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HealthCapital
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Berlin-Brandenburg
The future of health

THE GERMAN CAPITAL REGION
excellence in life sciences & healthcare

Imprint

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Berlin-Brandenburg – The future of health

Master Plan for the Berlin-Brandenburg Healthcare Region

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Contents

This publication uses gender-neutral language throughout to make the text easier to read. In the interests of equality, any person-related terms used generally apply to anyone of any gender. Where only the male form of a word is used as default, this is done for editorial reasons only and without prejudice.

I. Foreword from honorary spokesperson and cluster managers

Dear readers and valued stakeholders in the Berlin and Brandenburg health-scape,

These are transformative times. Scientists are discovering more and more novel therapies to quell disease. Translational research, precision medicine, breakthroughs in diagnostics and medical engineering – those are but a few of the many forces reshaping modern medicine.

Life expectancy continues to rise as progress marches on. A newborn Berliner or Brandenburger is likely to see the other side of 80. These are happy tidings indeed, but the healthcare challenges will be colossal. Few countries today have a populace as old as Germany's, and forecasts suggest that a third of it will be older than 65 years of age by 2060.

As the coronavirus pandemic exposes our healthcare infrastructures' vulnerability, we see in stark relief the magnitude of social and economic challenges to come.

We must rise to these challenges together, affording seniors the opportunity to enjoy a good quality of life during their twilight years and setting our venture on a strong footing for the future. But collaboration alone will not be enough. Furnishing first-class healthcare to the denizens of Berlin and Brandenburg while elevating our region to a global hub of medicine requires unity of purpose.

The first master plan for Berlin-Brandenburg, drawn up in 2007 and later adopted by our two federal states, sought to position the greater capital region as a German healthcare hub. The Cluster's nascent years were all about creating transparency, joining forces and building structures of excellence. The brand name HealthCapital Berlin-Brandenburg was born in 2010 with a professional management team tasked to build on this earlier success.

The second master plan followed in 2014. Entitled "Building Innovation Together", it has since been fostering cooperation across industries to bring new skills to the Cluster. Scientists, physicians, insurers, providers, start-ups and incumbents – this unprecedented initiative has convened all these stakeholders to pursue common goals and joint projects to raise the greater capital region's profile as a hub of German healthcare.

Now it is this new master plan's turn. Adopting more agile ways of working and structuring projects, "Berlin-Brandenburg – The Future of Health" builds on 13 years of successful efforts on the part of the Cluster.

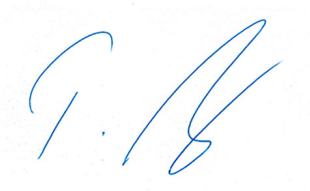
This plan also gives voice to a new vision – Berlin-Brandenburg is to become a global life sciences hub. Our task now is to continue cultivating our home-grown healthcare, science, education and business assets for the future of health to be fruitful. Everything we do is done for people to reap the rewards of world-class care, particularly the local population.

Signposts from the past can point the way to our future. History has already seen one revolution in medicine and healthcare. Many of today's standards are rooted in knowledge and methods acquired in the late 19th and early 20th centuries.

Our capital region was an epicentre of this revolution fomented by the likes of Ernst von Bergmann, Paul Ehrlich, Rahel Hirsch, Robert Koch, Rudolf Virchow and Cécile Vogt. Their theories and experiments paved the way for the great strides in medicine.

The funding and resources available today would be the envy of turn-of-the-20th-century pioneers. Digitalisation has opened windows of opportunity they could scarcely have imagined. This transformation is ushering healthcare into a new age as biology, engineering, medicine and computer science converge in the digital realm. AI-driven big data analysis, virtual models, predictive analytics, pattern recognition for targeted diagnoses and therapies – a new frontier of tech is capturing the imagination of movers and shakers and pushing the boundaries of medicine.

Rudolf Virchow was right: “The only limit to our knowledge is what we don’t know.”



Peter Albiez
Cluster Spokesperson

Prof. Andreas Lendlein
Chair of the Advisory Board

Dr Kai Bindseil
Cluster Manager

Florian Schlehofer
Cluster Manager

Berlin / Potsdam
July 2020

II. Management summary

Healthcare industry stakeholders wrote “Berlin-Brandenburg – The Future of Health” to update the master plan for the HealthCapital Berlin-Brandenburg cluster. This new version draws on the innoBB 2025 strategy, the goals, guidelines and focal points of which set out a joint innovation policy for Berlin and Brandenburg. This Master Plan applies the innoBB 2025 strategy to the healthcare sector, providing a blueprint for collaboration among researchers, businesses, healthcare, policymakers, local government, associations and chambers over the next few years.

Cooperation in the Cluster is bearing first fruit. The healthcare region now plays a key role in securing growth and prosperity in Berlin-Brandenburg. Recent years have seen the metropolitan region rise to become a contender in the healthcare sector. The Cluster has helped drive this growth by setting the right priorities and producing successful innovations. Inspiring healthcare stakeholders across Berlin and Brandenburg to collaborate throughout the value chain, these efforts have forged bonds born of a common regional identity.

Drafted in a participatory effort with healthcare stakeholders, this new master plan builds on this success. Now, for the first time, these actors are uniting across sectors in pursuit of a common **vision and purpose set out by the Cluster**.

Figure 1: The Cluster’s vision and purpose

Vision

We set new benchmarks in life sciences and healthcare in Berlin-Brandenburg.

Purpose

Our Cluster researches and develops products, solutions and digital offers as a collective to improve health, the quality of life, and create real value that truly benefits people – and to build a future where talent and capital come here to stay.

Our statement of purpose spells out the Cluster's new priority for the next few years – to elevate the greater capital region to an internationally recognised hub for life sciences, medicine and healthcare. The industry is redoubling its efforts to deliver innovative solutions to tomorrow's challenges as envisioned by the innoBB 2025 strategy. And the onset of the Covid-19 pandemic in spring of 2020 has dispelled any doubts about the importance of this work.

These efforts centre on the **new master plan's seven focal areas**:

- Innovation and Technologies
- Networking and Transfer
- Digital Health
- Capital. Model. Regions.
- Work environments
- Spin-offs and start-ups
- Internationalisation

The Cluster Healthcare Industries Berlin-Brandenburg is taking even more agile and interdisciplinary approaches to achieve the goals set out for these focal areas. It has streamlined its structures to this end. For example, the Cluster will now only be structured around two fields of action instead of four. The combined efforts of all stakeholders will make it easier to transcend the boundaries separating industries to create a space for flexible, interdisciplinary collaboration.

Cluster Management in Berlin and Brandenburg's economic development agencies initiates and supports cooperation among the Cluster's stakeholders to achieve goals for these focal areas. Experts who work with the Cluster in a **voluntary** capacity, topic teams, the Cluster advisory board and the Cluster Spokesperson are on board.

All stakeholders are invited to help develop and prioritise measures to achieve goals in the seven focal areas and are welcome to join topic teams to address issues of relevance to their mission.

III. The Cluster as a driver of innovation

Overview of the healthcare industry

For many years now, the healthcare industry in Berlin and Brandenburg has been instrumental in driving business success, economic growth and employment in addition to providing comprehensive, state-of-the-art care for over six million people. The region's healthcare industry employs 383,000 people[1] and generates revenues of 28 billion euros[2], making it a major driving and innovating force in the local economy. The Cluster is driven by the activities of a diverse range of participants and represents one of the capital region's strongest economic sectors with a close network of players.

The capital region has an exceptionally high-density cooperation network comprising several prominent institutes for science and research in medicine, life sciences, engineering and computer science. Committed players work together in around 40 universities and non-university research institutions, and a large number of researchers are involved in clusters funded by the Excellence Strategy programme of the German Federal Government and the Federal States. The region has a diverse range of scientific expertise in both basic and applied research, ranging from traditional subjects, such as biotechnology and medical technology, to new areas of enquiry. These new research areas include artificial intelligence (AI) and social sciences research on public health, specifically examining the healthcare system, healthcare provision and global health. One outcome of this work was the creation and appointment of a cross-state Professorship for Climate Change and Health in 2019.

All players benefit from the particular advantages that the capital region brings, such as the close proximity between federal policymaking, health insurance companies and associations and cutting-edge medicine and research at universities.

All this gives the capital region a very solid foundation from which to develop innovative healthcare products and services across all sectors, from preventive medicine and diagnostics to treatment, care and rehabilitation.

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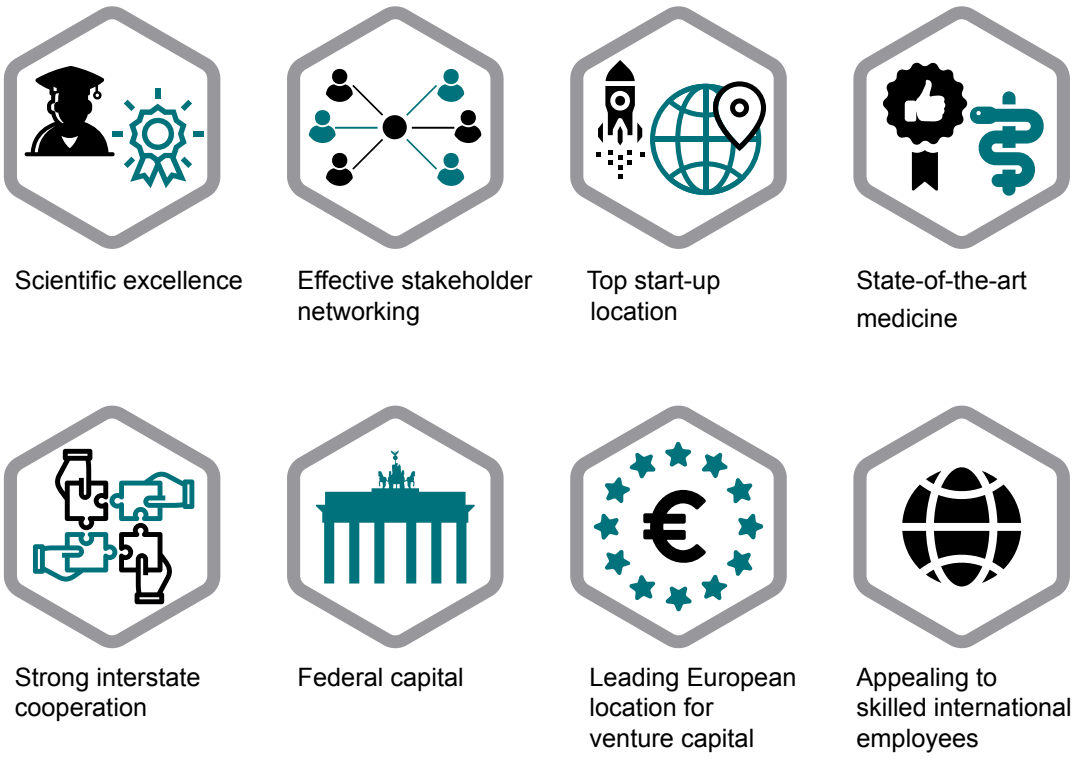
1 Total taken from employment subject to mandatory social insurance contributions and only marginal employment at the work location in breakdown by economic sector (ES 2008) based on the cluster boundary, sample day 30 June 2018, German Federal Employment Agency.
You can find the latest figures about the Berlin-Brandenburg healthcare industry in the Cluster fact sheet. Accessible online at: https://www.healthcapital.de/en/press-media/factsheet-cluster-gesundheitswirtschaft-berlin-brandenburg/

2 Taxable turnover made up of deliveries and services in breakdown by economic sector (ES 2008), as per cluster boundary based on the company register statistics for 2017; Office for Statistics Berlin-Brandenburg. Deviations in totals as a result of rounding.

Figure 2: Strengths of the capital region



The **healthcare industry in Berlin and Brandenburg** includes well-established subsectors such as pharmaceuticals and medical technologies in addition to newer industries such as biotechnology and the digital health start-up scene.

The success of the **pharmaceutical industry** in the region is built on a long history that stretches back to the 19th century. Now more than ever the industry has a wealth of resources to tap into: a large pool of specialised skilled employees, an outstanding scientific environment, a large number of contract research organisations and other service providers, and hospitals with diverse patient populations. These conditions have helped the region become established as a pioneer in clinical studies in Germany. This expertise, combined with the capital region's close proximity to industry associations and key decision-makers in the German healthcare system, makes it an attractive location for over 34 medium-sized pharmaceutical companies and a variety of global players established in the region with headquarters in Germany, Europe and across the world. Collectively they employ around 11,000 people in Berlin-Brandenburg and are developing and producing innovative medicines.

The capital region's **medical technology** industry, largely driven by small and medium-sized companies (SMEs), also benefits from this positive environment and has been showing healthy growth for many years now. Berlin-Brandenburg is one of Europe's leading locations for this sector. It is home to 330 medical technology companies with a total workforce of 14,400 people and an annual turnover of 1.5 billion euros. Many of these companies are global leaders in their fields, including minimally invasive medicine, laboratory technology and cardiovascular medical technology.

A diverse **biotechnology** industry has emerged in the region since the mid-1990s. The region's excellent science and research landscape has generated a groundswell of activity, marking Berlin-Brandenburg out as an attractive investment location for venture capitalists and leading to the foundation of numerous biotech start-ups. The medical biotechnology sector is leading the way here: out of 255 biotech companies employing a total 6,200 people, nearly 80% work in biomedicine. Some of this work focuses on developing innovative diagnostic and therapeutic procedures to treat cancer, cardiovascular diseases and diabetes. Founded in 1996, the cross-state BioTOP Berlin-Brandenburg action centre played a pivotal role in the growth of this sector and helped develop the Cluster.

The capital region has seen a booming and vibrant start-up scene develop in the digital health sector since the 2010s. Today the region is an uncontested top location for this highly innovative subsector, sought more and more often by more and more traditional companies, global players and venture capitalists. The region's start-up ecosystem offers a wide range of opportunities to network and boasts an excellent infrastructure comprising over 60 biotechnology parks, incubators, accelerators and start-up centres.

One of the Cluster's unique features is that its participants not only include the industrial healthcare industry, as companies, players and institutions from preventive medicine, healthcare provision, care and rehabilitation are also involved.

With over 130 hospitals and clinics, the **hospital landscape** in Berlin-Brandenburg offers a wide range of high-quality care for the whole region. This includes Charité, Germany's leading university hospital for securing third-party funding for research and development. Outstanding academic teaching hospitals are making a name for themselves too, having continually strengthened their expertise and academic excellence in the last few years. Several specialist hospitals and primary and routine care providers are also raising their profiles. Hospitals are some of the biggest employers in both federal states.

The capital region is home to over 70 **inpatient and outpatient rehabilitation facilities** that form an innovative and state-of-the-art rehabilitation landscape. Brandenburg has by far the greatest number of inpatient rehabilitation facilities, some of which are located in spa and resort areas. Catering for a little over 90% of the care demand, their capacity is significantly higher than the national average. Most outpatient rehabilitation facilities are in Berlin.

Over 1,200 **outpatient care services** and over 800 **care homes** provide care to patients in the region. Institutions and companies in Berlin-Brandenburg are working to develop a range of services to reduce pressure on care providers and meet the demand of many patients who want to lead an independent life as much as possible. These new ideas for services include alternative forms of living, such as (assisted) residential communities, accessible homes with care services, and ambient assisted living technologies, such as technical aid devices and digital services.

A variety of players and healthcare institutions are also working together to develop a wide range of measures for **health promotion and prevention** for all age groups. Major contributors to these measures include health insurers (including statutory health insurance companies), German pension schemes, professional bodies and statutory accident insurance companies, working together with sports clubs, adult education institutions, doctors, businesses, chambers of commerce and industry, schools, childcare facilities and many others.

Development of the healthcare industry between 2007 and 2019

The first master plan for the Berlin-Brandenburg Healthcare Region was adopted in 2007 and aimed to develop the capital region into one of the leading locations for healthcare in Germany. It set out the goals and recommended measures across 12 fields of action that were worked on by various players. While evaluating and updating the master plan in 2014, its goals and structure were whittled down to four focal areas and five "integrative topics". The four focal areas were: Biotechnology and Pharmaceuticals; Medical Technology; Innovative Patient Care and Rehabilitation; and Health Promotion, Preventive Healthcare and Health Tourism. Five integrative topics were introduced across all fields of action, covering e-health; securing skilled employees; inward investment and regional development; internationalisation; and an ageing society. The Cluster Management in economic development agencies in Berlin and Brandenburg helps to implement the master plan. With support from ambassadors in business, healthcare and science, the Cluster also generates interest in the latest key issues.[3]

The Cluster Management has launched or supported around 50 new projects[4] every year for the last few years, covering all fields of action. In the period 2016-2019 alone, the number of projects totalled 196 with a combined project budget of over 305 million euros. The projects largely focused on research, development and innovation initiatives. The Cluster Management has helped connect players with one another other and initiate projects and collaborations as part of numerous events, from the annual Cluster conference and international Bionnale to workshops focussing on specific industries and topics.

Players successfully set up major federal projects, such as growth engines and competence clusters, that focused on initiatives in the region as part of the research-oriented focal area 1 – **Biotechnology and Pharmaceuticals**. These project hubs pooled the region's first-class research into topics that were developing rapidly across the world, such as regenerative medicine, single-cell analysis and bioanalysis. They placed particular emphasis on transferring results from research into practice. They also addressed new challenges facing SMEs in biotechnology and pharmaceuticals as a result of changes to regulations in these areas at European level, including the EU regulations on medical devices and in-vitro diagnostic medical devices. The growing cooperation between the pharmaceutical industry and the digital health scene has been one of the big successes of the last few years. Together with start-ups and early career research scientists, the pharmaceutical industry has used incubators and accelerators to tap into the potential of open innovation.

Field of action 2, **Medical Technology**, focused on topics according to the region's expertise, specifically imaging diagnostics, e-health technologies/medical informatics, orthopaedics and endoprosthetics, cardiovascular medical technology and minimally invasive medicine. Players working in this focal area address new developments and technologies such as 3D printing and additive manufacturing. A wide variety of first-class businesses, research institutions, hospitals and clinics have helped put the capital region on solid footing for the future when it comes to megatrends such as digitalisation, miniaturisation, biologisation and individualisation.

Players steadily ramped up activities in the integrative topic **e-Health** (currently called digital health) to reflect its rapidly growing significance for the industrial healthcare industry and for

3 These include "Innovative care in the healthcare region", "Transfer and translation platforms in the capital region", "Using big data for clinical studies and healthcare research" and "Healthcare 4.0".

4 This figure includes projects with a total budget of at least 50,000 euros each

healthcare provision. These activities were also integrated operationally into field of action 2. The capital region has now become established as the top location for digital health. The region has progressed at a considerable pace, which is evidenced by the Cluster's increased appearances at leading national and international trade shows, its variety of events and its ever-growing cooperation with the Cluster ICT, Media and Creative Industries. The Cluster has closely monitored the burgeoning digital health start-up scene since the beginning and has connected well-established players with it.

As part of field of action 3, **Innovative Patient Care and Rehabilitation**, healthcare providers working in nursing, outpatient care and acute inpatient and rehabilitation facilities teamed up with universities, non-university research institutions, health insurers, associations, unions, chambers and health administrations in Berlin and Brandenburg to develop future-ready healthcare solutions. "Future workshops" were one of the formats introduced to work on these solutions. The aim of this annual event is to develop innovate, needs-based and cross-sector solutions for the capital region's healthcare provision and to recommend actions to take with joint hospital planning between the two federal states. Players working in field of action 2 (Medical Technology) and the integrative topic of e-Health have increasingly collaborated on other areas such as telemedicine, digital assistance systems in care and electronic documentation systems.

Activities for field of action 4, **Health Promotion, Prevention and Health Tourism**, are divided into two focal areas.

Setting up a cross-state health report for Berlin-Brandenburg was a great achievement for the Cluster. The report regularly analyses extensive volumes of data from pension, accident and health insurance schemes in addition to occupational health management in the region. Activities in the health promotion and prevention focal area focussed on ageing healthily and better health at work.

Various projects were implemented as part of the second focal area – health tourism – drawing on two studies exploring the topic's potential. Medical tourism played, and continues to play, a key role for Berlin. It has been successful in recent years thanks to efforts led by Berlin Tourismus Marketing und Kongress GmbH (visitBerlin) to connect healthcare service providers and market services for health tourism. In close cooperation with the Brandenburg Cluster Tourism, various focal points were established and developed around health tourism that is geared towards preventive medicine. Each focal point is evaluated on its ability to drive further growth of the region's health tourism.

This focal area has been instrumental in networking and increasing cooperation between the healthcare industry and the tourism industry in recent years. These achievements have led to the tourism marking organisations in both states (visitBerlin and Tourismus-Marketing Brandenburg GmbH) taking on responsibility for developing health and medical tourism in the future.

IV. Integrating into the innoBB 2025 innovation system

Berlin and Brandenburg adopted a **cross-state innovation strategy (innoBB)** for the first time in 2011, creating five joint clusters including the Cluster Healthcare Industries. These clusters help the states to work across borders to hone the region's strengths and foster productive dialogue between different sectors and industries.

Building on the positive outcomes from their joint innovation policy, the two states turned their attention to new challenges in 2019 with an updated innovation strategy – **innoBB 2025**[5]. This new plan serves both as a stimulus and a benchmark for updating the strategy for a thriving healthcare industry. Both states extended funding for the strategy in the name of "Excellence in Innovation", which seeks to continue strengthening excellence in the dynamic field of digitalisation. The capital region aims to develop highly innovative products and services, attract start-ups and draw in skilled employees for the location in the future so that it can secure smart, sustainable and inclusive growth.

The states' innovation policies are driven by **two goals** to achieve this: to turn the capital region into one of the leading places for innovation and develop novel solutions for the challenges of tomorrow. These include **five guiding principles** that were defined by the players for the Cluster Healthcare Industries, setting out the requirements for the Cluster's activities:

1. Expanding how we think about innovation

A holistic approach to health starts with health maintenance, including health promotion and prevention, and covers diagnostics, treatment, rehabilitation and care. It focuses on using innovative methods both with and without technology. The scope for innovative concepts includes both new digital and industrial applications, as well as systemic processes and social innovations for care and healthy working environments, among others.

2. Strengthening cross-cluster cooperation

Innovations are increasingly emerging at the interfaces between conventional industries. The Cluster Healthcare Industries is responding to this development by making greater efforts to work more across industries and sectors in the cluster. Furthermore, there are two cross-cluster objectives that explicitly target players' interest in working with other clusters in the capital region. These objectives are: "Generate cross-cluster innovations" (goal 2.d) and "Develop and test new mobility and logistics solutions" (goal 4.c).

5 Accessible online at: https://innobb.de/en/innobb-2025-new-strategy-new-age

3. Opening up innovation processes further

"Open innovation" means opening up innovation processes and consistently involving users in the development process. The healthcare industry is leading the way in open innovation since developments in the sector require researchers to work closely and confidentially with patients and healthcare personnel. Their interaction and participation with one another play a particularly key role here.

4. Prioritising sustainable innovation

One key principle of the Cluster Healthcare Industries is sustainability, placing the health of citizens and the environment at the heart of the Cluster's activities. The Cluster's players endorse the vision of a green economy and support green technology in terms of resource-efficient development and production processes in life sciences, pharmaceuticals and medical technology. Cluster players also support equal access to healthcare in the capital region regardless of gender, background or location. They are also developing effective and efficient solutions to address the different structural conditions in urban and rural locations.

5. Becoming more international

The Cluster's players operate in a globally connected healthcare industry. The Cluster is raising its profile both locally and internationally to maintain and build on the capital region's attractiveness and competitiveness. Fulfilling the Cluster's ambitions to gain international standing is supported by its own focal area – Internationalisation. It underscores the importance of international cooperation to continue strengthening the capital region's performance and innovative capacity. It also aims to help innovations created in the region gain greater national and international recognition and have a greater impact within and beyond Germany.

innoBB 2025 sets out four focal areas: **Digitalisation; Regulatory Test Beds and Testing Areas; Work 4.0 and Skilled Workers**; and **Start-Ups and New Business Ventures**, giving all of its clusters a thematic orientation. The seven focal areas in the "Berlin-Brandenburg – The Future of Health" master plan align with those of the innoBB strategy and were added to with requirements specific to future trends in the healthcare industry (see VII. Focal areas and goals of the Cluster).

V. Updating the master plan

Work over the last five years has fostered extensive intra-industry networking in the Cluster Healthcare Industries Berlin-Brandenburg, laying the groundwork for agile, interdisciplinary cooperation across sectors to focus on future topics and solutions for complex challenges in healthcare.

This approach is the outcome of an in-depth participatory process to update the master plan, its goals and priorities, which were largely drawn up by the players in the capital region's healthcare industry.

The process started with inviting **groups of experts and stakeholders who had worked on the previous fields of action** to take an **online survey**, with selected individuals participating in **expert interviews**. The purpose of the survey questions was to review[6] the work that the Cluster had done so far and identify trends and future topics facing the healthcare region.

Answers from field experts and Cluster players acknowledged that **the healthcare region had developed well and that the Cluster had played a significant role in this**. The experts commented in particular on the greater level of networking between Cluster players. Remarkably this covered the entire value chain within the Cluster. In addition, the interviewees noted that the Berlin-Brandenburg Healthcare Region has had greater and greater relevance in political discourse in recent years. Their answers also showed that the structure of Cluster Healthcare Industries has proven to be a valuable platform for fruitful dialogue between experts.

Looking to the future, players would like to develop an even stronger public **identity** for the Cluster and **raise the region's profile internationally as a life sciences location and hub for innovation in the healthcare industry**. The survey results also make it clear that agile working methods are needed as innovation topics, challenges and stakeholder groups are constantly changing and evolving. The aim is to make it easier to map topics that rapidly gain in significance and to define and adapt the Cluster's priorities and measures for these areas. In addition, work that focuses solely on one industry is gradually being replaced by interdisciplinary, cross-sector approaches in many topic fields. Both **agility and interdisciplinary approaches** are thus key criteria for updating the master plan.

The **Cluster Spokesperson and advisory board put forward groundbreaking proposals and fleshed out** initial ideas for the new master plan's topic fields in an advisory board meeting. Taking this as a starting point, four workshops were then held where groups of experts drew up the **focal areas** for future work. They then took part in another process to further define these areas.

Together with the Cluster Spokesperson, the Cluster advisory board drafted the **vision for the Cluster**. A vision shared by all of the Cluster's players will provide an overarching narrative for all activities pursued by the Cluster Healthcare Industries in the future.

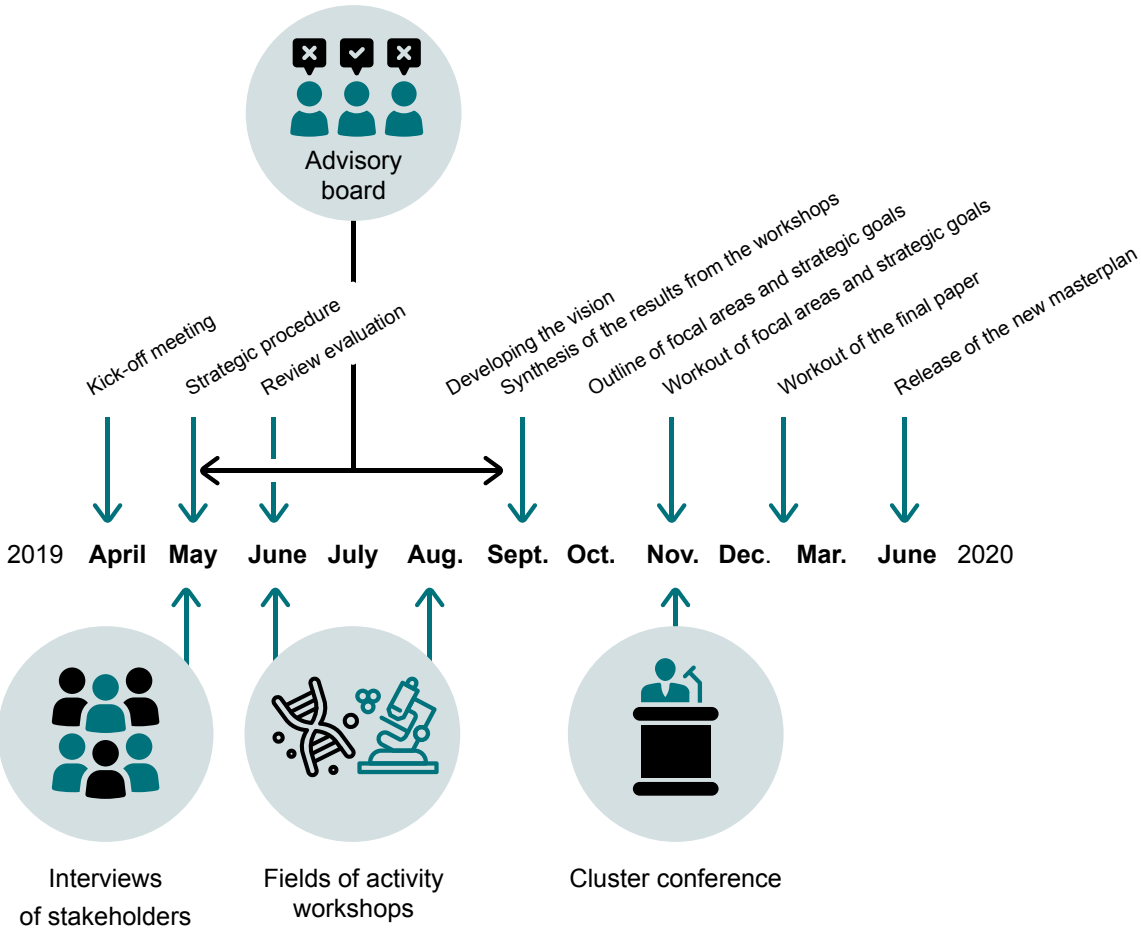
At the annual conference for the Cluster Healthcare Industries, **all players in the Cluster** were given the opportunity to have their expertise and feedback incorporated into the new focal areas.

6 More results from the survey of cluster players can be accessed online at:
https://www.healthcapital.de/en/about-us/master-plan/

Members of the advisory board generated discussion around the individual focal areas, and participatory workshops were held to refine their content. This wealth of feedback was used to draw up the **goals for each of the focal areas**.

A **coordination group**, comprising the Cluster Management and local government authorities for both states, held a series of meetings to support the process of updating the master plan. The group was responsible for setting out the official scope of the master plan, coordinating the process and reviewing submitted content for compatibility.

Figure 3: Timeline of the participatory process to update the master plan



VI. The vision for our Cluster

We set new benchmarks in life sciences and healthcare in Berlin-Brandenburg.

Our Cluster researches and develops products, solutions and digital offers as a collective to improve health, the quality of life, and create real value that truly benefits people – and to build a future where talent and capital come here to stay.

We envision a region where …

(1) … **Cluster stakeholders join forces** to make it a leading location for medicine and healthcare of the future.

- Together, we strive to improve healthcare and enable people to participate in advancing medicine. Researchers, businesses, policymakers, healthcare providers, insurers, start-ups and lobbying groups unite to achieve this goal within the region and beyond.
- New forms of collaboration between science and industry give rise to new technologies, products and services that benefit society and business.
- Efforts to shape the region's digital transformation spawn new hubs for research, development and start-ups. A culture of innovation and entrepreneurship in politics, society, science and business opens windows of opportunity.
- Structuring and leveraging data collected in compliance with all data privacy laws and information security standards improves information sharing to enable effective collaboration across sectors to benefit people.

(2) … stakeholders **harness the potential of future-focused topics to benefit people and develop new standards** to make the region a **global hub for life sciences and emerging healthcare technologies**.

- We engage in a spirited dialogue within our networks to take advantage of advances in life sciences to create solutions for future healthcare challenges.
- Funding for university and non-university research institutions' spin-offs expedites new ideas' transition from labs to innovative applications.
- Changing demographics engender structural changes that impact healthcare services' demand and delivery. We see this as an opportunity.
- Digitalisation helps improve care and patient safety. It provides the means to develop new treatments and healthcare solutions by mining research data.
- The Cluster's collective expertise affords the public direct access to all types of healthcare, from preventive medicine, diagnostics and therapies to rehabilitation, care and solutions for healthy living at an advanced age.
- Our projects use quantifiable metrics and practical examples to show what better healthcare looks like and how other regions and states can adopt the same practices

(3) … an effective Cluster helps us **create jobs**, **drive business**, **foster well-being and improve healthcare**.

- World-class businesses, institutions and research are making this region a leading hub for life sciences, medical technology, medical research and healthcare.

- We are harnessing synergies between Berlin and Brandenburg throughout the value chain in the healthcare industry. We see the structural gap between local urban and rural areas as an advantage; as an opportunity to develop a region where the quality of life and well-being sets an example for others to follow. Our support goes to structures that foster innovation.

- Knowledge begets value and sustainable growth within the region. Further benefits accrue to Berlin-Brandenburg: As word of our success reaches a wider audience, our region will gain greater recognition abroad. Its reputation as an attractive location with a good quality of life will spread. It will be a magnet for investments, talent and skilled staff

- Knowledge is becoming a form of capital that can be reinvested in better healthcare, secure jobs with good working conditions, and products that are in demand across the globe.

The strategic goals, fields of action and focal areas detailed in the next chapter guide our efforts to put this vision into action. The shared objectives of the Cluster Healthcare Industries provide the underpinning for successful collaboration in the years ahead.

VII. Focal areas and strategic goals of the Cluster

Committed stakeholders from different disciplines and positions within research, development, production and healthcare are working toward the Cluster's vision in the capital region and together are creating solutions for the medicine and healthcare landscape of tomorrow.

In future, Cluster work will be aligned with seven cross-sector focal areas, forming the common foundation for the work of the participating players. The focal areas are designed to make a contribution to implementing the focal areas of the innoBB 2025.

The broad focal areas allow players to conduct Cluster work in an agile manner so that they can adapt to current trends. The Covid-19 pandemic has demonstrated how important it is to be agile. How the pandemic has been handled and its repercussions will impact the Cluster's work across all of its focal areas. It will also be a social, economic and public health challenge for healthcare industry players in the capital region to tackle in the future.

Figure 4: Key focal points of Cluster work

Focal Area 1 – Innovation and Technologies

First-class research and development in medicine and life sciences has emerged in the capital region in recent years. The Cluster Healthcare Industries will continue to combine the excellence of the region's academic institutions and corporate landscape with the strengths of the digital economy to create cutting-edge technologies, sustainable applications and high-quality healthcare.

New diagnostic methods allow healthcare professionals to identify diseases earlier, treat them more effectively and even prevent their onset altogether. Regenerative medicine allows doctors to treat the underlying cause of an illness and make care and treatment more effective using digital assistance systems. The Cluster aims to be at the forefront of these fast-growing topic fields and showcase the added value of these innovations for patients, hospitals and the healthcare system.

The capital region will become a pioneer in translational medicine, whereby research findings will be quickly transferred into beneficial prevention, diagnostics and treatments in a targeted manner.

Strategic goals

1a. Reinforce scientific excellence in life sciences, medicine and technical fields and harness it for innovative technologies and processes

The objective here is to continue producing world-leading scientific discoveries, innovative techniques and sustainable technologies in the capital region. As such, one of the Cluster's key aims is to continue strengthening scientific excellence and increasing the transfer of a wide range of research findings into products and services for the healthcare industry in the future.

There is major transfer potential with new pharmaceuticals and treatments in regenerative medicine and systems medicine, combined with bioanalytical processes and "omics" technologies[7]. This requires integrating new bioinformatics methods and AI in different fields within research, development, production and healthcare.

Advances in imaging techniques and their combination with in vitro diagnostics also present new opportunities. Special attention will be paid to miniaturisation, usability and networking capabilities across the board during the development of a wide range of (platform) technologies. Many Collaborative Research Centres belonging to the Deutsche Forschungsgemeinschaft (German Research Foundation, DFG) have made valuable contributions to this area in the capital region.

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7 "Omics" technologies are bioanalytical techniques with high throughput that can be used to obtain large amounts of data about vital functions quickly. Researchers use these methods to understand vital functions with greater precision.

1b. Strengthen translational and precision medicine

Precision medicine is the process of using targeted diagnostics and treatments from a single source that are tailored to the patient.

If diseases are to be more effectively identified and treated in a more targeted way in the future, we need to find new biomarkers and combine them with imaging techniques for diagnostics and treatment. There is also a focus on other innovations, such as the use of AI to improve patient stratification, the development of new drugs (made using natural products, biotechnology or synthetic substances) and novel pharmaceutical products (Advanced Therapy Medicinal Product, ATMP), and more generally the use of new approaches to treatment in personalised medicine. Developing these topics effectively requires the shortest possible bench-to-bedside processes and cooperation between cutting-edge medicine, non-university research institutions and universities with research companies.

The Cluster aims to improve social sustainability and social inclusion in medical innovation in all of these developments. This is particularly pertinent for preventive medicine, diagnostics and the treatment of pathologies that affect large swaths of the population, such as infections, chronic illness, age-related conditions and mental health disorders.

1c. Establish sustainable research, development and production processes

Under the banner of greater sustainability, resource efficiency and eco-friendly research, development and production processes, the Cluster Healthcare Industries is finding that topics such as additive manufacturing processes, bio-based products, energy efficiency and green chemistry (including enzyme design and plant biotechnology) are becoming ever more relevant to its activities.

Resources can be used more efficiently if manufacturers consider a product's life cycle in more detail and improve its durability. A regional circular economy coupled with local value chains are priorities for this.

Resources used in pharmaceutical research and development are to be examined too, which why there is increased support for initiatives exploring alternative replacement and complementary methods to animal testing, for example. Furthermore, there is support for initiatives that focus on improving predictions about the reactions and side effects of drugs used in personalised medicine, whereby the adjustment of medication for older people and children also plays a role.

It is important for innovations to be scalable in research and development to ensure the sustainability of the milestones already achieved. To guarantee this scalability, IT capabilities and technologies are to be harnessed more to automate processes.

Focal Area 2 – Networking and Transfer

Innovation often starts at the interfaces between different (sub)sectors where players foster comprehensive dialogue and forge new partnerships. Berlin and Brandenburg form a region with an outstanding potential for synergies and innovation, which can only be fully harnessed by working together. The Cluster builds on this flourishing and fruitful cooperation on healthcare topics between the two states.

Effective structures and interfaces for sharing information and matchmaking are needed to ensure that the Cluster's players can network both within and across industries and sectors as efficiently as possible. Close cooperation in turn helps transfer new ideas from research into innovative applications.

Strategic goals

2a. Make the Cluster more usable for players as a networking platform

Enabling players to network effectively remains one of the Cluster Management's core responsibilities. As such, the Cluster serves as the central networking platform for players in the healthcare industry in Berlin and Brandenburg. This is achieved by the Cluster Management providing continuous operational support and undertaking communications and public relations work, and by hosting regular specialist conferences and the Cluster's own conference. The Cluster will turn its attention to the networking needs of early career scientists by providing tailored services.

The Cluster's growing network is to be used more extensively in the future to find new cooperation partners as one of the main goals is to foster greater knowledge transfer between research and industry. One way of achieving this is to identify and establish consortia for German federal government and EU tenders.

To do this, suitable interfaces are identified and collaborative partnerships are developed between knowledge transfer facilities, universities, non-university research institutions and translational research centres. Additional matchmaking services also help players efficiently find partners for collaborations.

The aim is to foster more effective networking and cooperation between players so that they can collectively tackle issues around regulatory and logistical processes and digitalisation.

2b. Deepen the dialogue between Berlin and Brandenburg

Over the years Berlin and Brandenburg have cultivated a successful partnership to tackle healthcare issues together, creating the outstanding collaboration we see today. Its basic principle is to link up the region's strengths so that they can collectively develop solutions to the major challenges in healthcare. The collaboration relies on key resources to make it work: the capital region's international character, its combination of urban and rural spaces, and the innovation-driven structure of its economy covering different regional focal points in certain industries.

The Cluster builds on, develops and consolidates targeted formats for dialogue between politics, government, science, business and associations in both states.

New and established formats, such as “future workshops”, are to be used to expand on and further develop topics relevant to regional dialogue. For example, the cross-sector interaction between inpatient and outpatient care in Berlin and Brandenburg is particularly pertinent. The dialogue also focuses on strengthening cooperation between economic development agencies in both states to attract new players in a targeted manner.

2c. Reinforce networks in the healthcare industry

The Berlin-Brandenburg Healthcare Region has benefited greatly from networks, clubs and associations in recent years. This includes professional networks, such as in glyco-biotechnology and bioinformatics, sector-specific networks, such as in diagnostics and nutrition, networks for researching and providing healthcare at state level, and regional associations at county and district level. National associations for the subsectors pharmaceuticals, biotechnology, digital health and medical technology have also become key players in the Cluster.

The Cluster will continue to reinforce these networks and provide guidance and support to help set up new ones. It continues to cultivate connections with existing associations and works to bring in new associations to collaborate with the Cluster.

2d. Generate cross-cluster innovations

The Cluster Healthcare Industries helps develop innovations at the interfaces between sectors within healthcare and other industries by ramping up cooperation with other clusters that are part of the innoBB 2025 strategy.

There have already been positive results from interfacing with the Cluster ICT, Media and Creative Industries and the Cluster Photonics, providing key interdisciplinary technologies for the healthcare industry (e.g. for diagnostics and imaging).

The aim with this goal is to develop new approaches by collaborating with other clusters, such as working with the cross-state Cluster Transport, Mobility and Logistics on questions of mobility for medicine and people, as well as the Brandenburg clusters Plastics and Chemistry and Metal. Materials clusters in particular have a key role to play in medical technology, and interdisciplinary research into the development of evidence-based approaches to nutritional medicine is also beneficial.

Furthermore, the Cluster Healthcare Industries aims to participate in Smart City and Smart Country initiatives to develop interdisciplinary projects.

2e. The Cluster network provides support to manage crises

The Covid-19 pandemic, which struck in spring 2020, has brought unprecedented challenges for our society, economy and healthcare system. Existing intensive care capacities had to be quickly increased, and personal protection equipment (PPE), disinfectants and medical equipment needed to be procured as a matter of utmost priority. It was, and continues to be, critical to develop and test robust diagnostic tools, vaccines and drugs to combat this new threat, not only in the capital region but across the world.

The coronavirus crisis has shown that healthcare cannot be viewed in isolation. Instead, it needs to be understood as a key part of the system that affects all areas of the economy, society and public life. It has also demonstrated that our pandemic preparedness needed, and still needs, a complete overhaul.

Cluster players are looking to develop workable solutions to tackle the current pandemic. Moreover, they are planning to concentrate their efforts on strengthening measures around pandemic awareness, focussing on health as a cross-sectoral topic. Their aim is to develop proposals for ways in which the Cluster's expertise and resources can be leveraged more quickly and effectively for the state and civil society.

Focal Area 3 – Digital Health

Digitalisation in healthcare offers huge potential for economic and scientific development. The availability of electronic healthcare data allows even large volumes of data to be regularly processed and analysed. This data needs to be stored in formats that are compatible with national and international standards so that they can be combined and shared between players. The key to building trust is to ensure that patient data is protected and kept securely and that patients have ultimate authority over their data.

AI promises to have major benefits for healthcare and is a core driver of digital transformation. There are a variety of players in the capital region that work extensively on AI applications for the healthcare sector. They include renowned universities and non-university research institutions as well as highly innovative, technology-driven businesses. The region is drawing on this expertise and its status as the German capital, which affords them access to key players and initiatives, to position itself as the world's leading location for digital healthcare solutions.

If innovative solutions and their business models are to have long-term impact and benefit people, they need to be integrated into holistic healthcare concepts. This requires new administrative and technical systems to be set up, while competency in applying and using healthcare innovations needs to be strengthened. Digitalisation also offers citizens new opportunities to take a greater role in looking after their own health.

Strategic goals

3a. Promote and use the potential of data science in research and industry

The Cluster benefits from the region's leading position in data-driven scientific research. The conditions are ideal for the Cluster to take an active role in shaping the digital transformation of healthcare and the healthcare industry.

This involves building on the region's position at the forefront of AI, data engineering systems and data analytics to create new value chains and networks.

The aim is to explore the full potential of data science in the healthcare sector, including the application of predictive models in medicine and bioinformatics, as well as the scope for self-learning systems, robotics and virtual reality technologies.

To carry out this work, the Cluster is increasing its cooperation with the relevant centres of excellence and collaborative platforms in the region.

3b. Promote interoperability and data integration

The Cluster supports measures to standardise data transfer and make software systems compatible so that digital innovations can be used to their fullest extent. This is the only way to ensure that data can be exchanged more extensively across functional areas, such as within a (smart) hospital, and that regional players can be networked digitally across sectors for the purpose of cross-institution electronic patient records.

There still needs to be greater efforts to ensure that citizens in particular benefit even more from digitalisation in the healthcare industry. This therefore requires technical, semantic, regulatory and organisational interoperability to be implemented in the capital region without delay to ensure that the region's healthcare IT systems can network with e-health services within Europe and on the international market.

The activities of the Cluster's players are subject to various statutory data protection regulations. The Cluster is strengthening cooperation with data protection officers with the main objective of guaranteeing data security and data sovereignty.

3c. Make data available for quality improvement in the healthcare sector

Digitalisation can help improve healthcare processes from developing drugs to treatment, care and rehabilitation, opening up the possibility of developing solutions to improve quality and efficiency despite growing patient numbers and an ageing society.

The Cluster is working to ensure that patient data can be combined in a structured format and made available to various service providers on an ongoing basis.

Personalising medicine and treatment, for instance, can help improve health outcomes and make treatment more cost efficient.

Leveraging data in this way can also facilitate the development of a population health management programme, care communities and healthcare databases, such as the joint clinical cancer register, in the Berlin-Brandenburg Healthcare Region.

3d. Increasingly apply digital solutions to products and methods

In addition to helping healthcare providers, the responsible use of patient data is intended to make it easier for innovative new products to be researched, developed and validated.

The increased use of data analytics technologies, data engineering systems, AI and machine learning offers the opportunity to create value and speeds up progress when applied in drug development, clinical studies and in the research and development work to make personalised treatments possible. These technologies could enable patients participating in clinical studies to be treated at home (remote decentralised clinical trials), for instance.

There is also support for proven digital solutions from other sectors to be transferred for use in the healthcare industry. These digital aids and processes can help empower disabled people and those with chronic illnesses, for example, and give them more autonomy.

3e. Strengthen competency in applying and using healthcare innovations

New digital innovations need to be integrated into existing routines and workflows so that they can be used widely. There also needs to be greater uptake among users.

The Cluster is therefore working to improve communication with users (patients, nursing staff, doctors, etc.). This will focus on involving users and patients in development processes, learning from real-life use, and addressing questions of data privacy.

The Cluster is also supporting the development of new digital healthcare applications and products. Patients and healthcare providers are to receive targeted support for using them, and more information will be made available for users.

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Focal Area 4 – Capital. Model. Regions.

The Cluster supports the creation of real-world laboratories and test beds in the capital region to develop and test innovations in real-life applications.

With an advanced technology and research landscape, a strong digital economy and extensive research capacities in social sciences, the Berlin-Brandenburg region has all the main ingredients to start testing innovative healthcare concepts in real-world environments. Such innovations are particularly important for addressing regional differences between infrastructures in rural areas and in the Berlin metropolitan area.

Integrated care is the focus of future healthcare. Cooperation and digital networking between all specialist disciplines and sectors can be further developed as a real-world laboratory in Berlin-Brandenburg. The Cluster Healthcare Industries uses the potential of the capital region to test sustainable and future-oriented care approaches, cooperation strategies and logistics solutions. In this way it is planned that the capital region be able to adopt a model character on both the national and international level and deliver stimulus for other regions.

Strategic goals

4a. Establish and expand cross- and trans-sector supply chains

To make healthcare services efficient across the whole Berlin-Brandenburg region, there needs to be a close network of all healthcare players. From outpatient care and acute hospital care to rehabilitation and home care, providers need to work more closely together to improve the quality of their services.

To this end, players from the Cluster are already testing the concept of healthcare support workers, who guide the patient throughout their care and treatment process in a specific indication, for example.

Given the worsening skills shortage, experiments with new forms of cooperation and delegation for remote areas in particular are also key to this goal. Model applications of healthcare chains can be developed and tested, for instance, as part of projects financed by the innovation fund of the Gemeinsamer Bundesauschuss (German Federal Joint Committee, GBA) as per Volume 5 of the German Social Security Code (SGB V).

4b. Develop innovative approaches for prevention, treatment, rehabilitation and care

Digital solutions have a critical role to play, especially ones that enable healthcare services to be delivered from anywhere and offer services for the ageing population.

The potential of "connected health"[8] to record and analyse everyday health-related data is to be more widely used, for example, and the possibilities for remote diagnosis and treatment are to be explored more extensively. Furthermore, ambient assisted living services are to be further developed through interfaces with the care sector.

Model care communities are emerging as a key scheme to bolster social care on a day-to-day basis. The aim is to make innovative technology an everyday part of care.

With non-communicable, largely chronic diseases on the rise in ageing populations, the possibilities offered by innovative approaches to preventive medicine are shifting more and more into focus. This requires services to be developed that use structural and behavioural prevention strategies and are targeted at different age groups and different life stages. The fundamental potential of exercise and healthy eating should also be taken into account here, reflecting the scientific and professional expertise in the capital region.

Research into healthcare services provides a solid scientific foundation to plan pilot projects exploring such areas. The Cluster also helps examine aspects of health economics in analyses of innovative healthcare concepts already in development so that it can determine their added value for the healthcare system at an early stage.

4c. Develop and test new mobility and logistics solutions

Many areas of the healthcare sector require innovative solutions in mobility and logistics to ensure the provision of medical treatment and care in the future. This is firstly due to the increasing number of people with limited mobility due to illness and care needs. Secondly, there are challenges facing rural areas from a declining and, at the same time, ageing population combined with limited healthcare and transport infrastructure.

This is why the Cluster supports the development of new and sustainable concepts in mobility and logistics. The logistics processes used in the healthcare industry and the provision of care need to be revisited and improved. New logistics business models are to be drawn up at the different interfaces where companies, service providers and patients interact. These models will then be developed as pilot projects in the region.

8 The aim of "connected health" is to help patients achieve healthy lifestyles and use digital networking in healthcare to reinforce preventive approaches. Its methods include processing data using wearable devices and environmental sensors, basic statistical methods, and methods from machine learning and pattern recognition in large-scale data sets.

4d. Use the strengths in prevention and care for medicine and healthcare tourism

Collective prevention efforts centre around the development of services for the working population. Medical tourism plays a key role in Berlin and Brandenburg, and it will continue to be served by a wide range of formats and products offered by players in the future. The Cluster facilitates the networking and cooperation of players in medicine and health tourism.

In addition, dialogue with other subsectors of the healthcare industry is to be supported so that innovative applications can be used in medical tourism to their full potential. One possible example is the use of remote monitoring[9] and digital tools to provide remote treatment in follow-up care and rehabilitation.

Focal Area 5 – Work environments

To ensure the capital region's future performance, the Cluster Healthcare Industries focuses on the healthcare region's qualified workforce in the focal area "Work environments".

New working concepts are being developed – termed "new work" – where social change meets the new needs and requirements from employers and employees alike regarding flexibility. Career paths are become more diverse, digitalisation is changing the way in which work is organised, and new skills requirements and profiles are emerging. The key issue across sectors is how to make the new work environments a place that promotes health. To support these developments, the Cluster is helping create a dialogue around "Work 4.0" to set the agenda going forward.

In this regard, it is crucial for the performance of the health region that there is an appetite to work in the healthcare industry and that the industry retains its skilled employees. Life science regions around the world are developing into extremely attractive locations, drawing in investment and talent. Attractive career prospects, flexible working hours, a stimulating and collaborative working environment and even sustainability and gender equality in the workplace are increasingly proving to be success factors in talent marketing, recruiting and staff retention. These are crucial for combating the shortage of skilled employees in many industries and enhancing the capital region's appeal.

9 Remote monitoring enables service providers to constantly monitor a patient's condition at home using telemedical applications and technologies.

Strategic goals

5a. Test new forms of work and design them in a way that promotes health

Following on from the exercise to stimulate a national dialogue on the topic of “Work 4.0”, the Cluster supports testing new approaches to work in the healthcare industry. In today’s digital age, agile processes, structures and working practices are now essential for long-term success.

Employee perspectives and experiences are to be taken into account when drawing up innovative approaches to work, such as developing and setting up new digital and physical support tools at the interface between human and machine. These new applications seek to ease workloads in the healthcare industry and help employees to centre the patient more in their work.

Those working in care and shift work also need more flexible working hours, while employees need to improve their digital skills, and jobs need to adapt to new qualifications held by skilled employees.

The Cluster continues to reinforce healthcare operations management (HOM), focussing on strategies to implement HOM in small and medium-sized businesses, the growing significance of stress in the workplace and making the work environments healthy and socially sustainable in the age of “Work 4.0” and “new work”. Special attention is given to professions that are more likely to be exposed to risk (e.g. healthcare specialists) and vulnerable groups (e.g. older employees, people with chronic health conditions).

5b. Attract people to employment in the healthcare industry

To guarantee top-quality care and a thriving healthcare industry in the future, the Cluster helps spotlight healthcare professions and showcases the abundance of educational and training opportunities that can be taken to qualify for work in the healthcare industry. In doing so, the Cluster’s players also seek to achieve decent and healthy working conditions.

People of all ages and nationalities are actively targeted with formats specific to their demographic. This includes school children with the aim of sparking their interest in science subjects and healthcare professions. Perspectives of migrants in healthcare professions are to be highlighted too.

There will also be a greater focus on the diverse range of volunteering opportunities. These include volunteer carers who help very elderly people to stay mobile in their day-to-day lives, sponsors for children whose parents have mental health conditions, and volunteer visitors for elderly people in inpatient and outpatient care.

5c. Support companies in acquiring and retaining skilled employees

The Cluster aims to target highly educated people in a bid to boost interest in working in the Berlin-Brandenburg region. To attract young talent, the interesting careers and job opportunities available in the region are to be highlighted, including the vibrant, interdisciplinary and cutting-edge world of the industrial healthcare industry.

The Cluster will also help companies to reach skilled workers outside of Germany and to improve framework conditions so that they remain in the region in the long term. Recognising international qualifications in Berlin and Brandenburg is crucial to attracting international talent.

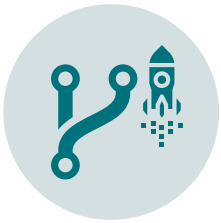
There is also support for in-house training, enabling employers in the healthcare industry to open up new areas of activity and career options.

5d. Encourage dialogue between training institutes, social partners and companies in the healthcare industry

Academic and professional education and training institutes need to prepare for changes to job specifications in the healthcare industry.

The Cluster works with stakeholders such as employer associations, unions and professional bodies to foster dialogue around adapting curricula and the focus and development of study and training programmes in relation to the healthcare industry. This includes teaching digital skills more effectively and extensively.

At the same time, permeability between professions needs to be encouraged, and there needs to be support for new practice-oriented career profiles in order to respond to increasing interdisciplinarity and the profound changes to the work environments 4.0.



Focal Area 6 – Spin-offs and start-ups

Berlin-Brandenburg is known as the home of a vibrant start-up scene that attracts bright minds, venture capitalists and players with business start-up services to the region. Europe enjoys a much higher than average availability of venture capital and a high-density start-up landscape, including numerous biotech start-ups and spin-offs from universities and non-university research institutions.

Even though the capital region has the most dynamic and attractive start-up ecosystem in Germany and is a leading location in Europe, the life sciences and healthcare scenes still need to be developed further.

Players in the Cluster Healthcare Industries will therefore work on making start-up conditions even more fertile for new businesses to flourish, supporting the rollout of spin-offs and helping them to access and become established in regional networks.

Strategic goals

6a. Strengthen exchange between start-ups and established players

Close cooperation between well-established players and start-ups accelerates the learning process, unlocks potential growth and encourages development even for established businesses.

The Cluster is creating more localised places where seasoned entrepreneurs, healthcare providers, start-ups and prospective new businesses can meet to share expertise and information, bringing together industry experience and innovation more effectively.

The Cluster helps set up digital platforms and in-person events where young companies can connect with other experts from healthcare, such as hospitals, universities, research institutions, regulatory bodies, industry and other players. This will enable young companies to take advantage of others' expertise and find solutions to challenges such as in translational medicine, (clinical) studies and product validation.

6b. Provide information relevant to founding a business

Entrepreneurs need specialist industry knowledge to successfully overcome obstacles and setbacks when establishing a new business venture, something which is especially true in the healthcare sector.

The Cluster supports starts-ups and prospective start-ups by providing information about entering the healthcare system, regulatory requirements, clinical evidence and options for financing and compensation in German and international healthcare markets.

Start-ups also receive support to help draw up business models and are signposted to additional advisory services.

6c. Support young companies in their development

Companies in the start-up phase, or companies that are still relatively new to the market, need an environment that will encourage growth in line with their specific requirements. The Cluster Management signposts events and advisory services and is connected with accelerators, technology parks and hubs.

Another priority for the Cluster is fostering dialogue and working together to implement German and European regulatory stipulations effectively.

To bolster the financing available locally, more national and international investment and financial backing for the region are to be obtained. This will also involve maximising the use of current state, federal and EU funding opportunities for young companies. Regional banks offer local programmes that support entrepreneurs and start-ups.

6d. Strengthen infrastructure for young companies

The Cluster fosters collaboration between different start-up infrastructures, such as accelerators, technology parks, hubs and co-working spaces, to galvanise the capital region’s start-up scene to work even more closely with the healthcare industry.

There are substantial public funds available for such infrastructures, and private investors also recognise that Berlin-Brandenburg is an attractive location for these projects, so they also invest in developing core infrastructures, such as commercial spaces, business expertise and the availability of equipment and materials.

The region’s offering is to be regularly reviewed and adapted to suit the needs of start-ups in particular.

Focal Area 7 – Internationalisation

Value chains and networks are more global than ever before, not least due to digitalisation. This being the case, raising the profile of our location internationally is pivotal to keeping the capital region's innovation systems competitive and attractive.

The region's healthcare industry has a strong skills portfolio and an innovative spirit that place it in the same league as international competitors.

The region seeks to gain more recognition internationally, and innovations created here are to receive support to be publicised to a greater extent nationally and internationally. The Cluster's increased cooperation with other internationally leading healthcare locations will also help achieve this.

The capital region is building its reputation in global health. As a key location for solutions to global health challenges, the region will seek out players from across the world.

Strategic goals

7a. Strengthen the international profile of the Capital Region

Consistent use of the HealthCapital brand aims to boost recognition of the region and the products created here.

Moreover, the region will gain exposure from Cluster players appearing at key trade shows and congresses. By supporting and participating in the Cluster's work, selected experts from the fields of business, science and politics can help raise the region's profile and boost its appeal.

Establishing best practices in the region that the Berlin-Brandenburg healthcare industry can exhibit as models for success will attract the attention of companies, start-ups and investors. These models need to be publicised, especially those in precision medicine or new digital health solutions, to raise the capital region's profile and make it well known as a hub for healthcare innovations. To this end, the Berlin-Brandenburg healthcare industry's strengths and USPs are highlighted and communicated to specific national and international players.

7b. Learn from Best Practice examples while continuing to develop the Berlin-Brandenburg Healthcare Region

The capital region is open to new ideas, and successful regions around the world offer inspiration on how to create a productive environment for competition, develop innovations in care or modernise and digitise the industrial healthcare industry. These ideas will be examined and taken on board if appropriate.

The region's strengths, weaknesses and challenges are to be evaluated against international competitors, for example as part of an international benchmarking study, to enable us to assess more effectively how the healthcare region is performing by comparison. Such a study could set benchmarks for performance in the healthcare industry and in translation and transfer, providing an objective basis for the region's claim to excellence in the healthcare sector.

7c. Develop the capital region as a key location for creating solutions to global health challenges

Under the heading of "global health", issues around equal access to healthcare in a global context are being explored as part of studies, research and practical exercises. The Cluster is continuing to build the capital region's reputation as a leader in global health, for example by holding renowned international conferences.

Strengthening cooperation between federal institutions, international foundations and non-profit organisations is one of the ways in which the Cluster is helping to further embed the topic in the region's expertise.

Beyond this, we need to bolster communication platforms to address global health challenges and provide support to regional companies in the development of products and services for global health.

7d. Expand global networking and international cooperation

In a globally networked healthcare industry, new bridges of cooperation need to be built with international hubs, networks, universities, research institutions and companies.

The aim is to launch new international projects and collaborations, which in turn will strengthen the region's position on the global market and raise the region's profile internationally.

In addition, cooperating closely with various economic development agencies and improving the requirements for funding applications seek to attract more prospective start-ups from around the world to the region.

VIII. Implementing the master plan

The key focal points and goals contained in this master plan underpin the Cluster's joint strategy between the industrial healthcare industry, players from healthcare and science, economic development agencies and the states of Berlin and Brandenburg.

The key focal points and goals are implemented collectively with support from **Cluster Management** in the economic development agencies of Berlin and Brandenburg and the **experts who work in a voluntary capacity in the Cluster**.

The Cluster Healthcare Industries Berlin-Brandenburg places the need for greater interdisciplinary perspectives and approaches at the heart of this new master plan. On this basis, it was decided that the Cluster will be structured around two fields of action in the future instead of four. The combined strengths of the two fields of action will make it easier to cooperate beyond the usual borders between industries and create a space for flexible, interdisciplinary cooperation.

To achieve the goals set, specific measures and activities will be drawn up and implemented in two ways. One way will involve both fields of action and the teams working on their specific subjects, while the other will draw on support from Cluster Management and its regular tasks.

All Cluster players are invited to help develop and prioritise measures to achieve the goals in the seven key focal points. They are also welcome to join teams to work on current issues that are relevant to them.

Management

Cluster Management

The Cluster Management guarantees active support for the implementation of the master plan. It works at the interface between the honorary body, other Cluster Management in the two economic development agencies and the local governments of Berlin and Brandenburg. It acts as **the** central contact point for players in the Cluster.

Its tasks include the implementation of strategic activities as well as the dissemination of results from the Cluster. The Cluster Management also supports individual topic teams that work in or across the fields of action, and it provides guidance for those who initiate work themselves. It provides a broad range of support services and formats to implement group work.

The Cluster Management comprises the cluster managers, field of action managers and project managers.

Steering committee

The steering committee for the Berlin and Brandenburg economic development agencies, representing both the Cluster Spokesperson and Cluster Management, is responsible for the strategic management of the Cluster's activities.

Voluntary body

Expert panel

A panel comprising experts who work with the Cluster in a voluntary capacity is set up during the implementation period for the master plan. Together the experts on the panel represent the whole spectrum of the capital region's healthcare industry, health research and healthcare provision. The panel is tasked with providing ideas for the focal areas and fields of action and introducing new trends into the Cluster's work that will set the agenda for the future. Panel members are experts in their field and act as thought leaders for the Cluster Management team, who they work with on an ongoing basis.

Advisory board

The advisory board provides stimuli for the Cluster by suggesting topics that it should target in its focal areas, strategic goals and activities in the medium term.

Cluster Spokesperson

The Cluster Spokesperson acts as a representative both internally and externally for the topics covered by the Cluster. The spokesperson is appointed by the local administrations involved in the Cluster. One area that the spokesperson is responsible for is setting strategic directions for their work with Cluster Management.

Methods: fields of action and topic teams

Going forward, the Cluster will work around two fields of action: "Life Sciences and Technologies" and "Innovative Care".

The task of the two fields of action is to drive forward the focal areas and strategic goals of the master plan in structurally operative work, to increase the players' innovation momentum, and to promote the exchange and networking within and between industries and clusters. Networking activities and industry events take place in the fields of action for this reason.

The fields of action are responsible for the continual communication of Cluster offers and disseminate knowledge from ongoing activities and topic teams.

Field of action “Life Sciences and Technologies”

The field of action “Life Sciences and Technologies” largely reflects the industrial healthcare industry, specifically covering biotechnology, the pharmaceutical industry, medical technology and digital health companies.

Life sciences in the capital region are characterised by an extraordinary strength in the following technologies and topic fields:

Figure 5: Technologies and topic fields in life sciences

Field of action “Innovative Care”

The field of action “Innovative Care” represents a number of players active in various care sectors:

Figure 6: Care sectors

Topic teams

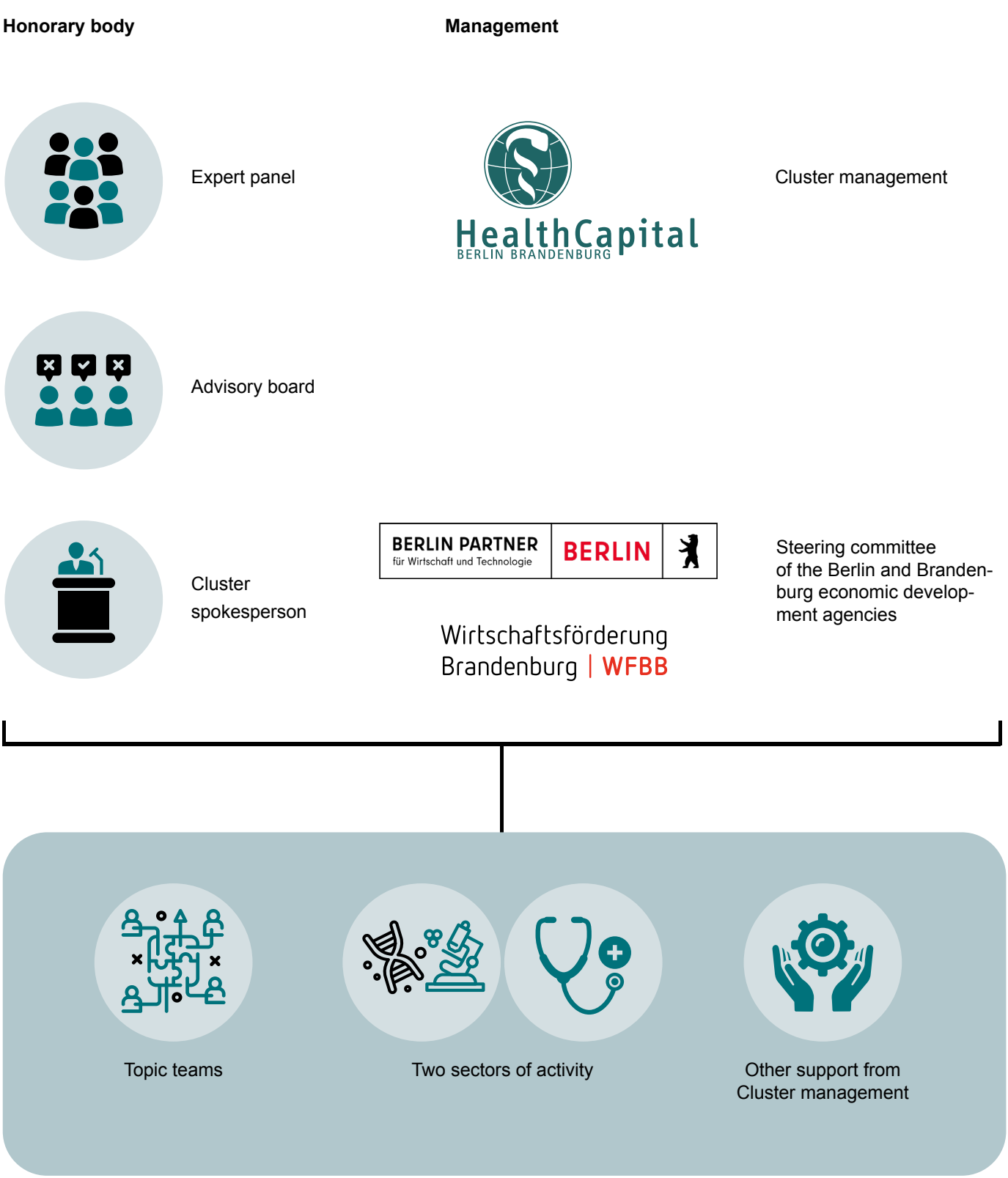
With the ongoing development of innovation topics, challenges and stakeholder groups, there needs to be a way of regularly prioritising and working on particular focal points and Cluster activities. The new format for the topic teams addresses this need and implements flexible working methods as requested by players during the process of updating the master plan.

Topic teams are a time-limited working format in which groups of experts work across sectors or within particular fields to develop and implement activities based around the goals set out in the master plan.

The experts in the topic teams oversee the implementation of the goals that the group sets and make their own resources available to the group. They can call on the full-time field of action managers to give them organisational support. The Cluster Management also launches the topic teams and guides their work.

Topic teams serve a variety of purposes. As a working format, they strengthen dialogue between experts, facilitate the joint development and implementation of projects, positions, proposals and concepts as well as the organisation of specific events. All topic teams base their activities on their shared vision and on the focal areas and strategic goals set out in the master plan for the Berlin-Brandenburg health region.

Figure 7: The Healthcare Industries Cluster's working structures



More information:

List of healthcare research institutions in the capital region:
https://www.healthcapital.de/files/documents/Publikationen/LS-Report_Adressen_dp_final_mai_2020.pdf

link: factsheet of the HealthCapital Cluster
https://www.healthcapital.de/mediathek/fact-sheet/

link: cluster homepage
www.healthcapital.de

Appendix
Overview of the focal areas and strategic goals

1 Innovation and Technologies	2 Networking and Transfer	3 Digital Health	4 Capital. Model. Regions.
a Reinforce scientific excellence in life sciences, medicine and technical fields and harness it for innovative technologies and processes	a Make the Cluster more usable for players as a networking platform	a Promote and use the potential of data science in research and industry	a Establish and expand cross- and trans-sector supply chains
b Strengthen translational and precision medicine	b Deepen the dialogue between Berlin and Brandenburg	b Promote interoperability and data integration	b Develop innovative approaches for prevention, treatment, rehabilitation and care
c Establish sustainable research, development and production processes	c Reinforce networks in the healthcare industry	c Make data available for quality improvement in the healthcare sector	c Develop and test new mobility and logistics solutions
	d Generate cross-cluster innovations	d Increasingly apply digital solutions to products and methods	d Use the strengths in prevention and care for medicine and healthcare tourism
	e The Cluster network provides support to manage crises	e Strengthen competency in applying and using healthcare innovations	

● Enhance innovation
● Strengthening cross cluster
● Open for innovative processes
● Priorise sustainable innovations
● Expand the international profile

5 Work environments	6 Spin-offs and start-ups	7 Internationalisation
a Test new forms of work and design them in a way that promotes health ●●●○○	a Strengthen exchange between start-ups and established players ●●●○○	a Strengthen the international profile of the Capital Region ●○○○●
b Attract people to employment in the healthcare industry ●○○○●	b Provide information relevant to founding a business ○○●○●	b Learn from best practice examples while continuing to develop the Berlin-Brandenburg Healthcare Region ●○○○●
c Support companies in acquiring and retaining skilled employees ○●○○●	c Support young companies in their development ○●○○●	c Develop the capital region as a key location for creating solutions to global health challenges ●○●○●
d Foster dialogue between educational institutions, social partners and businesses in the healthcare industry ●○●○○	d Strengthen infrastructure for young companies ○○●○○	d Expand global networking and international cooperation ○●●○●

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