

E-HEALTH IN GERMANY

Market Study

Opportunities for the Dutch Life Sciences & Health sector in Germany

DEM DEUTSCHEN VOLK

PREFACE



WHY THIS REPORT?

This report was written by Task Force Health Care and commissioned by the Netherlands Business Support Office and the Dutch Enterprise Agency in order to provide a clear overview of the digitalisation of the German healthcare sector and system.

Over the past few years, several events, activities and efforts have been made to improve bilateral relations between Germany and The Netherlands in the field of ehealth and elderly care. At the centre of this has been the visit to Rhineland Palatinate and Saarland with King Willem Alexander, Queen Máxima and Deputy Prime Minister, Minister of Health, Welfare and Sport Hugo de Jonge in October of 2018. Apart from that, the Dutch Life Sciences & Health community has been visiting the DMEA (formerly ConhIT) every year and organized the Dutch Digital Health Night at the Netherlands Embassy during that week. Furthermore, several visits from Germany to The Netherlands have taken place in order to show key German stakeholders the strengths and inventiveness of the Dutch healthcare sector.

As ehealth is opening up in Germany, this report provides the background for sustained and intensified efforts to connect with the German market and find ways to cooperate and collaborate. The goal is to help Dutch SMEs, startups, knowledge institutes, healthcare providers understand the German market, find a right approach to enter it, and identify the various opportunities that exist. With this report as a cornerstone and starting point, a programmatic approach will be set up in order to intensify and deepen the ways the Dutch ehealth and elderly care sector interacts with Germany.

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SUMMARY OPPORTUNITIES AND CHALLENGES FOR THE DUTCH EHEALTH SECTOR IN GERMANY



OPPORTUNITIES

- ✓ Regulation on Telemedicine is loosening, opening up the market
- ✓ The Netherlands is well-known to be at the forefront of eHealth innovations and technology adoption (HIMSS Europe, 2018)
- ✓ Focus on Ambient Assisted Living (AAL)
- ✓ Frontrunning University Medical Centers and Private hospital groups invest in digitalisation
- ✓ Progressive health insurers (Krankenkassen) invest in electronic patient files
- ✓ Minister Jens Spahn is pushing for increased ehealth reimbursement and more investments in digitalisation

CHALLENGES

- ✓ Few hospitals have a digitalisation strategy
- ✓ The IT/eHealth budget of hospitals is falling short
- ✓ Difficult to get eHealth solutions reimbursed by healthcare insurers
- ✓ Germans tend to deal with people they know and require long term commitment
- ✓ Due to Germany's history, privacy and data protection are strict and restrictive



1 INTRODUCTION GERMAN HEALTHCARE SYSTEM

The German health system has a complex governance structure, with the federal government only defining the legal framework. All regulatory detail is specified in directives that are issued by the Federal Joint Committee, the highest self-governing decision-making body in the country. The Federal Joint Committee is comprised of representatives from associations of sickness funds, physicians, hospitals, and three independent members. There are also patient representatives who do not have voting rights. The Federal Joint Committee is responsible for decisions on SHI benefits, reimbursement systems, and quality assurance (OECD, 2017). The states (Bundesländer) of Germany supervise the self-governing bodies at the state level, and are responsible for hospital planning and investments, and medical education, see Figure 1 (OECD, 2017).

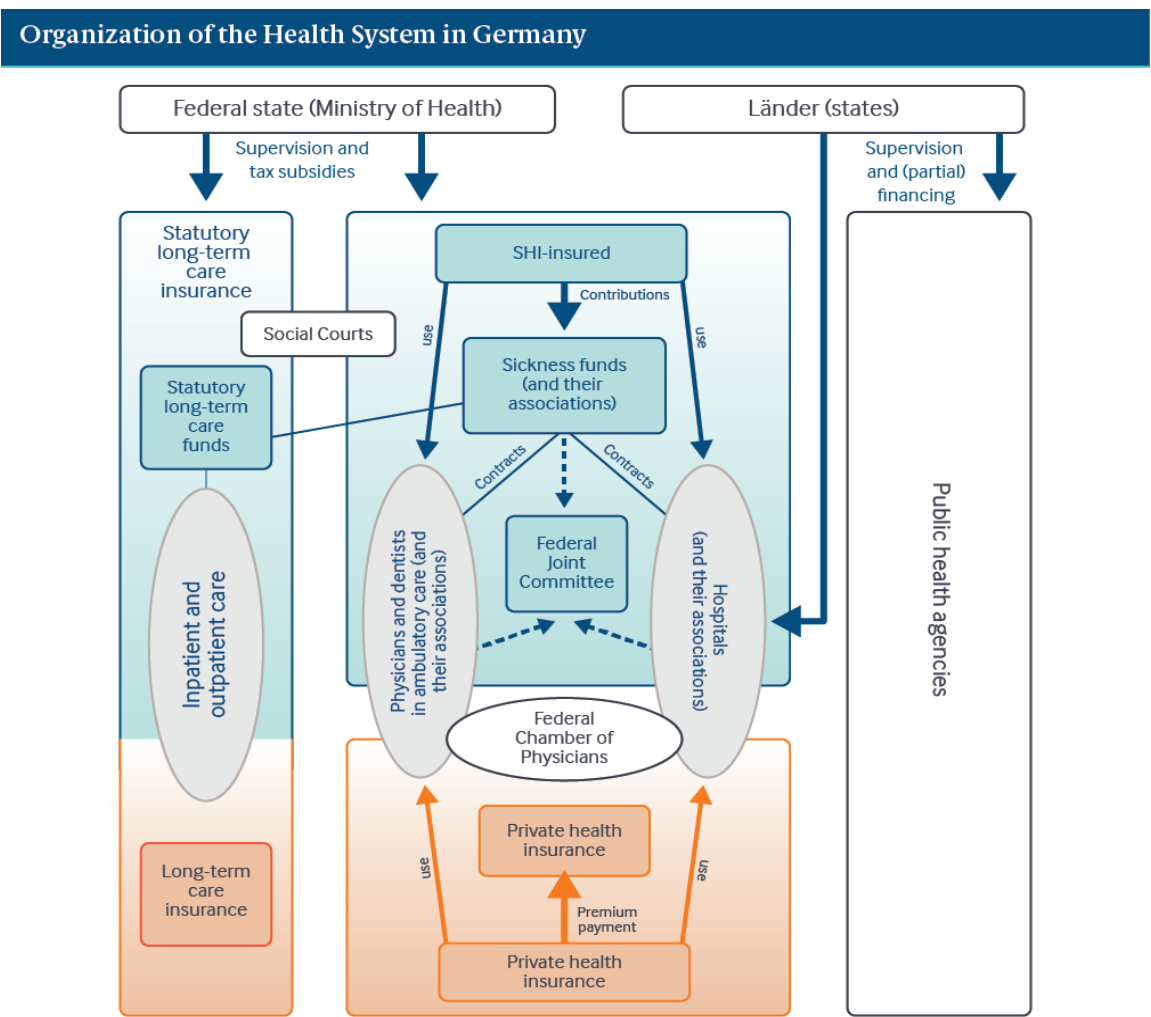


Figure 1: Organization of the German Health System (Commonwealth Fund, 2014)

Germany’s health expenditure is amongst the highest in the EU, with total health expenditure amounting to 11.3% of GDP. This is higher than the EU average of 9.6% (see Figure 2). In 2017, Germany’s per capita health expenditure was the second highest in the EU, standing at EUR 4 160. This is roughly 66.7% higher than the EU average (see Figure 3). Per capita expenditure between the 2005-2017 period also increased more rapidly compared to the EU average. Germany’s high health expenditure figures are predominantly related to public expenditure, with 85% of total health expenditure being public. This is the highest share in the EU (see Figure 4).

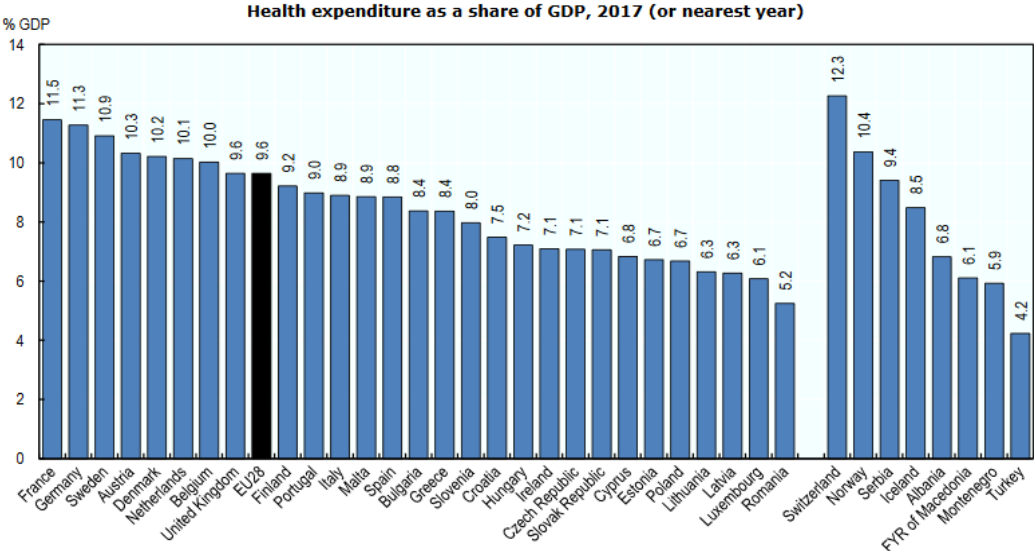


Figure 2: Health Expenditures as share of GDP (Source: OECD Health Statistics 2018; Eurostat Database; WHO Global Health Expenditure Database)

Germany’s Social Health Insurance (SHI) system was first established in 1883, making it the oldest social health insurance system in the world. The SHI is a multi-payer system with a high reliance on self-governing structures for regulation. Unusually, there is a co-existence of Social Health Insurance (SHI) and substitutive Private Health Insurance (PHI) for financing (OECD, 2017).

The combination of SHI and PHI means that Germany has near universal health care coverage. Health insurance is mandatory, and coverage is close to being universal. There are 113 sickness funds who provide SHI to 88% of the population, and finance roughly 58% of total health expenditure. Employees who earn less than a threshold amount (EUR 54 900 per year in 2015) are automatically insured by SHI. Those who earn above this threshold as well as self-employed individuals and civil servants can choose to make use of substitutive PHI or stay under SHI coverage. PHI provides coverage to approximately 10% of the German population, and the remaining 2% are covered under other special schemes.

SHI contributions are wage-related and roughly the same across the different sickness funds. The revenue generated through SHI is pooled, and together with tax subsidies from the central health fund are re-allocated to sickness funds based on risk equalisation schemes. In terms of payments, sickness funds pay for ambulatory (out-patient) care through a global budget that is paid to regional associations of SHI physicians. Individual physicians are paid via fee-for-service within practice-based budgets and unbudgeted for certain services. Inpatient services are reimbursed through diagnosis-related group-based payments. See Annex 2 for an overview of Public (gesetzlich) healthcare insurance companies (GKV).

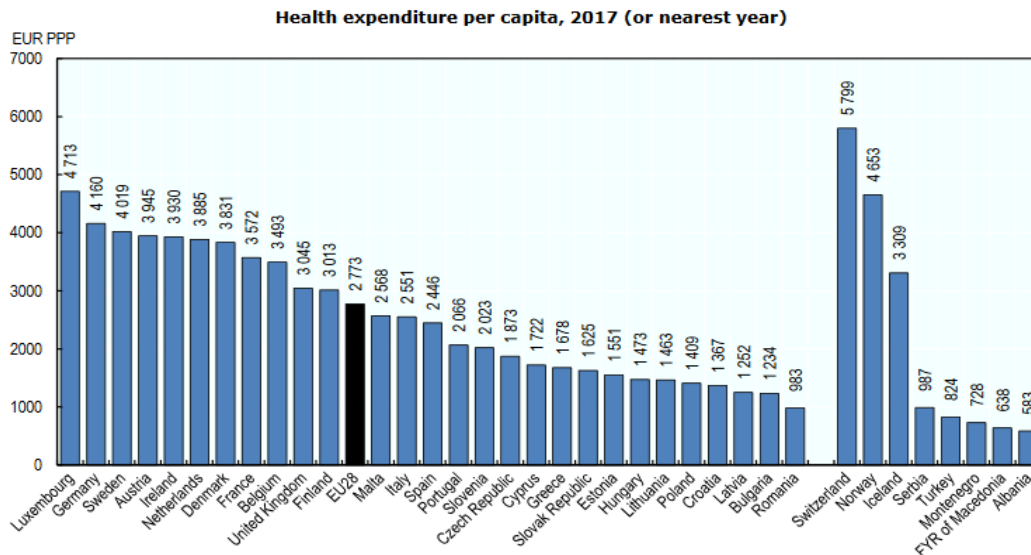


Figure 3: Health Expenditure per Capita
 Source: OECD Health Statistics 2018; Eurostat Database; WHO Global Health Expenditure Database

PHI works quite differently in terms of contributions and payments. An individual's contributions depend on individual health risk. Provider payment by PHI are higher than by SHI. This difference in payment, in particular for ambulatory care, gives rise to equity concerns. See Annex 4 for an overview of Private healthcare insurance companies (PKV).

Prevention and long-term care are two central focal points of German health policy. Prevention of lifestyle related diseases, which are often chronic, remains the biggest priority in terms of public health (BGM, 2016; 2018). In line with these efforts, the Preventative Health Care Act aims to improve health literacy of German citizens and empower them to make healthier lifestyle choices. The German government has launched multiple campaigns in order to promote healthier behaviour amongst the population. This includes the 3000 steps programme which aims to tackle obesity. The German government has also developed strategic partnerships with day-care centres, schools, and employers in order to further educate the German population on healthier lifestyles.

Besides prevention, long-term care is a focal point in German public health policy. In its First Acts to Strengthen Long-Term Care, the German government increased funding of long-term care by 20%.

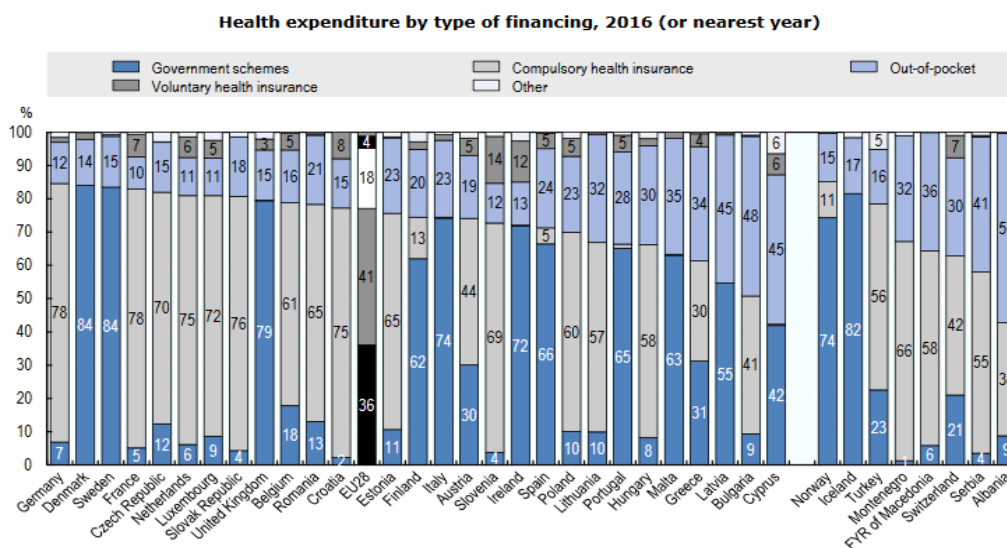


Figure 4: Health Expenditure by type of financing (Source: OECD Health Statistics 2018; Eurostat Database; WHO Global Health Expenditure Database)



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With 58% of the market financed by state health insurers and only 10% from private health insurance, reimbursement is quite clearly defined, with the German Technical Aids Register responsible for reimbursement in outpatient care.

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Furthermore, Germany's long-term care insurance scheme was made more adaptable to individual care needs, increasing possibilities to age (healthily) at home. These investments have made it possible for elderly Germans to install age-related improvements in their homes. In the Second Act, Germany offered additional support to carers and relatives of long-term care receivers. A major reform was the expansion of the definition of long-term care from three to five care grades, freeing up support options for caregivers.

The German government has been pro-active in increasing patient rights and participation in the decision-making processes. A milestone here is the entitlement of patients to a second opinion prior to certain treatments and surgeries.

2 DEVELOPMENTS AND TRENDS IN THE GERMAN EHEALTH SECTOR

Germany's eHealth Law came into effect in 2015 and delivered a roadmap for the implementation of digital applications for the health care system. The law has delivered a framework and identified objectives which have spurred the growth of the E-Health sector substantially. Within this legislation, the German government specifically stated that all medical practices and hospitals are expected to be connected to telematic infrastructure by the end of 2018 (Gohlisch, 2018). These changes in eHealth regulation transformed the sector into one of the most exciting areas for start-ups in Germany. However, implementation remained slow due to political differences and complicated decision-making processes.

Telemedicine is growing increasingly prominent in the German health sector. Historically, healthcare policies stated that telemedicine may only be used for follow-up appointments with medical practitioners. However, policies are being reformed and there is now a movement whereby patients are scheduling virtual consultations with their doctors. Further relaxation of telemedicine policy will enable in-house doctors to receive numerous clients, since they will be able to rely on telecommunication to engage their patients in consultations and analyse their health status (Dr. Hempel Digital Health Network, 2018) (Gohlisch, 2018). These developments present opportunities for tackling some of Germany's most prominent health challenges, such as the use of eHealth technologies in elderly care, and reducing incidence of chronic disease through health and wellness apps (GTAI, 2019)(Vivy, 2018).

Relaxation of the telemedicine policy is part of an effort to support those who are less mobile and thus unable to attend doctors' appointments in person. The technical requirements have been determined by the National Association of Statutory Health Insurance Physicians (KBV) and the National Association of Statutory Health Insurance Funds (GKV) and relate to the security and protection of personal data. Although an extensive range of telemedicine services has been proposed, there is uncertainty in terms of what will be approved (Gohlisch, 2018). In the meantime, an advisory centre for telemedicine has been founded in Hesse in order to advise physicians with regards to digital health projects, especially concerning data protection (Gohlisch, 2018).

During the 2019 German Congress of Physicians the prohibition on remote treatment may be revised. Current legislation indicates that the initial clinical interview needs to be conducted in person. This legislation excludes many cases whereby online consultation would prove useful and has thus resulted in the German telemedicine market to be somewhat unattractive to start-ups. Once the remote treatment prohibition is revised, the telemedicine market will provide a potential market for Dutch companies active in that field. There could potentially be a top generic provider or several niche providers.

In addition to advances in telemedicine, further developments in Germans eHealth sector are inspiring change. For example, revisions to the German electronic health insurance card (also known as the "E-Health Card") has sparked numerous advancements in the e-health sector. In 2019, the electronic health insurance card must be capable of gathering, processing and using data concerning medical findings, diagnoses and treatment measures. Patients will also be permitted to upload their own data via wearable devices and transfer this data to physicians (Gohlisch, 2018). Health professionals can access data on the E-Health cards by meeting certain requirements (Taylor Wessing, 2016)

The changes in electronic health insurance cards have enabled efficiencies elsewhere, such as in electronic medication plans. In Germany medication plans are used such that patients who need to take three or more different types of medications can avoid dangerous drug interactions. Patients can request paper-based medication plans from their physician or pharmacist. Since 2018, medication data is being collected in a standardised way such that it can be stored on a patient's electronic health insurance card. In 2019, all physicians and pharmacists can thus update medication plans electronically, making the system safer and more efficient. Furthermore, should the patient request it, emergency relevant medical information, such as pre-existing illnesses, can be stored on the electronic health insurance card. Medical practices are obliged to have the necessary technical equipment installed for automatic online validation and the updating of patient health insurance data. This is in place in order to keep data up-to-date and prevent benefit fraud (Gohlisch, 2018).

Parallel to these activities and in an effort to guide the development of the eHealth sector, the German government launched Vesta, the directory for interoperability. In the future, new digital health applications will only be able to achieve coverage by statutory health insurance if they meet the interoperability requirements listed.

The German government is encouraging the advancement of eHealth in Germany on many levels. New Health Minister, Jens Spahn, has repeatedly stated that he is in favour of the development of trustworthy digital infrastructure, expansion of telemedicine, increased health services research, and more market transparency regarding health related apps. Interestingly, Spahn has also co-authored a book which advocates for the digitization of health services, making his tenure and policy decisions as Health Minister especially interesting for the eHealth sector. Spahn has been known to declare that *"Start-ups provide the products, politics takes care of the infrastructure"*. Thus, the Federal Ministry of Health is set to publish a set of criteria to assess health apps which will drastically shorten the time to market (Gohlisch, 2018).

TOP 5 EHEALTH PRIORITIES & CHALLENGES IN GERMANY

PRIORITIES



Electronic Medical Record implementation



Use of Mobile Devices



IT Security



Telemedicine



Integration and use of patient-generated data

CHALLENGES



Finding and hiring skilled employees



Funding



Interoperability Standards



IT Security



Legislation Issues (outside of GDPR)

A rapidly ageing society leads to a growing demand for home care

With a median age of 45.9 years, the German population has one of the highest median ages when compared to other countries in the European Union, with the average median age in the European Union being 42.8 years. The median age is only expected to rise as fertility rates remain low in Germany. The current rate of population aging in Germany is slowing economic growth, and this impact is expected to increase when the baby boom generation reaches retirement age. An aging population places pressure on health systems as the elderly require special healthcare services. A population that is aging increases the burden of chronic diseases and reduces the overall mobility and vitality of the nation. It is expected that by 2060, 30,9 percent of the entire German population is over 65 years of age – or close to every third person. (Hoffmann et al., 2017) Thus, Germany will need to invest additional funds in long-term care facilities (Dr. Hempel Digital Health Network, 2018).

Germany's key health challenges revolve around the rapidly aging population and many rural areas. The changing demographic comes with an increased demand in the number of specialised geriatric health services available. Existing geriatric health services need to be expanded and adapted. The German government is prioritising health challenges of the elderly and is planning on growing their assisted living facilities (Dr. Hempel Digital Health Network, 2018) (see Annex 6 for an overview of the top 30 elderly care groups). See Annex 7 for an overview of the largest Elderly Care groups in Germany.

Generally speaking the German elderly prefer to age at home for as long as is feasible. Long-term care facilities do exist and are growing – but the government and a large portion of the German demographic see these facilities as the last resort. There is thus opportunity and growth in the home care market (Dr. Hempel Digital Health Network, 2018). This is most visible when we look at the Ambient and Assisted Living (AAL) developments, with many companies, (care)organisation and knowledge institutes investing in new projects and facilities. Examples of this are the [AAL-Netzwerk Saar e.V.](#) and projects by the [Fraunhofer-Allianz Ambient Assisted Living](#).



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An aging population places pressure on health systems as the elderly require special healthcare services

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Germany has a shortage of medical staff (Schermuly, 2015). The most acute shortages are specialist doctors and nurses, mainly in long-term care. At the moment, 1,1 million caregivers are employed in German elderly care homes and services, 72 percent of them work in part time – making about 760.000 FTE. Though this is already a large amount, there are still around 25.000 – 30.000 vacancies in long-term care and in hospitals, this number is estimated at 80.000 caregivers (BMG, 2018; Der Spiegel, 2018). The shortage in the medical labour market has attracted many foreign doctors, for example from Hungary (Woods, 2018). However, it is estimated that the amount of extra staff needed in 2030 for just long-term care is between 263.000 FTE and 500.000 FTE (Rothgang et al., 2012). The German government is looking to create a more durable and stable stream of human capital by increasing the attractiveness of medical professions.

The Minister for Family Affairs, Senior Citizens, Women and Youth as well as the Minister of Labor and Social Affairs are making a joint effort to significantly improve the day-to-day work and working conditions of caregivers and to relieve the burden on nurses and strengthen training in the nursing sector (Tinyakov, 2018). To this end, a new Care Staff Strengthening Act was signed in 2018, aimed at increasing the attractiveness of care professions and at improving staffing for care facilities. One powerful measure to accomplish this is in the creation of more budget for health facilities, in the hiring of nurses and raising salaries. In other words, investments are made in order to increase the labour force to ensure sufficient nurses, doctors and technicians. On the other hand, investments are made in lowering the administrative burden of healthcare professionals so that they can do their work more efficiently – this goes hand in hand with the developments in telemedicine. Dutch companies offering such solutions might work directly (via their partner) with hospitals, collaborate with healthcare insurers, or with local or regional healthcare authorities in order to take advantage of these developments. All these organisations have an interest in improving the working conditions in a way that is cost effective – it depends on the individual business model of Dutch businesses which may be the right approach.

Electronic Health Records

Germany has been trying to accomplish an electronic health card - or health record - since 2005, when the Gematik (Gesellschaft für Telematikanwendungen der Gesundheitskarte mbH) was founded. The parties involved in this are the Bundesärztekammer (BÄK), the Bundeszahnärztekammer (BZÄK), the Deutsche Apothekerverband (DAV), the Deutsche Krankenhausgesellschaft (DKG), the Spitzenverband der Gesetzlichen Krankenversicherungen (GKV-SV), the Kassenärztliche Bundesvereinigung (KBV) and the Kassenzahnärztliche Bundesvereinigung (KZBV). The GKV Spitzenverband – the management of the public health insurance companies – has held 50% of the ownership of the Gematik.

However, the Gematik has been the subject of significant criticism as the decision-making was slow due to the composition of the consortium and how it operates: several of the parties could not agree on sometimes even the smallest details. On top of that, it has been argued that decision-making is cumbersome because the consortium is self-governed. This has halted or delayed the progress of Germany setting the right standards and providing the “digital highway” for the other digital infrastructure to work from. For this reason, German Minister of Health Jens Spahn is taking a majority interest in the Gematik, which would allow decision-making to be sped up in order to create a secure health data network.

This is more important than ever, as the German Appointment Service and Supply Act, which comes into effect in early 2019, requires health funds to offer policyholders electronic health records (EHRs) by 1 January 2021 at the latest (see Text Box). The major health insurance companies, both public and private are currently working on providing their policyholders with these electronic health records.

Interesting for Dutch eHealth companies is that these insurance companies also see their patient files as a way to compete with their counterparts and as a way to increase the relationship with the policyholders. This can be witnessed because currently the insurance companies are looking for applications and tools that can enrich their platforms and can be added to their package of services. However, these services are firstly paid from the marketing budget instead of the service or reimbursement budget – indicating that it is indeed a way to attract new policyholders or retain current ones. There are already examples of Dutch eHealth companies which have successfully embedded their solutions within these platforms. The challenge and opportunity is to move away from the ‘marketing budget’ and become an integrated solution within the reimbursement or standard budget of these insurers.

3 HOSPITAL INFORMATION SYSTEMS & DIGITALISATION

Germany has 1942 hospitals, with 8.1 hospital beds per 1000 people (Statista, 2019)(Welt, 2019). There are 4.7 doctors per 1000 people, and 7.9 nurses per 1000 people (2016 – BMI). See annex 4 for an overview of the largest private hospital group; annex 5 for an overview of largest hospitals (public & private); and annex 6 for an overview of University Medical Centres in Germany.

The rate of digitalisation has long been lagging mainly due to the developments mentioned prior. However, currently Germany is making pace in bridging the gap with other North-western European countries- though it has still a way to go and available budget remains a challenge.

The percentage of the budget used for IT in German hospitals is significantly lower than in The Netherlands. 67 percent of German hospitals spend between 1-3 percent of their budget on IT, whereas 63 percent of Dutch hospitals spend between 4-9 percent on IT (see figure 5).

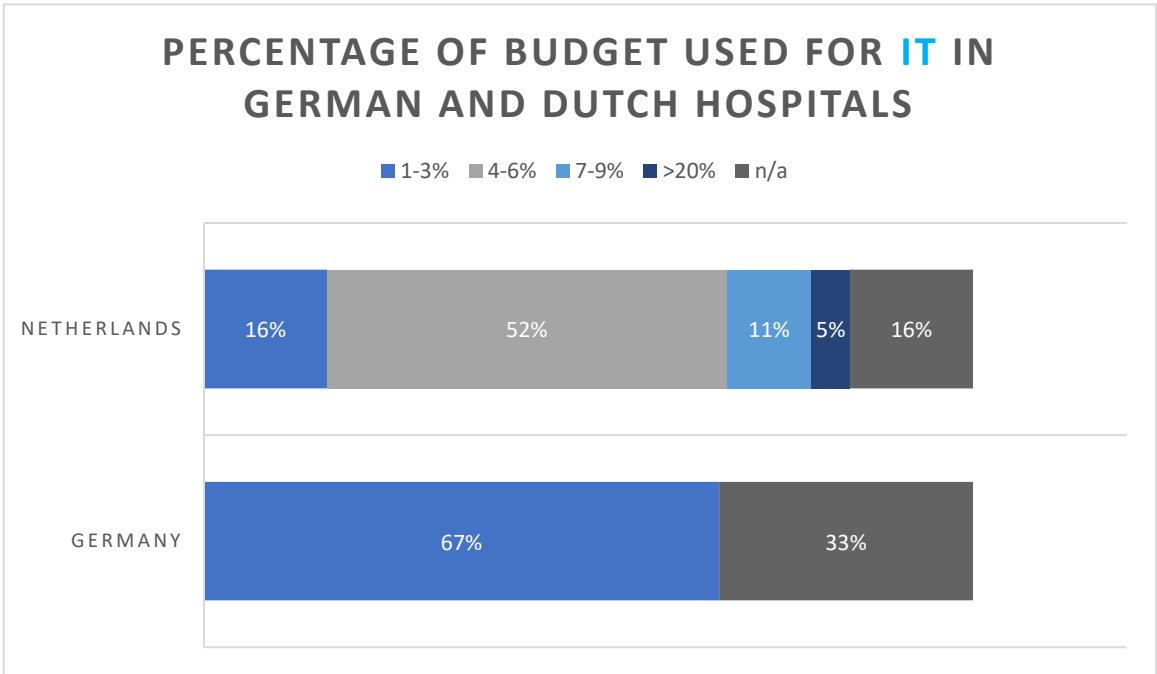


Figure 5: Comparison between IT budget in German and Dutch hospitals (source: Adapted from Deloitte, 2018)

Five percent of Dutch hospitals even spend more than 20 percent of their budget on IT. Two-thirds of German hospitals indicate that they do not have a sufficient IT budget (HIMMS), only 42 percent has a digitalisation strategy and 83 percent of the hospital directors see the quality and maturity of digitalisation in their hospital as inadequate (McKinsey & Company, 2018).

Looking at the availability of data in German healthcare system, a similar issue can be identified. Only 64 percent of German patient data is digitalised. While at face value, that seems like a decent number, when put into perspective of neighbouring countries, the extent of the issue becomes clear. Italy (79,5%), NL (89,4%), Nordics (87,7%), Spain (80,8%) and Switzerland (68,9%) have significantly more data digitised. Only the UK (61,5%) has a lower percentage of digitised patient data than Germany.

However, it would be an oversimplification to conclude based on these numbers that Germany is not working on digitalising its hospitals, as many hospitals are conducting various digitalisation pilots in a

wide array of areas in the hospitals to validate the quality, efficiency and efficacy. If proven, these pilots will be further rolled out (McKinsey & Company, 2018).

When looking at which areas in the hospital are receiving the most attention in terms of digitalisation, a clear distinction can be made. Implementation of the Electronic patient file has top priority, together with software support for subscriptions and patient related processes (see figure 6).

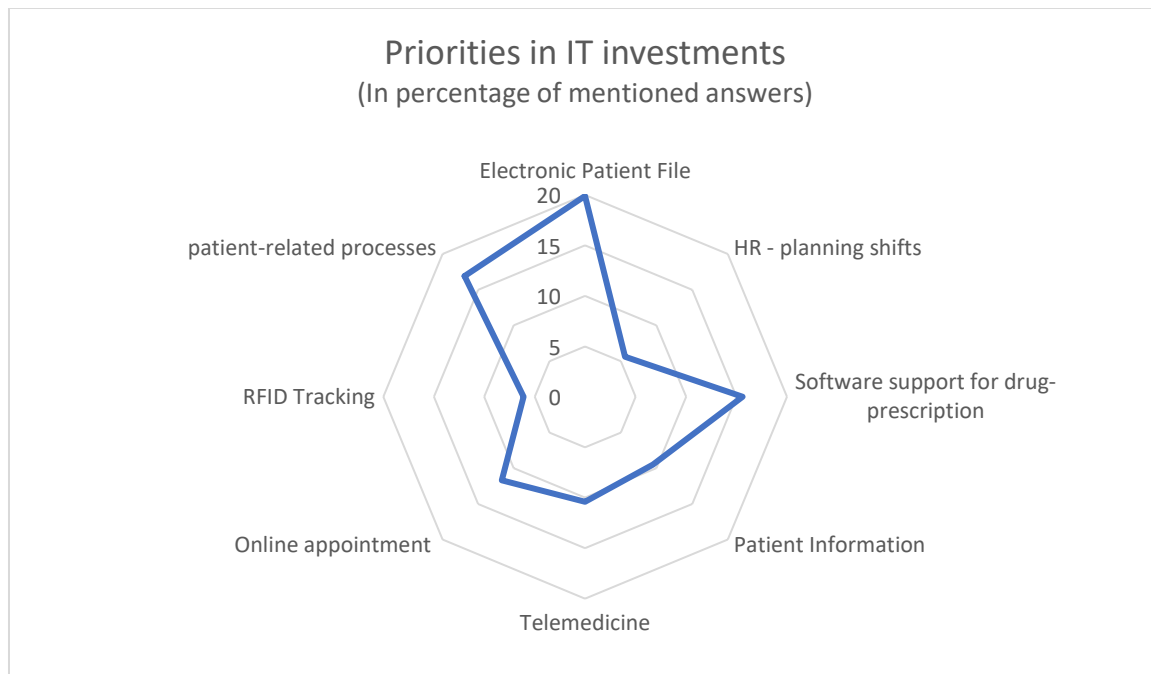


Figure 6: Priorities for IT investments in German Hospitals (Source: adapted from McKinsey & Company, 2018)

Large private hospital groups and other private healthcare providers are investing in electronic health record services that can integrate with their hospital information system to set them apart from public hospitals. These groups, like Sana, Asklepios and Helios (see Annex 5 for an overview of the largest private hospital groups) are investing in electronic health records, additional services for their patients and ways to improve efficiency. This is in contrast to public hospitals (outside of university hospitals) which have the problem that their highly modest IT budget does not allow them to make investments unless it is proven that a digital solution can save cost while maintaining or increasing quality. The issue is of course that most solutions are expensive to implement and do not offer a quick return on investment; rather, they might require years to lead to cost savings. This issue will be partially solved by some of the new legislation allowing for quicker paths to reimbursement of new and digital solutions. However, it is still a potential barrier.

In contrast, private hospital group – some of which are active Europe-wide (like Helios, which is owned by Fresenius) – and university hospitals have the ability to invest more readily or run pilots to determine the value of a solution. Dutch companies wanting to do business with these private hospital groups and university hospitals have to be aware they need to have a proven, clear and strong proposition as these organisations receive many offers and pitches. See annex 8 for an overview of the largest Hospital Information System providers in Germany.

Text Box: TK Safe, Vivy & DiGeN

Together with IBM, Die Techniker – Germany’s largest single entity healthcare insurer with 10,4 million insured– developed the electronic patient record TK Safe. TK has invested in the development of this electronic patient file as a service to its insured, who can use it free of charge. All of their healthcare data will be securely stored in the app and can be accessed by patient.

TK Safe falls in the same category as Vivy which was launched in 2018. The app, acting as an electronic patient record is currently partnered with a range of state and private insurance schemes, including Allianz (70% owner), Barmenia, DAK-Gesundheit, IKK classic, IKK Nord, IKK Südwest as well as Audi BKK, BAHN-BKK, BKK VBU, BKK Bertelsmann, BKK Diakonie, BKK Dürkopp Adler, BKK Gildemeister, Heimat Krankenkasse, BKK Melitta Plus, mhplus, BKK Pronova, and BKK Stadt Augsburg. The app has a wide range of functionality. Most notably, it allows patients to have access to all their medical records and documents in one place, shares important information in cases of emergency, provides digital vaccination certificates, cross-checks one’s medication plan for side-effects, provides one with information on one’s diet and activity levels through wearable devices, and is able to connect patients to their current or new physicians.

The last in the range of new developments initiated by healthcare insurers is the DiGeN patient file pilot by healthcare insurer AOK. DiGeN is currently being piloted in Mecklenburg – Vorpommern, with Sana Kliniken AG (see Annex 5) and Vivantes. The patient file has similar modalities of TK Safe and Vivy and is meant to be an open network, making it possible for other actors and partners to start using the portal at a later stage without much difficulty.

A study by McKinsey & Company states that Germany can save 34 billion euro annually as a result of digital solutions (see figure 7). Therefore the potential of the German market is significant. Savings are highest for digital solutions to allow: unified electronic health records and the exchange of that information (EUR 6,4bn), teleconsultations (EUR 4,4bn), nurses to have more tools that provide them live insights into their patients (EUR 2,1bn), dashboards that measure quality and efficiency performance (EUR 2bn), and tools for people with a chronic diseases to manage their disease better (EUR 2bn). This poses interesting opportunities for Dutch companies who have expertise, experience, products or services in these fields and are ready for the market. Potential ways to approach these areas where savings can be achieved is to work via individual healthcare providers, to link to the newly formed electronic health files currently being rolled out by healthcare insurers, or find an entrance via group purchasing organisations.

26 digital solutions in German healthcare can deliver up to EUR 34 billion in savings.

Estimated potential value, EUR billions

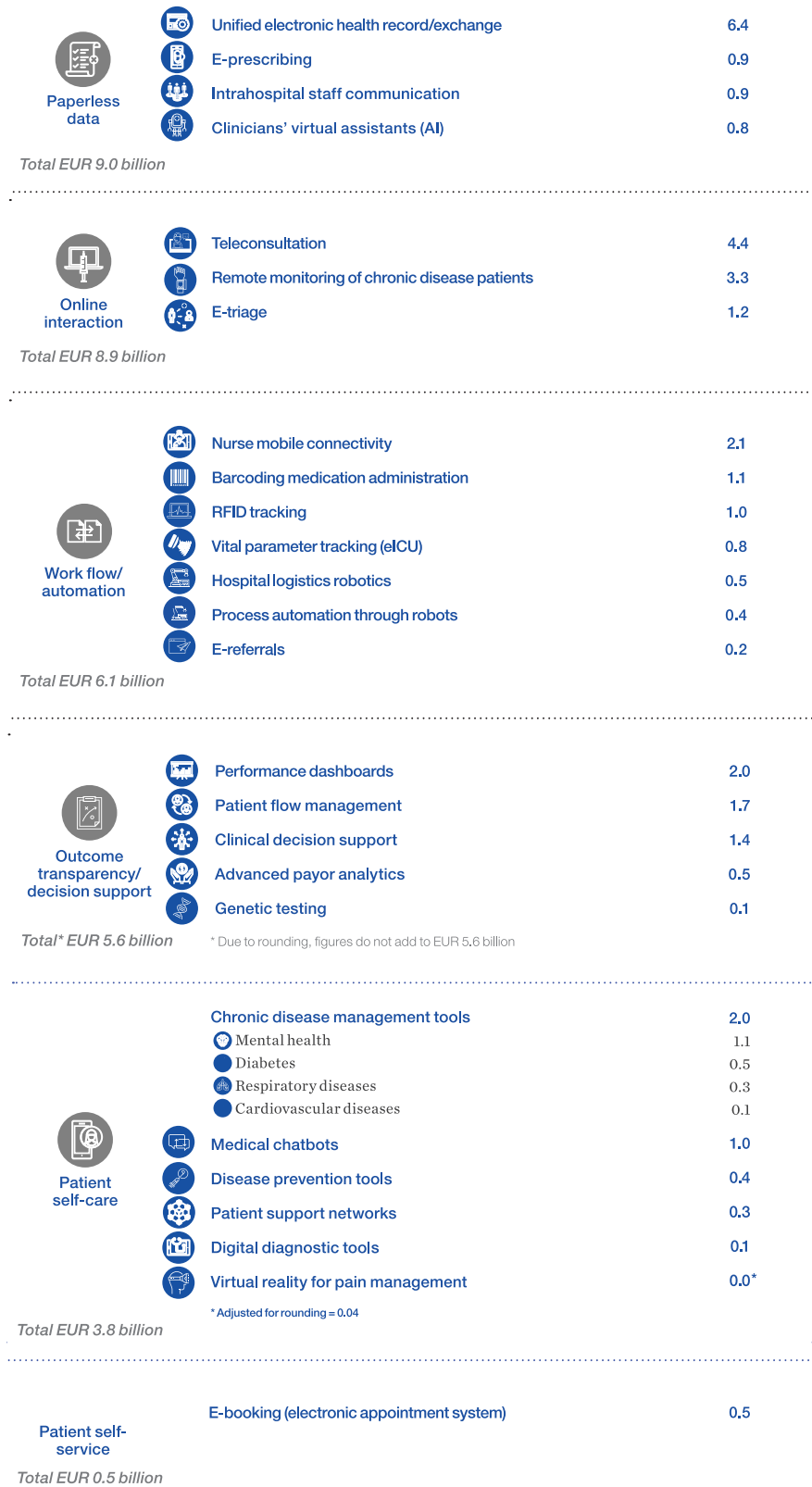


Figure 7: Potential areas of savings in healthcare due to digitalisation (Source: McKinsey & Company, 2018)

Privacy and data security

Digital health companies active in Germany will have most likely heard these words many times: *“What about the “Datenschutz” and “Privacy” of your product?”*.

Germany is known to have strong demands and regulations surrounding anything involving personal (or patient) data and privacy – probably the highest in Europe and often superseding or complicating the standards set by the European Union. It is therefore no exception to hear companies talk about Germany requiring “GDPR-plus”. In other words, the new GDPR standards are for many companies already posing a challenge, in Germany, additional, different or higher standards might be in place depending on the product or service in place. Companies wanting to do business in Germany should have their paperwork in order and should check if and how they are affected by the new German Privacy Act (BDSG-new) which came into effect in May of 2018 (together with the GDPR). It is understood that these strict regulations regarding data and privacy are a result of the way centralised data and national registries were used under the Third Reich as a way to persecute Jews and other enemies of the state and a way for the government to keep an eye on its citizens. This has left deep marks on German society that are still present and come to expression in everyday practices such as a preference to pay with cash money instead of by credit – or debit -card.

Text Box: English Version of the BDSG-new Act

An English version of the new German Privacy Act can be found here: https://www.gesetze-im-internet.de/englisch_bdsg/englisch_bdsg.pdf

Even though legislation is strict in Germany, especially on the front of data use, processing and storing, industry representatives such as BITKOM and BVITG are working with the government to make sure these regulations do not hinder innovation or implementation of new technology and solutions.

4 DOING BUSINESS IN THE GERMAN EHEALTH MARKET

The German healthcare market is highly competitive and comes with challenges in reimbursement. Known barriers in the German eHealth sphere include minimal reimbursement in terms of eHealth applications and solutions, and a lack of IT budget in many German hospitals. Currently, only a few hundred of the 379 000 physicians in Germany offer online consultations. This is primarily due to the fact that insurance companies do not reimburse enough to make the service profitable (Gohlisch, 2018). However, minister for health Jens Spahn has announced that he wants to improve the degree, and speed of reimbursement of ehealth solutions (Frankfurter Allgemeine, 2019). Other signals that show that Germany is making more investments in the eHealth infrastructure is the recent news that federal state Baden Württemberg is investing an additional ten million euro in the digitalisation of hospitals in 2019 (Baden Württemberg, 2019). Though it will require patience of Dutch companies active in the sector, these are all signals that the German system is making investments and increasing its efforts to digitalise the healthcare sector; therefore, investing in the right network or partner is needed to move along with the developments.

The market is known to be widely distributed, with strong existing relationships between suppliers and care providers. This means that even the most outstanding new products will face tough competition. With 58% of the market financed by state health insurers and only 10% from private health insurance, reimbursement is quite clearly defined, with the German Technical Aids Register responsible for reimbursement in outpatient care. Unfortunately, in many cases, new and innovative products do not match existing product groups, and thus alternative channels need to be developed. In order to do this, the GKV Spitzenverband has to reward a new number to a treatment or solution for it to be reimbursed. This can take up to two years and requires extensive documentation on safety, effectiveness and efficiency (see below for some guiding questions).

Text Box: What is an Impressum?

Ever wondered when visiting a German website why it always has a tab called the Impressum?

The Impressum is a mandatory page that is required on all websites published in German speaking countries – also if the URL does not end in “.de”. It is a page that discloses information about the publisher of that website and is comparable to the Imprint. It was done in an aim to counter spam, data protection and illegal content and conduct on the Internet by making page owners disclose who they are.

You need an Impressum on all commercial websites in Germany, Austria and Switzerland, but also if your business/website has a social media page than it too must include an Impressum. The main points that are required on an Impressum page include: Publishers name; Address; Telephone number or Email; Trade registry number (KVK); VAT number (BTW).

Other rules about the Impressum Page: It must be called “Impressum” – imprint, privacy, contact or even Webimpressum are not acceptable; It should be accessible from within 2 links from the homepage.

In terms of business to business opportunities, there tends to be a focus on hospitals, doctor's offices, and pharmacies. The decision-making processes in hospitals vary greatly from hospital to hospital, especially when it comes to capital goods. Different hospitals have different decision-making bodies, from the chief physician to the managing director to the IT, medical technology or purchasing department – and various combinations thereof. To deepen complexity, doctor's offices are usually difficult to reach with a dispersed sales force.

Investors are beginning to pay attention to the German digital health market, and it is now reasonable to assume that the market will soon begin to accelerate (Gohlisch, 2018). Many of those interested in the German health market are in the realm of mobile applications. However, there have been few success stories since many of these efforts have lacked a sufficient business model. There are however particular approaches that show promise. One of these approaches is financing by statutory and/or private health insurers or the sale of the application to the end users. Another promising possibility is in selling to existing care providers, for instance, providers of emergency call services are a target group for providers of monitoring apps, e.g. wearables (Schwanke, 2017).

Besides the appropriate business model, those wishing to penetrate the German eHealth market should have answers to the following questions, preferably and where possible with supporting data (Schwanke, 2017):

1. What existing process is improved by means of the application?
2. What are the advantages for users in everyday use?
3. How significant are the changes for users?
4. How much effort must be expended for IT administration, data or decision management?

Important to understand is that up until this moment, the German healthcare system has been the laggard for implementation of eHealth solutions, not the lack of a domestic sector. Areas like Berlin, Hamburg, Bayern and Baden Württemberg are hotbeds for digital innovation in healthcare with many start-ups and companies present (see Annex 9). On the other hand, Dutch companies are helped by the Dutch position as one of the frontrunners when it comes to digitalisation in healthcare. The Netherlands consistently ranks in the top 3 countries in Europe as role model by health facilities, government and IT vendors (see figure next page).

So while Dutch companies have a good opportunity due to the notion that they may already be operational in the Dutch (and/or other EU markets), be prepared to face competition and be prepared to go through the process of proving your solution's worth and effect by doing a trial or pilot with a German counterpart (e.g. University Medical Centres).

However, when you can manage this, the potential market that opens up is substantial. For instance, the German eHealth market was estimated to be around three billion euro in 2017 and is growing with a CAGR of about 22 percent (GTAI, 2017). Of that three billion euro, hardware supporting eHealth solutions accounts for 59 percent.

Lastly, German value relationships and expect a commitment from their counterparts. It is thus of great importance to invest in a good network, communicate in German (and have marketing materials in German), and that your company is represented at the important events throughout the year (see Annex 10 for an overview of digital health events in Germany) – the most important being DMEA in Berlin (April) and MEDICA in Düsseldorf (November). Besides that, via www.e-health-com.de, which provides an up-to-date overview of the most important events regarding eHealth in Germany.

Ranking Netherlands in Europe as role model in eHealth (by different organisations)



By Health Facilities in Europe



Estonia



Denmark



By Government Health Authorities in Europe



Denmark



Estonia



By IT Software Vendors in Europe



Estonia



Denmark

(Source: adapted from HIMSS, 2018)

5 CONCLUSIONS AND RECOMMENDATIONS

It is clear that, though Germany has been lagging behind in the digitalisation of its healthcare system, the pendulum is starting to swing in the different direction. With telemedicine legislation loosening, opportunities for Dutch companies with expertise in homecare, tele- and video consultations, disease management apps, personal monitoring systems, and AAL are more concrete than ever. With this comes the added benefit for Dutch companies already active in their home market, that they can use the real life use-cases and practical experience with running their solution to their advantage in a market where competition is fierce. They are further aided by the status of the Dutch healthcare system as one of the frontrunners when it comes to digitalisation.

However, while the laws and regulations are changing or being implemented, this does mean that at time of writing, reimbursement of ehealth solutions and financial means in hospitals to invest in digitalisation are still minimal. In order to be successful, Dutch businesses should focus on the larger hospitals (University medical centres), private hospitals, and healthcare insurers who have funds available to run pilots, invest in validation and can also follow-up on these trials. There are good examples of Dutch companies already active in the German market who have been successful via this route. What German hospitals are particularly interested in, is in ways to properly use, exchange and enrich their patient health records, improve the efficiency and quality of the patient pathway, and decrease the workload – and improve the working environment - of its personnel.

Movement is not only seen at the level of doctors and medical specialists, but also at the level of the Ministry of Health. Minister Jens Spahn is pushing the digitalisation of healthcare by taking a more active role in the creation of the national digital healthcare infrastructure, implementing laws to make the electronic health records operational and pushing the reimbursement of digital solutions for patients and healthcare providers.

These trends show that momentum is being created which provides a good opportunity for Dutch businesses who are willing to invest the time, effort, and resources to pursue this market. Successful SMEs will attest to the point that it takes time for your investments to pay off but that the potential makes it worth it. However, when tackling the German market, the following recommendations should be taken to heart to increase the chance of success.

Recommendation 1: Though the Dutch are overall liked by Germans, doing business with other nationals is still a disadvantage. Therefore it is advised to invest in a good partner (or partners), open a local office or hire German colleagues. Reach out to the NBSO Stuttgart for a Partner Scan, join trade missions with matchmaking and attend trade-expos focused on your part of the market (see Annex 10).

Recommendation 2: The German eHealth market is in flux. Invest in understanding the market and keep an eye on the developments. This can be achieved, if you speak or understand German, by keeping an eye on the sources mentioned in Annex 1, going on trade missions, and visiting conferences and congresses in Germany (see Annex 10).

Recommendation 3: Germans value relationships and it will take time to develop those. Whether you work with a partner or not, it is important to invest in a network and maintain it. As Germany is a country of trade-expos, be sure to visit the most important ones for your part of the market and keep an eye out for trade missions, Health~Holland Pavillions or incoming delegation to and from Germany

organised by the Dutch diplomatic network (Embassy, Consulate General, and NBSOs) in Germany and the Topsector Life Sciences & Health (Health~Holland and Task Force Health Care).

Recommendation 4: invest in robust data, marketing material in German and use-cases. This includes making sure your products or services are in line with national standards and laws. Of course it is important to have your marketing material professionally translated so that not only the text is translated, but also the subtext and context is correct. Germans require more 'hard' evidence because they are more risk-averse than the Dutch are.

BIBLIOGRAPHY

- Bundesministerium für Gesundheit (2018). *Beschäftigte in der Pflege*. Opgehaald van BMG <https://www.bundesgesundheitsministerium.de/themen/pflege/pflegekraefte/beschaefigte.html>
- Baden Württemberg (2019). "Zusätzliche zehn Millionen Euro für Digitalisierung der Krankenhäuser" opgehaald via <https://www.baden-wuerttemberg.de/de/service/presse/pressemitteilung/pid/zusaetzliche-zehn-millionen-euro-fuer-digitalisierung-der-krankenhaeuser/>
- OECD. (2017). *State of Health in the EU Germany: Country Health Profile 2017*. Brussels: OECD Publishing, Paris/European Observatory on Health Systems and Policies.
- Deloitte & Philips. (2018). *Krankenhausinformationssysteme in Deutschland Analyse einer Befragung von Entscheidern in Kliniken sowie von KIS-Anwendern und Patienten*. Opgehaald via: https://www2.deloitte.com/content/dam/Deloitte/de/Documents/life-sciences-health-care/LSHC_Studie_KIS_in_Deutschland_Umfrage_Philips_Deloitte.pdf
- Deloitte. (February, 2018). *IT im Krankenhaus Zwischen neuen Herausforderungen und Chancen*. Opgehaald via: https://www2.deloitte.com/content/dam/Deloitte/de/Documents/life-sciences-health-care/LSHC_IT_im_Krankenhaus_2018.pdf
- Der Spiegel. (2018). *Krankenhäusern fehlen 80.000 Pflegekräfte*. Opgehaald via *der Spiegel*: <https://www.spiegel.de/wirtschaft/soziales/pflege-krankenhaeuser-muessten-stellen-um-22-prozent-aufstocken-a-1213558.html>
- Dr. Hempel Digital Health Network. (2018, June 6). *Big Step! German Medical Association to uplift restrictions on telemedicine*. Opgehaald van Science Service: Dr. Hempel Digital Health Network: <https://www.dr-hempel-network.com/health-policies-in-india/restrictions-on-telemedicine-in-germany/>
- Elke Hoffmann, Laura Romeu Gordo, Sonja Nowossadeck, Julia Simonson and Clemens Tesch-Römer. (2017). *DZA Fact Sheet Living Situations of Older People in Germany*. 3rd updated and revised edition 2017 - Opgehaald via: https://www.dza.de/fileadmin/dza/publications/Fact_Sheet_Lebenssituation_%C3%84lterer_DZA_05-2017_EN.pdf
- Frankfurter Allgemeine, (15-05-2019). "Gesundheit der Deutschen Spahn schlägt die App auf Rezept vor" opgehaald via <https://m.faz.net/aktuell/wirtschaft/gesundheitsminister-spahn-schlaegt-gesundheits-apps-auf-rezept-vor-16188451.amp.html>
- Taylor Wessing. (2016, March). *"E-Health Law" in Germany*. Opgehaald van Synapse Law for Life Science: <https://united-kingdom.taylorwessing.com/synapse/ti-ehealth-law-germany.html>
- Gohlisch, J. (2018, April 26). *Digital Health in Germany — 2018 and beyond* . Opgehaald van Medium: <https://medium.com/@jangohlisch/digital-health-in-germany-2018-and-beyond-2b2df6032688>

- Commonwealth Fund. (2014). Germany: Health System Review. *Health Systems in Transition*, 20.
- GTAI. (2019, February 14). *Germany Trade and Invest*. Opgehaald van E-Health in den Niederlanden stockt auf hohem Niveau: <https://www.gtai.de/GTAI/Navigation/DE/Trade/Maerkte/suche,t=ehealth-in-den-niederlanden-stockt-auf-hohem-niveau,did=2223134.html>
- GTAI. (2017/2018). *Germany Trade and Invest: The Mobile Health Market in Germany*. Opgehaald van https://www.gtai.de/GTAI/Content/EN/Invest/_SharedDocs/Downloads/GTAI/Fact-sheets/Life-sciences/fact-sheet-mobile-health-en.pdf?v=4
- Vivy. (2018, September 17). *Die erste digitale Gesundheitsakte von GKV und PKV startet heute*. Opgehaald van https://www.vivy.com/fileadmin/user_upload/007_presse/180917_Vivy_-_PM_September_final_Webversion.pdf
- McKinsey&Company. (2018, September). Digitalisierung in deutschen Krankenhäusern Healthcare: Eine Chance mit Milliardenpotenzial für das Gesundheitssystem. Opgehaald via https://www.mckinsey.de/~ /media/mckinsey/locations/europe%20and%20middle%20east/deutschland/publikationen/digitalisierung%20chance%20mit%20milliardenpotenzial/update_digitalisierung%20im%20krankenhaus_mckinsey_update%20september%202018.ashx
- Die Techniker. (2019, March 25). *TK-Safe - die elektronische Gesundheitsakte (eGA)*. Opgehaald van Die Techniker: <https://www.tk.de/techniker/unternehmensseiten/elektronische-gesundheitsakte-2028798>
- HIMSS Europe. (2018). *HIMSS Analytics Annual European eHealth Survey 2018*. Opgehaald van HIMSS Europe: <https://www.himss.eu/himss-analytics-annual-european-ehealth-survey-2018#2018-form>
- Welt. (2019, April 9). Opgehaald van <https://www.welt.de/wirtschaft/article186453970/Krankenhaeuser-Kassen-und-Berater-wollen-Hunderte-Kliniken-sterben-lassen.html>: Nur „systemrelevante“ Kliniken sollen überleben
- Rothgang, H., Müller, R. and Unger, R. (2012), Themenreport “Pflege 2030”: Was ist zu erwarten – was ist zu tun?, Gütersloh: Bertelsmann Stiftung.
- Statista. (2019). *Anzahl der Krankenhäuser in Deutschland in den Jahren 2000 bis 2017*. Opgehaald van <https://de.statista.com/statistik/daten/studie/2617/umfrage/anzahl-der-krankenhaeuser-in-deutschland-seit-2000/>
- Schermuly, C. C., Draheim, M., Glasberg, R., Stantchev, V., Tamm, G., Hartmann, M., & Hessel, F. (2015). Human resource crises in German hospitals—an explorative study. opgehaald via: <https://www.ncbi.nlm.nih.gov/pubmed/26016562>
- Schwanke, U. (2017, December 21). *Successfully entering the German healthcare market: an up-to-date guide*. Opgehaald van <https://www.healthcareshapers.com/en/successfully-entering-the-german-healthcare-market-an-up-to-date-guide/>

Tinyakov, S. (2018) The priorities for health and social care policy in Germany. Opgehaald via:
<https://www.openaccessgovernment.org/health-and-social-care-germany/52305/>

Woods, J. (2018) EMIGRATION: THOUSANDS OF HUNGARIAN DOCTORS IN GERMANY. Opgehaald
via: <https://dailynewshungary.com/emigration-thousands-hungarian-doctors-work-germany/>

ANNEX 1: EHEALTH SOURCES TO KEEP AN EYE ON



FEDERAL GOVERNMENT

- [Bundesministerium für Gesundheit und soziale Sicherung \(BMGS\)](#)
- [Bundesinstitut für Arzneimittel und Medizinprodukte \(BfArM\)](#)
- [Bundesbeauftragter für den Datenschutz](#)
- [Bundesamt für Sicherheit in der Informationstechnik \(BSI\)](#)
- [Bundesvereinigung Deutscher Apothekerverbände \(ABDA\)](#)



STATE GOVERNMENT, CHAMBERS

- [Bundesärztekammer](#)
- [Bundeszahnärztekammer](#)
- [Kassenärztliche Bundesvereinigung](#)
- [GKV-Spitzenverband](#)



SOCIETIES, COMPETENCE NETWORKS

- [Deutsche Gesellschaft für Biomedizinische Technik im VDE \(DGBMT\)](#)
- [Deutsche Gesellschaft für Gesundheitstelematik \(DGG\)](#)
- [Deutsche Gesellschaft für Innere Medizin e.V. \(DGIM\)](#)
- [Deutsche Gesellschaft für Integrierte Versorgung](#)
- [Deutsche Gesellschaft für Medizinische Informatik, Biometrie und Epidemiologie \(GMDS\)](#)
- [Deutsche Gesellschaft für Neurologie \(DGN\)](#)
- [Deutsche Gesellschaft für Qualitätsmanagement in der Gesundheitsversorgung e. V. \(GQMG\)](#)
- [Deutsche Gesellschaft für Sozialmedizin und Prävention \(DGSMMP\)](#)
- [Deutsche Krankenhausgesellschaft](#)
- [Deutsches Zentrum für Luft- und Raumfahrt \(DLR\)](#)
- [EHTEL European Health Telematics Association](#)
- [Fraunhofer Gesellschaft \(FHG\)](#)
- [Gesellschaft für Informatik \(GI\)](#)
- [Gesellschaft für Klassifikation e. V. \(GfKI\)](#)
- [Zentrum für Telematik im Gesundheitswesen \(ZTG\)](#)



ASSOCIATIONS

- [Verband der Angestellten-Krankenkassen e. V.](#)
- [BKK Bundesverband](#)
- [Berufsverband Medizinischer Informatiker e. V. \(BVMI\)](#)
- [BVMed - Bundesverband Medizintechnologie e.V.](#)
- [Bundesverband Gesundheits-IT - bvitg e.V.](#)
- [Deutscher Verband Medizinischer Dokumentare e.V. \(DVMD\)](#)

- [Gesundheitsstadt Berlin e. V.](#)
- [VDE Verband der Elektrotechnik Elektronik Informationstechnik e.V.](#)
- [Verein zur Förderung der Technologiebewertung im Gesundheitswesen](#)
- [Verein zur Förderung der Vertrauenswürdigkeit von Informations- und Kommunikationstechnik \(TeleTrusT\)](#)



PROJECTS AND INITIATIVES

- [Aktionsforum Telematik im Gesundheitswesen \(ATG\)](#)
- [Gesundheitsziele.de](#)
- [Hermann von Helmholtz-Gemeinschaft Deutscher Forschungszentren](#)
- [HL7 Anwendergruppe Deutschland](#)
- [Initiative D21](#)
- [www.telemedizin24.de](#)
- [VDE Initiative MikroMedizin](#)



MEDIA, NEWSPAPERS

- [AI Communications The European Journal on Artificial Intelligence](#)
- [CIN Computers, Informatics, Nursing](#)
- [Computers in Biology and Medicine](#)
- [Diagnostic Imagine](#)
- [E-HEALTH-COM](#)
- [Glossar KBSt](#)
- [Health Care Informatics](#)
- [Healthcare Information Management & Communications](#)
- [Healthdatamangement](#)
- [Information Technology in Biomedicine](#)
- [International Journal of Medical Informatics](#)
- [ITIN Official Journal of the British Computer Society Nursing Specialist Group](#)
- [Journal of Medical Internet Research](#)
- [Journal of Telemedicine and Telecare](#)
- [Journal of the American Medical Informatics Association](#)
- [Journal of X-Ray Science and Technology](#)
- [kma - Das Magazin für die Gesundheitswirtschaft \(Klinikmanagement aktuell\)](#)
- [Krankenhaus-IT Journal](#)
- [Krankenhaus Umschau \(KU Gesundheitsmanagement\)](#)
- [KTM Krankenhaus Technik + Management](#)
- [Methods of Information in Medicine](#)
- [Technology and Health Care](#)
- [Telematikglossar der Werbe- und Vertriebsgesellschaft Deutscher Apotheker mbH](#)
- [Telemedicine Today](#)
- [Unabhängige Internetplattform zur individuellen Therapeutenwahl praxisportal.de](#)
- [Virtual Medical Worlds Monthly](#)

ANNEX 2: OVERVIEW OF PUBLIC (GESETZLICH) HEALTHCARE INSURANCE COMPANIES (GKV)

Public Healthcare Insurance providers	Active in:
Actimonda	Germany-wide
AOK Baden-Württemberg	Baden Württemberg
AOK Bayern	Bayern
AOK Bremen/Bremerhaven	Hansestadt Bremen
AOK Hessen	Hessen
AOK Niedersachsen	Niedersachsen
AOK Nordost	Berlin, Brandenburg, Mecklenburg Vorpommern
AOK Nordwest	Schleswig Holstein, Westfalen-Lippe Sachsen, Thüringen
AOK Plus	
AOK Rheinland-Pfalz/ Saarland	Rheinland-Pfalz, Saarland
AOK Rheinland/Hamburg	Hansestadt Hamburg, Rheinland
AOK Sachsen-Anhalt	Sachsen Anhalt
atlas BKK ahlmann	Hansestadt Bremen, Hansestadt Hamburg, Niedersachsen, Schleswig Holstein, Rheinland
Audi BKK	Germany-wide
BAHN-BKK	Germany-wide
BARMER	Germany-wide
Bergische Krankenkasse	Hansestadt Hamburg, Nordrhein Westfalen
Bertelsmann BKK	Germany-wide
BIG direct gesund	Germany-wide
BKK 24	Germany-wide
BKK Achenbach Buschhütten	Nordrhein Westfalen
BKK Aesculap	Company internal
BKK Akzo Nobel Bayern	Bayern
BKK B. Braun Melsungen	Company internal
BKK BPW Bergische Achsen KG	Company internal
BKK der MTU	Company internal
BKK der SIEMAG	Baden Württemberg, Bayern, Brandenburg, Hansestadt Hamburg, Hessen, Nordrhein Westfalen, Rheinland Pfalz, Sachsen
BKK Deutsche Bank AG	Company internal
BKK Diakonie	Baden Württemberg, Bayern, Berlin, Brandenburg, Hansestadt Bremen, Hansestadt Hamburg, Hessen,

	Mecklenburg Vorpommern, Niedersachsen, Nordrhein Westfalen, Rheinland Pfalz, Sachsen, Sachsen Anhalt, Schleswig Holstein
BKK Dürkopp Adler	Nordrhein Westfalen
BKK EUREGIO	Hansestadt Hamburg, Nordrhein Westfalen
BKK EVM	Company internal
BKK EWE	Company internal
BKK exklusiv	Hansestadt Bremen, Mecklenburg Vorpommern, Niedersachsen, Nordrhein Westfalen, Sachsen Anhalt, Schleswig Holstein
BKK Faber-Castell & Partner	Bayern
BKK firmus	Germany-wide
BKK Freudenberg	Baden Württemberg, Bayern, Berlin, Hessen, Niedersachsen, Nordrhein Westfalen, Rheinland Pfalz, Sachsen
BKK Gildemeister Seidensticker	Germany-wide
BKK GRILLO-WERKE	Company internal
BKK Groz-Beckert	Company internal
BKK HENSCHEL Plus	Bayern, Hessen, Niedersachsen
BKK Herford Minden Ravensberg	Baden Württemberg, Bayern, Brandenburg, Hessen, Niedersachsen, Nordrhein Westfalen, Sachsen, Sachsen Anhalt, Schleswig Holstein
BKK Herkules	Bayern, Hessen, Niedersachsen
BKK Karl Mayer	Company internal
BKK KBA	Company internal
BKK Krones	Company internal
BKK Linde	Germany-wide
BKK MAHLE	Company internal
BKK Melitta Plus	Nordrhein Westfalen, Niedersachsen, Baden Württemberg, Berlin, Brandenburg
BKK Miele	Company internal
BKK MOBIL OIL	Germany-wide
BKK PFAFF	Rheinland Pfalz
BKK Pfalz	Germany-wide
BKK PricewaterhouseCoopers	Company internal
BKK ProVita	Germany-wide
BKK Public	Hansestadt Hamburg, Niedersachsen, Rheinland
BKK Rieker.Ricosta.Weisser	Company internal
BKK RWE	Company internal

BKK Salzgitter	Company internal
BKK SBH	Baden Württemberg
BKK Scheufelen	Baden Württemberg
BKK Stadt Augsburg	Company internal
BKK Technoform	Baden Württemberg, Bayern, Niedersachsen, Rheinland Pfalz
BKK Textilgruppe Hof	Bayern
BKK VBU	Germany-wide
BKK VDN	Hansestadt Hamburg, Sachsen, Nordrhein, Westfalen- Lippe
BKK VerbundPlus	Germany-wide
BKK Voralb HELLER*LEUZE*TRAUB	Company internal
BKK Werra-Meissner	Bayern, Hessen
BKK Wirtschaft & Finanzen	Baden Württemberg, Bayern, Berlin, Brandenburg, Hansestadt Bremen, Hansestadt Hamburg, Hessen, Niedersachsen, Nordrhein Westfalen, Rheinland Pfalz, Saarland, Sachsen
BKK Würth	Company internal
BKK ZF & Partner	Baden Württemberg, Bayern, Berlin, Brandenburg, Hansestadt Bremen, Hansestadt Hamburg, Hessen, Niedersachsen, Nordrhein Westfalen, Rheinland Pfalz, Saarland, Sachsen, Sachsen Anhalt, Thüringen
BMW BKK	Company internal
Bosch BKK	Baden Württemberg, Bayern, Berlin, Brandenburg, Hansestadt Hamburg, Hessen, Mecklenburg Vorpommern, Niedersachsen, Nordrhein Westfalen, Rheinland Pfalz, Saarland, Sachsen, Sachsen Anhalt, Thüringen
Brandenburgische BKK	Brandenburg
Continentale BKK	Germany-wide
Daimler BKK	Company internal
DAK-Gesundheit	Germany-wide
Debeka BKK	Germany-wide
Die Techniker (TK)	Germany-wide
energie-BKK	Germany-wide
Ernst & Young BKK	Company internal
Heimat Krankenkasse	Germany-wide
HEK - Hanseatische Krankenkasse	Germany-wide
HKK – Handelskrankenkasse	Germany-wide
IKK Brandenburg und Berlin	Berlin, Brandenburg

IKK classic	Germany-wide
IKK gesund plus	Germany-wide
IKK Nord	Mecklenburg Vorpommern, Schleswig Holstein
IKK Südwest	Hessen, Rheinland Pfalz, Saarland
Kaufmännische Krankenkasse (KKH)	Germany-wide
Knappschaft	Germany-wide
MERCK BKK	Company internal
Metzinger BKK	Baden Württemberg, Thüringen
mhplus BKK	Germany-wide
Novitas BKK – DiePräventionskasse	Germany-wide
pronova BKK	Germany-wide
R+V BKK	Germany-wide
Salus BKK	Germany-wide
SBK - Siemens Betriebskrankenkasse	Germany-wide
Schwenninger BKK	Germany-wide
SECURVITA BKK	Germany-wide
SKD BKK	Baden Württemberg, Bayern, Berlin, Hansestadt Hamburg, Hansestadt Bremen, Hessen, Niedersachsen, Nordrhein Westfalen, Rheinland Pfalz, Saarland, Sachsen
Sozialversicherung für Landwirtschaft, Forsten und Gartenbau	Germany-wide
Südzucker BKK	Company internal
Thüringer BKK	Sachsen, Thüringen
TUI BKK	Germany-wide
Viactiv Krankenkasse	Germany-wide
Wieland BKK	Company internal
WMF BKK	Germany-wide

Source: Krankenkassen Zentrale, 2019

ANNEX 3: OVERVIEW OF PRIVATE HEALTHCARE INSURANCE COMPANIES (PKV)

Private healthcare Insurance providers	Active in:	Headquarter:
<u>Allianz Private Krankenversicherung</u>	Germany-wide	München
<u>Alte Oldenburger Krankenversicherung</u>	Germany-wide	Vechta
<u>ARAG Allgemeine Versicherung</u>	Germany-wide	München
<u>Axa Krankenversicherung</u>	Germany-wide	Köln
<u>Barmenia Krankenversicherung</u>	Germany-wide	Wuppertal
<u>Bayerische Beamtenkrankenkasse</u>	Germany-wide	München
<u>Central Krankenversicherung</u>	Germany-wide	Köln
<u>Concordia Krankenversicherung</u>	Germany-wide	Hannover
<u>Continental Krankenversicherung</u>	Germany-wide	Dortmund
<u>Debeka Krankenversicherung</u>	Germany-wide	Koblenz
<u>Deutsche Familienversicherung</u>	Germany-wide	Frankfurt am Main
<u>Deutscher Ring</u>	Germany-wide	Hamburg
<u>DEVK</u>	Germany-wide	Köln
<u>Die Bayerische</u>	Germany-wide	München
<u>DKV Deutsche Krankenversicherung</u>	Germany-wide	Köln
<u>ENVIVAS Krankenversicherung</u>	Germany-wide	Köln
<u>ERGO Versicherungsgruppe</u>	Germany-wide	Nürnberg
<u>FREIE ARZT-UND MEDIZINKASSE</u>	Germany-wide	Frankfurt am Main
<u>Friendsurance</u>	Germany-wide	Berlin
<u>Gothaer Krankenversicherung</u>	Germany-wide	Köln
<u>Hallesche Krankenversicherung</u>	Germany-wide	Stuttgart
<u>HanseMerkur</u>	Germany-wide	Hamburg
<u>Inter Krankenversicherung</u>	Germany-wide	Mannheim
<u>Krankenversorgung der Bundesbahnbeamten</u>	Germany-wide	Frankfurt/Main
<u>KuK der Berufsfeuerwehr Hannover</u>	Germany-wide	Hannover
<u>LIGA KV katholischer Priester</u>	Germany-wide	Regensburg
<u>LKH Landeskrankenhilfe</u>	Germany-wide	Lüneburg
<u>LVM Krankenversicherung</u>	Germany-wide	Münster
<u>Mannheimer Krankenversicherung</u>	Germany-wide	Mannheim
<u>Mecklenburgische Versicherungsgruppe</u>	Germany-wide	Hannover
<u>Münchener Verein</u>	Germany-wide	München
<u>Nürnberger Krankenversicherung</u>	Germany-wide	Nürnberg

<u>ottonova Krankenversicherung</u>	Germany-wide	München
<u>PAX-FAMILIENFÜRSORGE</u>	Germany-wide	Detmold
<u>Postbeamtenkrankenkasse</u>	Germany-wide	Stuttgart
<u>Provinzial Krankenversicherung</u>	Bremen, Niedersachsen	Hannover
<u>R + V Krankenversicherung</u>	Germany-wide	Wiesbaden
<u>Signal Iduna Krankenversicherung</u>	Germany-wide	Dortmund
<u>SONO Krankenversicherung</u>	Germany-wide	Bottrop
<u>ST. MARTINUS Priesterverein</u>	Germany-wide	Stuttgart
<u>Süddeutsche Krankenversicherung</u>	Germany-wide	Fellbach
<u>UKV Union Krankenversicherung</u>	Germany-wide	Saarbrücken
<u>universa Krankenversicherung</u>	Germany-wide	Nürnberg
<u>Vigo Krankenversicherung</u>	Germany-wide	Düsseldorf
<u>Württembergische Krankenversicherung</u>	Germany-wide	Stuttgart

Source: Krankenkassen Zentrale, 2019

ANNEX 4: OVERVIEW OF LARGEST PRIVATE HOSPITAL GROUPS

Institution	Year	Clinics	Revenue (in Euro)	Patients	Beds	Employees
Helios Kliniken	2016	112	5.800.000.000	5.200.000	35.000	72.000
Asklepios	2016	102	3.211.000.000	2.300.000	34.690	46.000
Sana Kliniken	2016	50	2.400.000.000	2.200.000	11.056	32.071
Rhön Kliniken	2016	5	1.176.349.000	813.747	5.348	15.486
Schön Klinik	2016	17	796.800.000	101.000	4.200	10.000
Ameos	2016	51	780.000.000	n.a.	9.900	12.700
SRH Kliniken	2015	13	622.500.000	705.800	8.452	8.000
Mediclin	2016	36	580.344.000	121.427	8.059	9.371
Paracelsus Kliniken	2016	27	372.512.000	87.618	3.718	5.224

Source: PraktischerArzt.de

ANNEX 5: OVERVIEW OF LARGEST HOSPITALS (PUBLIC & PRIVATE)

Institution	Beds	Patients	Employees
Charite - Universitätsmedizin Berlin	3.011	136.947	13.200
Klinikum der Universität München	2.058	78.550	9.000
Universitätsklinikum Heidelberg	1.930	65.755	12.800
Klinikum Chemnitz gGmbH	1.726	64.980	6.500
Universitätsmedizin der Johannes Gutenberg-Universität Mainz	1.662	70.790	7.500
Universitätsklinikum Freiburg	1.610	62.796	10.000
Universitätsklinikum Tübingen	1.559	68.934	4.300
Universitätsmedizin Göttingen	1.554		7.000
Klinikum Augsburg mit Kliniken für Kinder und Jugendliche	1.531	65.571	5.299
Medizinische Hochschule Hannover	1.520	n.a.	7.600

ANNEX 6: OVERVIEW OF UNIVERSITY MEDICAL CENTRES IN GERMANY

Institution	Location	Federal State
Uniklinik RWTH Aachen	Aachen	NRW
Charité - Universitätsmedizin Berlin	Berlin	Berlin
Ruhr-Universität	Bochum	NRW
Rheinische Friedrich-Wilhelm-Universität	Bonn	NRW
Universitätsklinikum Düsseldorf - Heinrich Heine Universität	Düsseldorf	NRW
Universitätsklinikum Carl Gustav Carus	Dresden	Sachsen
Friedrich-Alexander Universität	Erlangen – Nürnberg	Bayern
Universitätsklinikum Essen	Essen	NRW
Universität Klinikum Frankfurt - Johann Wolfgang Goethe-Universität	Frankfurt	Hessen
Universitätsklinikum Freiburg – Albert Ludwigs Universität	Freiburg	Baden Württemberg
Universitätsmedizin Göttingen – Georg August Universität	Göttingen	Niedersachsen
Uniklinikum Giessen und Marburg – Philipps-Universität	Giessen/Marburg	Hessen
Universitätsmedizin Greifswald – Ernst Moritz Arndt Universität	Greifswald	Mecklenburg Vorpommern
Universitätsklinikum Halle (Saale) – Martin Luther Universität	Halle-Wittenberg	Sachsen-Anhalt
Universitätsklinikum Hamburg Eppendorf	Hamburg	Hansestadt Hamburg
Medizinische Hochschule Hannover	Hannover	Niedersachsen
Universitätsklinikum Heidelberg – Ruprecht Karls Universitätsklinikum	Heidelberg	Baden Württemberg
Universitätsklinikum Jena – Friedrich Schiller Universität	Jena	Thüringen
Universitätsklinikum Schleswig-Holstein – Campus Kiel	Kiel	Schleswig-Holstein
Uniklinik Köln	Köln	NRW
Universitätsklinikum Leipzig	Leipzig	Sachsen
Universitätsklinikum Schleswig-Holstein – Campus Lübeck	Lübeck	Schleswig-Holstein
Universitätsklinikum Magdeburg – Otto von Guericke-Universität	Magdeburg	Sachsen-Anhalt
Universitätsmedizin Mainz – Johannes Gutenberg-Universität	Mainz	Rheinland Pfalz
Universitätsmedizin Mannheim	Mannheim	Baden Württemberg
Klinikum der Universität München - Ludwig Maximilians Universität Innenstadt	München	Bayern

Klinikum rechts der Isar – Technische Universität München	München	Bayern
Universitätsklinikum Münster – Westfälische-Wilhelms-Universität	Münster	NRW
Universität Regensburg	Regensburg	Bayern
Universitätsmedizin Rostock – Universität Rostock	Rostock	Mecklenburg Vorpommern
Universitätsklinikum des Saarlandes und Medizinische Fakultät der Universität des Saarlandes	Homburg	Saarland
Universitätsklinikum Tübingen	Tübingen	Baden Württemberg
Universitätsklinikum Würzburg– Bayerische Justus-Maximilians-Universität	Würzburg	Bayern
Universitätsklinikum Ulm	Ulm	Bayern

Source: PraktischerArzt.de

ANNEX 7: OVERVIEW OF LARGEST ELDERLY CARE GROUPS

Institution	Homes	Number of placements	Assisted living units	Organisation form	Market share
Korian Gruppe (Curanum AG)	236	25.710	54	Private	2,93%
Alloheim Senioren-Residenzen SE	198	18.577	53	Private	2,12%
Victors Unternehmensgruppe (Pro Seniore)	119	15.043	53	Private	1,72%
Orpea Deutschland GmbH	138	12.493	23	Private	1,43%
Kursana Residenzen GmbH	94	8.963	17	Private	1,02%
Vitanas GmbH & Co. KGaA (incl. Pflege & Wohnen)	55	8.096	10	Private	0,92%
Azurit Rohr GmbH (incl. HANSA Pflege & Residenzen GmbH)	79	7.486	24	Private	0,85%
Johanitter Seniorenhäuser GmbH	90	7.447	87	Public/ Communal	0,85%
DOMICIL Senioren-Residenzen Hamburg SE	40	7.185	2	Private	0,82%
Arbeitwohlfahrt Bezirksverband Westliches Westfalen e.V.	59	6.929	3	Public/ Communal	0,79%
Evangelische Heimstiftung GmbH	86	6.745	54	Public/ Communal	0,77%
EMVIA Living GmbH	47	5.718	2	Private	0,65%
DOREA GmbH	58	5.500	14	Private	0,63%
Cura AG *(Incl. Martenus Kliniken AG)	50	5.435	11	Private	0,62%
Arbeiter-Samariter-Bund Landesverband Baden-Württemberg e.V.	69	4.177	66	Public/ Communal	0,48%
K & S – Dr. Krantz Sozialbau und Betreuung SE & Co. KG	33	4.038	20	Private	0,46%
Unternehmensgruppe Burchard Führer GmbH	41	3.769	3	Private	0,43%
Ev. Johanneswerk GmbH	33	3.347	8	Public/ Communal	0,38%
Schönes Leben Gruppe	36	3.254	7	Private	0,37%
Convivo Holding GmbH	42	3.222	14	Private	0,37%
Charleston Holding GmbH	38	3.015	13	Private	0,34%
HVVG Heimverwaltungs- und Vermietungsgesellschaft mbH	26	2.931	1	Private	0,33%
AGAPLESION gAG	34	2.894	11	Public/ Communal	0,33%

Socialservice-Gesellschaft des Bayerisches Roten Kreuzes GmbH	24	2.866	8	Public/ Communal	0,33%
Saarländischer Schwesternverband e.V.	27	2.643	13	Public/ Communal	0,30%
Evangelische Perthes-Stiftung e.V.	29	2.586	4	Public/ Communal	0,29%
Arbeitwohlfahrt Landesverband Saarland e.V.	27	2.562	-	Public/ Communal	0,29%
DSG Deutsche Seniorentift Gesellschaft mbH & Co. KG	20	2.283	8	Private	0,26%
Caritasverband der Erzdiözese München und Freising e.V.	20	2.221	5	Public/ Communal	0,25%
AWO Bezirksverband Hessen-Nord e.V.	28	2.171	14	Public/ Communal	0,25%

Overview of Elderly Care Groups (Source: Pflegemarkt, 2018)

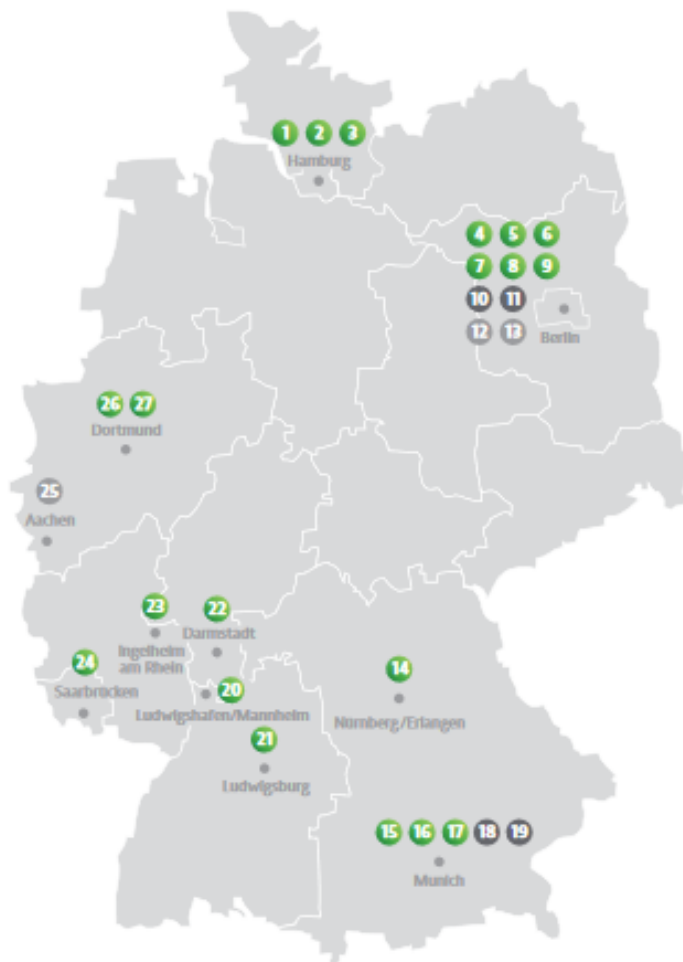
ANNEX 8: OVERVIEW OF THE LARGEST HOSPITAL INFORMATION SYSTEM PROVIDERS

Company	System	Hospitals
Agfa healthcare (DACH)	Orbis (HIS); Impax (PACS); HydMedia (document management system); Agfa Managed Systems; Cardiology; care documents; intensive care medicine	807
Cerner	Millenium; ISH-Med; Medico;	>500
Nexus	NEXU/KIS, NEXUS / FINANZBUCHHALTUNG, NEXUS / PERSONALPORTAL, NEXUS / MATERIALMANAGEMENT	237
Meierhofer (owned 40% by Asklepios)	M-KIS	232 (DACH)
Telekom	iMedOne	> 220
i-Solutions Health	ClinicCentre, InfoCentre, BusinessCentre, RadCentre und LabCentre, AVEDIS, ANDAK, NADOK, INDOK, Enterprise Scheduling	95
CompuGroup	CGM CLINICAL, CGM REHA, TELEMED, CGM VT, MOLIS, a.o.	N/A
Philips	Tasy	None (but already running other systems in Germany)

Source: kma Online, 2017; kma Online, 2018

ANNEX 9: DIGITAL HEALTH HUBS IN GERMANY

Digital Health Activities in German Clusters, Networks, Hubs and Accelerators



Source: BIOCOM AG, 2017

Health Hubs & Accelerators

- ① Health-I Initiative of Techniker Krankenkasse
- ② Philips Start-up Campus
- ③ Healthy hub, Hanseatische Krankenkasse
- ④ Healthcubator
- ⑤ Grant4Apps Programm of Bayer AG
- ⑥ Startupbootcamp
- ⑦ Flying Health Incubator
- ⑧ Healthcare Hub Berlin, Pfizer
- ⑨ German Accelerator Life Sciences/IT
- ⑩ Digital Hub Initiative Nürnberg/Erlangen
- ⑪ German Accelerator Life Sciences/IT
- ⑫ Healthy hub, Siemens Betriebskrankenkasse
- ⑬ Digital Health Accelerator, Munich
- ⑭ Digital Hub Initiative Ludwigshafen/Mannheim
- ⑮ Healthy hub, mhPlus Krankenkasse
- ⑯ Merck Accelerator
- ⑰ Digital Lab "BI X"
- ⑱ Healthy hub, IKK Südwest
- ⑲ I/E-Health NRW
- ⑳ Healthy hub, BIG direkt

Non-Health specific Hubs & Accelerators

- Ⓜ Axelspringerplugandplay
- Ⓝ P75I-Accelerator
- Ⓞ P75I-Accelerator
- Ⓟ TechFounders

Clinical Infrastructures Supporting Start-ups

- Ⓠ Helios.hub
- Ⓡ Digital Health Accelerator, BIH
- Ⓢ Digital Hub Aachen/mHealth Division, RWTH Aachen

ANNEX 10: DIGITAL HEALTH EVENTS IN GERMANY

- FEBRUARY** ○ **Emerging Technologies in Medicine (ETIM)**
22 – 23 February, 2019 - Lehr- und Lernzentrum der Medizinischen Fakultät, University Medical Center Essen - <https://etim.uk-essen.de/>
- APRIL** ○ **Digital Medical Expertise & Applications (DMEA, formerly known as ConhIT),**
9 – 11 April, 2019, Messe Berlin - <https://www.dmea.de/>
- MAY** ○ **Minds Mastering Machines**
14 – 16 May, Mannheim - <https://www.m3-konferenz.de/>
Hauptstadt Kongress 2019 – Medizin und Gesundheit
21 – 23 May, 2019, Berlin - <https://www.hauptstadtkongress.de/>
MedTech Summit & MT Connect
21 – 23 May, 2019, Nürnberg - <https://medtech-summit.com>
- JUNE** ○ **NOAH19 Berlin**
13 – 14 June, 2019, Station Berlin - <https://www.noah-conference.com/noah-berlin-conference-2019/>
Internet of Things Conference
17-19 June 2019, Munich <https://iotcon.de/de/>
- SEPTEMBER** ○ **Gesundheitskongress München**
26 – 27 September, 2019 - <https://www.gesundheitskongress.de/herzlich-willkommen.html>
- OCTOBER** ○ **Xpomet**
10 – 12 October, 2019, Arena Berlin - <https://xpomet.com/>
Hospital concepts 2019
24 – 25 October, 2019 Berlin - <https://www.hospital-concepts.de>
- NOVEMBER** ○ **Frontiers Health**
15 – 16 November, 2019, Berlin - <https://www.frontiershealth.co/>
MEDICA Trade Fair
Messe Düsseldorf, 18 – 21 November, 2019 - <https://www.medica-tradefair.com>
Wearable Technologies Conference Europe, Messe Düsseldorf, 18 – 21 November, 2019 - <http://www.wearable-technologies.com/category/events/>
- TBA** ○ **eHealth Innovation Days – TBA**

TASK FORCE HEALTH CARE

IMPROVING HEALTHCARE TOGETHER

The Task Force Health Care (TFHC) is a public-private not-for-profit platform that represents and supports the Dutch Life Sciences & Health (LSH) sector (since 1996). Our platform has a reach of 1,200 LSH organisations in the Netherlands and has 130 dedicated partners ranging from government, industry, knowledge institutes, NGOs, and healthcare providers.

Our mission is to improve healthcare and wellbeing internationally in a sustainable and demand-driven manner with the use of Dutch expertise. Currently, we are actively engaged with over 20 countries to stimulate and facilitate G2G, K2K, and B2B relations. Our partners provide innovative and sustainable solutions to global (and local) healthcare challenges and are active all over the world.

A PROGRAMMATIC APPROACH

Bridging Knowledge, Aligning Interests and Identifying Opportunities

Fostering and Strengthening Networks

Facilitating Dialogues on Health Themes and Opportunities to Collaborate

OUR FOCUS

- > Mutual interests and benefits
- > A sustainable and long-term approach
- > Demand-driven & Context specific



The Netherlands Business Support Office Stuttgart

The Netherlands Business Support Office (NBSO) in Stuttgart helps Dutch companies to enter the German market. We work for companies in all industries. We put special focus on the healthcare industry in the broadest sense of the word (medical technology, e-health, care issues, etc.). Whether it is answering simple questions, preparing detailed market studies or actively contacting potential trading partners in Germany - entrepreneurs can turn to us for all their concerns.

We are happy to help - quickly, personally and unbureaucratically. Of course, our services are also available to German organisations who would like to find out more about the Dutch economy or are looking for suitable (trading) partners. Please feel free to ask us. We are there for you!

Contact information

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For more information please click [here](#)



Netherlands Enterprise Agency

The Netherlands Enterprise Agency

The Netherlands Enterprise Agency stimulates entrepreneurs in sustainable, agricultural, innovative and international business. It aims to improve opportunities for entrepreneurs, strengthen their position and help them realise their international ambitions with funding, networking, know-how and compliance with laws and regulations.

The Netherlands Enterprise Agency is a government agency which operates under the auspices of the Ministry of Economic Affairs and Climate Policy. Its activities are commissioned by the various ministries and the European Union.

For more information please click [here](#)

Agenda

For more information on upcoming activities:

www.tfhc.nl/agenda/

www.rvo.nl/actueel/evenementen

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