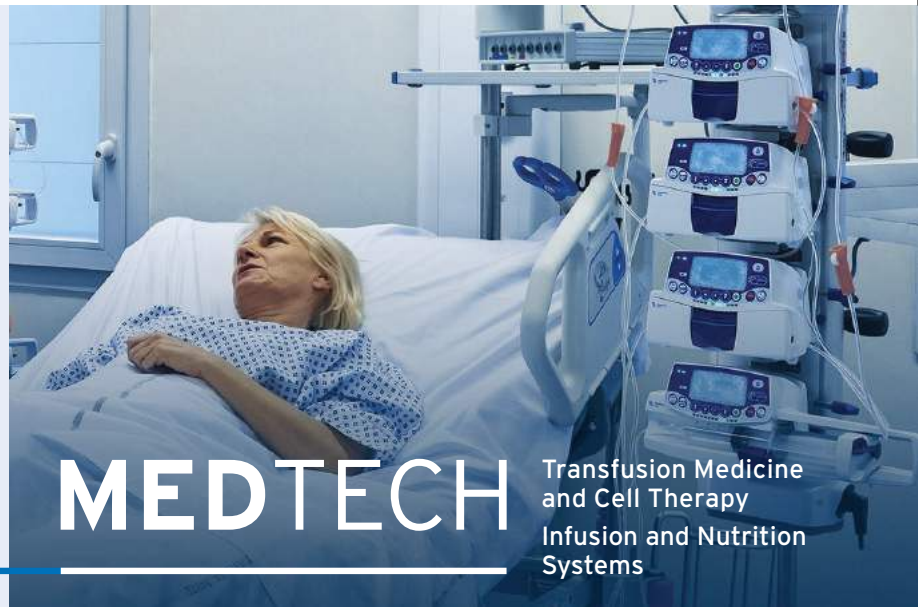
The economic footprint of the MedTech industry 2021



Source: Federal Ministry of Economics and Climate Protection (BMWK) (2022): Health Economics - Facts & Figures. Health Economy Reporting results, data 2021



Improving clinical outcome, patient safety, and process efficiency



MEDTECH

Transfusion Medicine and Cell Therapy
Infusion and Nutrition Systems

The Role of E-Health: Harnessing Innovation for Improved Health Management

Over the past decade, Germany has been on an ambitious path toward digital transformation in the healthcare sector. E-health, defined as the use of information and communication technologies for health, has been promoted as an essential tool for enhancing the efficiency, accessibility, and quality of healthcare services. Several e-health policies have been rolled out, marking significant strides toward embracing digital health technologies. However, as these innovations become increasingly integral to healthcare delivery, a need for a more inclusive regulatory framework is emerging.

E-Health Policies in Germany

Germany's healthcare system traditionally embraced a more conservative approach towards e-health, primarily due to stringent data protection laws and the need to maintain high healthcare standards. However, this began to change with the introduction of the e-Health Act of 2015, which focused on improving patient care through digital health services. This Act marked a significant turning point, mandating the creation of a telematics infrastructure, the introduction of e-prescriptions, and electronic health records, among other digital health initiatives.

In 2020, Germany took a massive leap in e-health with the Digital Healthcare Act (DVG). The DVG laid the foundation for health apps to be prescribed by doctors and reimbursed by statutory health insurance, marking an unprecedented move in integrating digital health into mainstream healthcare. This Act paved the way for faster, safer, and more efficient healthcare services, offering patients the freedom to access services remotely, thereby improving healthcare accessibility.

According to a study by McKinsey, the value of digital health solutions for the German health system is estimated at an annual value potential of €42 billion, mainly on the basis of productivity gains and demand reduction. This figure represents approximately 12 percent of Germany's overall annual healthcare expenditure. So far, only €1.4 billion, or just over 3 percent, of this value has been realized. It is estimated at an annual value potential of €42 billion, mainly on the basis of productivity gains and demand reduction. This figure represents approximately 12 percent of Germany's overall annual healthcare expenditure. So far, only €1.4 billion, or just over 3 percent, of this value has been realized.¹

The Need for a More Inclusive Regulatory Framework

Despite these significant strides in digital health, there is a growing consensus on the need for a more inclusive regulatory framework.

While the e-Health Act and the DVG have laid a robust foundation for digital health in Germany, the evolution of healthcare technology necessitates a framework that can cater to its rapid pace and scope.

Firstly, while data protection is paramount, current regulations may inhibit innovative technologies that rely on the use of data, such as artificial intelligence (AI) and machine learning in healthcare. There is a need to strike a balance between protecting patient data and promoting innovative technologies that can enhance health outcomes. A conversation with **Dr. Markus Leyck Dieken**, General Manager of Gematik, provided valuable perspectives on how Gematik aims to build trust with patients and end consumers in the digital health space. Dr. Leyck Dieken stressed, "At Gematik, data safety is paramount, and we adhere to the European philosophy of treating data. We emphasize the significance of safety and efficacy, which are the two pillars of growth, to promote the adoption of new technologies and digitalization." He also highlighted Gematik's individualized cryptographic coding method for electronic health records as a testament to the rigorous data safety measures they employ. These comments reinforce Gematik's commitment to data privacy and security, crucial factors in establishing public trust in digital health initiatives.



Secondly, the inclusivity of the digital health space needs to be addressed. While Germany has made progress in making digital health solutions available to patients, digital literacy and access to digital infrastructure remain significant barriers. The regulatory framework should be inclusive, aiming to bridge the digital divide, particularly in more rural and older populations, to ensure the benefits of digital health are accessible to all.

Lastly, regulations need to facilitate collaboration across the health sector. E-health does not operate in a vacuum; it necessitates collaboration among healthcare providers, insurers, IT developers, policymakers, and patients. Therefore, an inclusive regulatory framework should promote cooperation, fostering an ecosystem that allows innovative health solutions to flourish.

¹ Philipp Hühne, "Digitalisierung im Gesundheitswesen: die 42-Milliarden-Euro-Chance für Deutschland," McKinsey, May 24, 2022. (<https://www.mckinsey.com/industries/life-sciences/our-insights/german-e-health-offerings-expand-but-adoption-remains-uneven>)

Towards a Sustainable Sector



As BVMed is pioneering in providing transparency to the sector, they published a study made by WifOR on how sustainable the MedTech industry is.

Some of the conclusions of the report are that, compared to other industries, the MedTech sector is relatively environmentally and socially responsible, but further efforts are needed to reduce its environmental impact. The industry operates within a global supply chain, which has both positive and negative effects. It stimulates growth and employment in diverse regions but also leads to environmental and social concerns when production is relocated.

The full report can be found on BVMed's website: <https://www.bvmed.de/de/english>.

BVMed keeping its members up to speed

The BVMed provides education to its members via its "Akademie" to stay on top of current affairs. Its latest event on MDR regulation was a platform for discussing impending changes and their implications.

Barbara Lengert of Johnson & Johnson Medical informed about the extension of MDR transition periods as stated in the recent regulation (EU) 2023/607. The extended deadlines, subject to certain conditions, apply to MDD certificates issued after May 27, 2017, and are valid on May 26, 2021.

Norbert Stuibler from TÜV SÜD emphasized the complexities in the MDR transition phase and advocated for the continuation of ongoing projects, application for new projects, and assembling

resources for MDR assessment. He stressed the need for digitized processes, increased market capacity, and feasible solutions for rare and innovative products.

Dr. Katrin Westphal from the Department of Medical Devices Law of the Federal Ministry of Health spoke about the amending ordinance of March 2023, aiming to reduce supply shortages and extend transitional provisions for existing products. She predicted early discussions on MDR evaluation and emphasized the need for solutions for orphan devices.

Dr. Rainer Edelhauser presented non-legislative measures for MDR implementation, including the MDCG Guideline 2022-14, and stressed the need for capacity building.

The Future of Medtech

The future of MedTech in Germany holds great promise and potential as industry leaders and experts recognize the transformative impact of innovative therapies, advancements in material sciences, and the power of technology.



Claudia Dierig, from Thermo Fisher, states, "Seeing all the cell and gene therapies brought to the market by our customers is very exciting. These therapies can change patient outcomes." To this end, they "invest vast amounts of money into research and development, particularly in scaling up and manufacturing for innovators and our customers to make therapies more accessible to patients and society."



Dr. Christian Heuer believes that: "Currently, material sciences are becoming more and more important, especially with the new focus on sustainability and environmental protection... Today's technological possibilities are enormous, and we believe there should be a way to find a middle ground to ensure data privacy and protection while taking advantage of the technology to provide a better patient outcome."



Kristof Boogaerts, Managing Director for Germany, Johnson & Johnson MedTech, trusts "in the power of technology to accelerate progress in healthcare. It is all about applied digitalization... When it comes to the use of technology, J&J aims to harness data science and intelligent automation for insight generation to solve the world's toughest health challenge and to reinvent how patients are treated."

Reflections

“In the healthcare system, silos are a significant challenge that must be addressed through a common goal. A health industry strategy for Europe in 2030 should be developed to identify and achieve actionable items.” Prof. Dr. Dennis Ostwald – WifOR Institute

We have identified several trends that are happening, and that are affecting the German Healthcare ecosystem. Now it is time for the stakeholders in the Healthcare sector to come together and define how they want Germany to be positioned in the future. Dr. Daniel Steiners highlights “In essence, innovation and collaboration are both critical to help overcome some of the biggest challenges of our time”. Claudia Dierig adds: “The last two years during the COVID-19 pandemic have shown incredible innovation through collaborative partnerships as evidenced by the rollout in record time of innovative covid vaccines and distribution channels”.

The healthcare landscape in Germany has earned its reputation as the “Pharmacy of the World” through a legacy of excellence in pharmaceuticals and medical advancements. The country’s commitment to innovation has been a driving force behind its global leadership in healthcare practices. However, the rapidly evolving global healthcare industry necessitates a reevaluation of Germany’s position and a strategic vision for the future. Companies in the medical technology and

pharmaceutical industries, as well as generic companies and logistics providers, play crucial roles in navigating these changes to ensure that innovative solutions reach those who need them most, all while managing budgetary constraints.

Healthcare plays a pivotal role in the socio-economic development of the nation, and investing in initiatives that address immediate needs while contributing to long-term sustainability is essential. To achieve this, collaboration and a shared vision among all stakeholders are paramount. “Aligning healthcare with sustainability initiatives and reducing disease burden economically and socially should be the focus”, states Prof. Dr. Dennis Ostwald, from WifOR Institute. Policy makers, regulators, business leaders, and key opinion leaders must come together to shape effective strategies for reform.

One of the critical challenges faced by the healthcare system is budget limitations, which can hinder the delivery of comprehensive and high-quality services to all citizens. Understanding the reasons behind these limitations and exploring innovative approaches to optimize resource allocation will be fundamental in moving forward.

The future of healthcare in Germany relies on a collaborative effort and a common vision that encompasses all sectors, stakeholders, and service providers. By embracing innovation, staying agile, addressing budgetary challenges, and ensuring access to cutting-edge healthcare solutions, Germany can continue to shape its strategies in a sustainable manner and maintain its position as a leading force in the global healthcare arena.

The Legacy

Executives are working exhaustively towards their objectives, and this is what they shared:



Dr. Kai Joachimsen, BPI: “The biggest accomplishment for the sector would be an acknowledgment both from society and political stakeholders for the value the sector delivers to patients, and also for the positive economic impact the sector has on economies.”



Roland Göhde, GHA – German Health Alliance: “Fast and sustainable progress in global health can only be achieved by an emphasis of translation from science and research to practice, as well as by trust and global partnerships among all sectors, inspired and led by the UN 2030 Agenda Sustainable Development Goals (SDGs).”



Annegret Wittich – Hoeffler, Galderma Laboratorium GmbH: “Having a pioneer mindset means to fail sometimes, but it also means that something new is being attempted and may result in amazing outcomes and true leapfrog moments. To be brave and dare to try new things, and to have this winning mindset will lead Galderma to the future.”



Stefan Brinkmann, Merz Therapeutics: “We are working together to address the unmet needs of those living with chronic disease and improve their quality of life. “Better outcomes for more patients” is our purpose and mission we work towards each and every day.”



Prof. Dr. Michael Popp, Bionorica: “Our concept is not about reflecting on these last 90 years. We must be fresh and young in our minds and actions, continually looking for new ideas.”



Dr. Traugott Ullrich, Schwabe group: “Developing into a customer centric thinking organization without giving up our ambition to produce and offer excellent natural health solutions is a challenging ambition. So far, we have been able to walk this road with a remarkable speed.”



Victoria Williams, GSK Germany: “The primary thing that we are celebrating is what is behind innovation, patients that have been helped with our medicines and vaccines.

I would also celebrate that we have a very engaged workforce that is motivated, talented people who are extremely proud of GSK and that relate to our innovative products. Also, for diversity, inclusion, and our work conditions. Getting innovation to patients with a team that is still highly motivated.”



Dr. Rüdiger Schulze, Ultragenyx: “I would like Ultragenyx to be widely recognized as an innovation leader in rare diseases and as a trustworthy partner for stakeholders in healthcare by taking care of patients.”



Kristof Boogaerts, Johnson & Johnson MedTech: “One of our biggest celebrations will be the positive impact we had on our patients, our customers, and our employees. We

helped our customers with our products, services, and end-to-end solutions to ensure patient treatment and better clinical outcomes.”



Dominique Ziegelmayr, DatamedIQ: “We worked together with our customers and constantly challenged the accuracy of our data, which quickly led us to an outstanding data quality.

We are proud that our customers are increasing the usage of our data.”



Dr. Markus Leyck Dieken, Gematik: “With well-structured records, healthcare access will improve for everyone. The company introduced the electronic record two years ago and realized that a patient-driven health record was the best option. The government is thrilled that we are offering something convincing to the Nordics and Germany.”



Dr. Amina Elsner, Ferrer Germany: “As the German affiliate expands, its primary focus is reinvesting in social and environmental initiatives. By prioritizing these critical areas, we seek to create a sustainable business model that generates economic benefits so that can then be reinvested positively to society and the environment. This strategy stems from a keen awareness of the increasing size and volume of the affiliate and the recognition of the responsibility that comes with such growth.”



Dr. Christian Hauer, Fresenius Kabi MedTech: “During the pandemic days, we learned more than ever before how important it is to have a global production footprint that allows us to be agile and flexible and react to customer demands and unforeseen shortages in the market.”



Alexander Boxler, GHA - German Health Alliance: “I want Germany to adapt quickly to the challenges we are facing and have favorable conditions for the further development of products, especially regarding regulation and data usage, so that our companies can grow, improve, and develop solutions and help people with these solutions.

At a global level, it is crucial for health to be viewed not only as a cost but also as an investment, leading to more investment in health and preparedness for the next inevitable pandemic.”



Victoria Grandsoult - Virchow Foundation for Global Health: “We are thrilled that we were founded a year and a half ago and to have achieved so much within a short amount of time. As a team, for all our partners and the upcoming winners involved, it is exciting to see the development and evolution of the organization. We will be much wiser this year from the lessons learned last year from an operational perspective.”

Thank you.



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