



# HoCare

## Interreg Europe

**Innovative solutions for Home Care by strengthening quadruple-helix cooperation in regional innovation chains**

## **CZECH REPUBLIC REGIONAL REPORT**

Elaborated in the framework of the additional activities' implementation (IE  
5<sup>th</sup> Call)

**Date: 23.08.2022**

**Report Prepared by: DEX Innovation Centre**

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## **A) BACKGROUND**

Interreg Europe HoCare project aimed at boosting the delivery of innovative home-care solutions. In line with the smart specialization strategies of the partner regions, the project contributed to the optimization of Structural Funds investments to strengthen regional innovation systems in the health care sector by fostering quadruple-helix cooperation in regional innovation chains.

The HoCare partnership is constituted by the Nicosia Development Agency (ANEL) - CY, Development Centre of the Heart of Slovenia - SI, Business Agency Association - BG, National Institute for Research and Development in Informatics - RO, Lithuanian Innovation Centre - LT, National Directorate General for Hospitals (former National Healthcare Service Center) - HU, IDERAM Business Development Institute of the Autonomous Region of Madeira - PT and DEX Innovation Centre - CZ.

The four-year project (01/04/2016-31/03/2020) was evenly divided into 2 phases. Phase 1 focused on capacity building through interregional exchange of experience. Core of the learning journey was sharing of 33 good practices (available at: <https://www.interregeurope.eu/hocare/>) with replication potential in other regional settings to improve the innovation delivery policies in the e-health sector. The HoCare project's main outcomes were specifically: 8 Regional Situation Analyses, 59 policy learning events (incl. 3 International Thematic Seminars and Workshops), 3 Joint Thematic Studies, 3 Policy Transfer Reports and regional Action Plans transforming the project learnings into implementation-oriented actions to improve the regional ecosystem by empowering citizens and contributing to a healthier society. Phase 2 concerned the monitoring of the Action Plans' implementation by the European Structural and Investment Funds (ESIF) Managing Authorities targeting the improvement of their regional Policy Instruments (ESIF OPs). Aim was to improve the strategic focus, management, or implementation of new projects of 8 ESIF Policy Instruments (PIs) to positively impact the regional utilization of a total of €22,500,000 for the benefit of the socio-economic sector (citizens & SMEs).

The extension of HoCare project was requested in the framework of IE's 5th Call for proposals to map the response of regional/national policies to the impact of COVID-19 crisis in the subject of the project (delivery of Innovative solutions for Home Care by strengthening quadruple-helix cooperation in regional innovation chains). As a result, the objectives set for this new initiative are:

- to further exchange experiences on the way the crisis impacts the issue addressed and on possible measures to face and recover from the crisis,
- to further improve regional development policies for better facing and faster recovering from this unprecedented situation.

Exchange of experience continues based on the flow of the HoCare project 1st Phase's activities to address the impact of the crisis on the topic of the project. To achieve this, a specific set of activities is planned to be implemented that (among others) includes the preparation of 1 regional report per PP to map the impact of the COVID-19 crisis on the project's subject.

## **B) OBJECTIVE**

Through the present Regional Report information is collected from the region about a) the status of Home Care R&I and b) the status of quadruple-helix cooperation in R&I. The information included in Partners' Regional Reports as well as the identified Regional Good Practices will be the basis of the new exchange of experience process on the way the crisis impacts the issue addressed and on possible measures to face and recover from the crisis. Once again, the objective is to further improve regional development policies for better facing and faster recovering from this unprecedented situation.

## **C) METHODS / RESOURCES TO COLLECT INFORMATION FOR THE REPORT**

- ☐ Meetings / Workshops with stakeholders
- ☐ Desk research
- ☐ Meetings / Workshops with the Managing Authority of your Policy Instrument
- ☐ Participation in regional events relevant to the subject
- ☐ Relevant recent reports, articles, strategies, or any other relevant document

## 1) POLICY INSTRUMENT<sup>1</sup>

<b>Name of the Policy Instrument addressed</b> (in English)	ESI funds – Operational Programme Technologies and Application for Competitiveness (OP TAK)
<b>Name of the Policy Instrument addressed</b> (in regional language)	ESI funds - Technologie a aplikace pro konkurenceschopnost (OP TAK)
<b>Name of the relevant thematic Priority Axis</b> (supporting R&I activities)	Priority 1 Strengthening the performance of enterprises in the field of research, development and innovation and their digital transformation
<b>Specific objectives of the given Priority Axis</b>	Specific objective 1.1 - Development and strengthening of research and innovation capacities and introduction of advanced technologies  Specific objective 1.2 - Reaping the benefits of digitization for citizens, businesses, research organizations and public authorities
<b>Geographical Coverage</b> (National, Regional, if other please explain)	National
<b>Managing Authority</b>	Ministry of Industry and Trade
<b>Is this the same Policy Instrument (PI) your organization addressed during the implementation of the initial HoCare project?</b> (Yes / No)	No
<b>If 'Yes', please explain why</b>	

<sup>1</sup> **Policy instrument:** a means for public intervention. It refers to any policy, strategy, or law developed by public authorities and applied on the ground in order to improve a specific territorial situation. In most cases, financial resources are associated with a policy instrument. However, an instrument can also sometimes refer to a legislative framework with no specific funding. In the context of Interreg Europe, operational programmes for Investment for Growth and Jobs as well as Cooperation Programmes from European Territorial Cooperation are considered to be policy instruments. Beyond EU cohesion policy, local, regional or national public authorities also develop their own policy instruments. <https://www.interregeurope.eu/help/glossary/#index-P>

<b>you have chosen to still address the same PI? (max. 1000 characters)</b>	
<b>If 'No', please explain why you have chosen to change your PI? (max. 1000 characters)</b>	<p>Since the new programming period has started, the Policy Instrument has been changed. The Ministry of Industry and Trade has also been working for a long time to support innovation based on the implementation of operational programs from the ESIF. As a response to the previous OP Enterprise and Innovation for Competitiveness, the OP Technology and Applications for Competitiveness (OP TAK) was prepared for the programming period 2021-2027. Therefore, this new OP has been selected as a new Policy Instrument.</p> <p>The Ministry of Industry and Trade of the Czech Republic is one of the most important state administration authorities dedicated to innovation at the level of SMEs and R&amp;I. For this reason, the selection of the Ministry of Industry and Trade as the Policy Instrument was re-established as part of the preparation of the regional report.</p>

## 2) OTHER RELEVANT POLICY INSTRUMENTS

<b>Name of the Policy Instrument addressed (in English)</b>	Strategic Framework for the Development of Health Care in the Czech Republic until 2030 - Implementation Plan for the Digitization of Health Care
<b>Name of the Policy Instrument addressed (in regional language)</b>	Strategický rámec rozvoje péče o zdraví v České republice do roku 2030 – Implementační plán Digitalizace zdravotnictví
<b>Name of the relevant thematic Priority Axis (supporting R&amp;I activities)</b>	Specific Objective 2.3 Digitalization of Health Care
<b>Specific objectives of the given Priority Axis</b>	<p>An important part of the Health 2030 Strategy is a specific objective 2.3 Digitalization of Health Care. It provides a complex structure of the objectives which are related to both topics - quadruple-helix ecosystem and Home Care R&amp;I. Below you can find a list of the relevant objectives:</p> <p>2.3.8 Promoting the use of new digital technologies and practices in personalised medicine, home care, integrated care</p> <p>2.3.9 Promoting the use of artificial intelligence in healthcare and the implementation of the related services</p>

	<p>2.3.10 Development of scientific research and innovation base for digitalisation of healthcare and development of knowledge base for digital healthcare</p> <p>2.3.12 Promoting mobile healthcare (mHealth) and telemedicine technologies at all levels of healthcare provision, especially for end-users (hospitals, ambulances, patients)</p> <p>2.3.13 Developing platforms for communication and coordination between public administration, industry, and academia for the development of digital services in health and healthcare</p> <p>2.3.14 Development programmes for general and specific digital literacy of healthcare workers</p> <p>2.3.15 Programmes to build trust in digital health services among citizens and health professionals</p>
<p><b>Geographical Coverage</b> (National, Regional, if other please explain)</p>	<p>National</p>
<p><b>Managing Authority</b></p>	<p>Ministry of Health</p>
<p><b>Please explain why this Policy Instrument is relevant to Home Care R&amp;I and/or quadruple-helix cooperation?</b> (max. 1500 characters)</p>	<p>It represents the overarching conceptual material of the Ministry of Health for the next 10 years. Because of the epidemiological situation related to COVID-19, the Ministry of Health decided to update the Strategic Framework for Health 2030 and the priority areas defined therein to place greater emphasis on the protection and promotion of public health. Among the priority areas that currently have the highest potential for improving the health of the population of the Czech Republic and at the same time are crucial for coping with the current trends of socio-economic development, i.e. demographic changes and rapid technical and technological progress is the digitalization of health care. Innovative digital solutions will help promote the health and quality of life of citizens and enable more efficient ways of organizing and delivering health and social services. The implementation plan is valid from 11 January 2021 and is thus a direct response to COVID-19.</p> <p>The implementation plan according to the above structure of sub-objectives assumes that the period after 2020 will be characterized by the emergence of new digital technologies and procedures in the field of personalized medicine, clinical applications of artificial intelligence, practical applications of shared health record models. Increasingly, mobile</p>

	<p>health (mHealth) and telemedicine technologies will be involved in health care. This is an opportunity for Home Care R&amp;I and actors who are part of the quadruple helix ecosystem.</p> <p>It is also essential to support solutions based on telemedicine and mHealth, which will facilitate healthcare in situations where it is objectively not possible or desirable to have physical contact between the patient and a healthcare professional. At the same time, objective 2.3.10 Development of scientific research and innovation base for digitalisation of healthcare and development of knowledge base for digital healthcare is envisaged, which creates the right conditions for Quadruple-Helix.</p>
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<b>Name of the Policy Instrument addressed</b> (in English)	The National Research and Innovation Strategy for Smart Specialisation of the Czech Republic 2021 – 2027 (National RIS3)
<b>Name of the Policy Instrument addressed</b> (in regional language)	Národní výzkumná a inovační strategie pro inteligentní specializaci České republiky 2021 – 2027 (Národní RIS3)
<b>Name of the relevant thematic Priority Axis</b> (supporting R&I activities)	Thematic Priority: Smart Specialisation
<b>Specific objectives of the given Priority Axis</b>	4.1 Advanced medicine and pharmaceuticals
<b>Geographical Coverage</b> (National, Regional, if other please explain)	National
<b>Managing Authority</b>	The Ministry of Trade and Industry
<b>Please explain why this Policy Instrument is relevant to Home Care R&amp;I and/or quadruple-helix cooperation?</b> (max. 1500 characters)	<p>This strategy recognizes that the Czech Republic faces the challenge of demographic change in the form of population ageing. As a consequence of an ageing population, there will be a change and increase in demand for new types of services for older people, particularly in the health and social services sector, which is closely linked to home care. SWOT opportunities for the electrification of the health care system in connection with the forthcoming Act on the electrification of the health care system and related ICT solutions.</p> <p>The combination of advanced medicine and digital technologies is essential to address the impact of the above trends and the sustainability of health systems. The development of information and communication systems in the healthcare sector enables, among other things, the wider</p>

	<p>application of distance principles in healthcare and medical care (telemedicine) or the development of personalized medicine.</p> <p>Progressive digital technologies such as artificial intelligence (AI) and digital security and connectivity are increasingly being applied to diagnostic devices and medical procedures. Current R&amp;D&amp;I projects by healthcare and life sciences companies addressing AI are focused on machine learning, digital data (image) analysis, and home care. Artificial intelligence is specifically named as a research topic for application in-home care.</p> <p>Although the number of such projects is not yet very high, the strong knowledge base in medical sciences and computer and technical sciences, together with the high number of research-active companies in electronics and ICT, creates the conditions for these progressive technologies to find wider application in health technology and medical care, for example in telemedicine, robotic and intelligent systems, or in information and communication systems in healthcare or the field of secure communication and biosecurity.</p> <p>Recommendation: Stimulate the creation of new companies based on R&amp;D findings, especially from public research, which has the potential for application in health and medical care (including the implementation of advanced materials and technologies using artificial intelligence and ICT).</p>
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<b>Name of the Policy Instrument addressed</b> (in English)	The National Recovery Plan of the Czech Republic for 2021
<b>Name of the Policy Instrument addressed</b> (in regional language)	Národní plán obnovy ČR
<b>Name of the relevant thematic Priority Axis</b> (supporting R&I activities)	1 Digital Transformation 5 Research, development and innovation 6 Population health and resilience
<b>Specific objectives of the given Priority Axis</b>	1.1 Digital services to citizens and business 5.1 Excellence in research and development in priority areas of public interest in the health sector) 6.1 Increasing the resilience of the health care system
<b>Geographical Coverage</b> (National, Regional, if other please explain)	National

<b>Managing Authority</b>	The Ministry of Trade and Industry
<b>Please explain why this Policy Instrument is relevant to Home Care R&amp;I and/or quadruple-helix cooperation?</b> (max. 1500 characters)	<p>The structure of the document is divided into pillars and further broken down into individual components. Three pillars, in particular, have been identified as relevant to the subject matter - 1. Digital Transformation and 6. Population Health and Resilience. Marginally, also Pillar 5 Research, Development and Innovation.</p> <p>Under Pillar 1, it is possible to identify component 1.1 Digital services to citizens and businesses. A key aspect of the digitalisation of the health sector is the reform in the form of the launch of a coordinated digital transformation that will change access to health services including home care. From the perspective of the development of Home Care, the document mentions the support of innovative projects, especially telemedicine, which brings new, more efficient procedures to the health sector, which have proven particularly effective in times of pandemics. An essential component for health service providers is the provision of cybersecurity and the protection of personal data.</p> <p>Mention is made of the aspect of cooperation with the private sector, which has extensive experience in implementing modern technologies.</p> <p>A key prerequisite for development in innovation and the use of advanced technologies is a functioning research, development and innovation ecosystem. For this reason, the document includes component 5.1 Excellence in R&amp;D in priority areas of public interest in the health sector.</p> <p>The investments defined in Component 5.1 will primarily support basic research in specific, state-defined health disciplines to build an excellent scientific platform necessary for innovation and for increasing the resilience of the whole health system.</p>

<b>Name of the Policy Instrument addressed</b> (in English)	ETA: Funding programme for Applied Research, Experimental Development and Innovation in Social Sciences and Humanities
<b>Name of the Policy Instrument addressed</b> (in regional language)	Program na podporu aplikovaného spoločenskovedného a humanitného výzkumu, experimentálneho vývoje a inováci ÉTA
<b>Name of the relevant thematic Priority Axis</b> (supporting R&I activities)	
<b>Specific objectives of the given Priority Axis</b>	
<b>Geographical Coverage</b>	National

(National, Regional, if other please explain)	
<b>Managing Authority</b>	Technology Agency of the Czech Republic
<p><b>Please explain why this Policy Instrument is relevant to Home Care R&amp;I and/or quadruple-helix cooperation?</b> (max. 1500 characters)</p>	<p>This multidisciplinary programme was approved by the Czech Government in September 2021. Multiple projects in the field of home care were supported by the ETA Programme.</p> <p>The programme will support the involvement of the social sciences and humanities in applied research, experimental development and innovation projects that are beneficial for maintaining and improving the quality of human life in response to dynamic social, economic, globalisation, cultural or technological changes.</p> <p>The relevance of this programme is concerning Home Care, as several projects implementing modern technologies have been supported, but it also creates conditions to support the linking of research organisations with customers of the outputs of applied research and innovation. This means mainly with enterprises, central and other state administration bodies and institutions established by them, local self-government units and institutions established by them, non-governmental non-profit organisations, organisations representing different segments of society and other entities operating in different social areas.</p> <p>The programme is implemented following the key strategic documents in the field of R&amp;D&amp;I currently in force at the time of announcement of individual public competitions and contributes to their implementation. In particular, the following documents - the Innovation Strategy of the Czech Republic, the National Policy of Research, Development and Innovation of the Czech Republic, the National Policy of Oriented Research, Experimental Development and Innovation, the National Research and Innovation Strategy for Smart Specialisation of the Czech Republic, the principles of the Industry 4.0 Initiative and other conceptual documents approved by the Government.</p>

### 3) THE HOME CARE RESEARCH & INNOVATION ECOSYSTEM

**Briefly describe the ecosystem in Home Care R&I in your region including the most significant main actors, infrastructure, resources, available public / private supporting services, networks, platforms and events)**



The home care ecosystem is a fairly narrow segment, but a fairly diverse one. On the practical side of home care, we can see clients and home care providers, on the organizational side health insurance companies, and state-level authorities. In this case, the Ministry of Health. This Ministry is the decision-maker in the field of digitalisation of healthcare and, consequently, in the related digitalization of home care. Home care, like healthcare, can be seen as a public service, as it is covered by public health insurance. A limit to the rapid development of the digitalization of healthcare and home care is the fact that healthcare is, in principle, a public service regulated by law and any development is problematic as it faces several legislative and budgetary constraints.

Home care is a relatively narrow segment of the health sector to be explicitly mentioned in strategic documents at the governmental level.

A problematic aspect of home care is the limited number of staff, and in addition, the lack of financial remuneration is a motive for labour outflow, e.g. to hospitals. For this reason, home care is also a promising area for the application of modern technologies and innovations, which represent an alternative approach to home care.

The introduction of modern technologies has the potential to reduce costs and increase the quality and efficiency of home health care services. Home care providers play a key role in this regard and in particular the following Home Care Association of the Czech Republic, which is a partner for negotiations with health insurance companies and the Ministry of Health.

The current society and its functioning is based on the use of modern technologies from the business helix. With the rapid emergence of ICT technologies into the mainstream, doors are opening in other fields. Several private companies are making inroads into fields like healthcare where solutions could be implemented to help and make life easier. The motive is to penetrate this specific public market.

Organizations from different fields/helix are partners of the state institutions. On the one hand, these are home care providers and their associations, which work in the field of home care traditionally with limited budgets and possibilities for the development of home care, on the other hand, development impulses come from business, which comes up with innovations that allow selected elements of home care to be modernized through the introduction of modern ICT solutions. The challenge for the state is to coordinate development activities and create an environment that allows key sectors to collaborate to achieve value-added outcomes.

This trend to link different sectors and thus to promote the Quadruple Helix principles is evident in the definition of specific and sub-objectives of strategic documents at the national level. Several strategic interventions in the health sector work with the development of an ecosystem of development, research, and innovation. They focus on the scientific research base, exemplified by the Health 2030 implementation

plan and objective 2.3.10 Development of scientific research and innovation base for digitalisation of healthcare and development of knowledge base for digital healthcare. Furthermore, Objective 3.1 Involvement of science and research in addressing priority health challenges (Health 2030 Implementation Plan). The implementation of these measures is a precursor to the future development of the health sector and therefore home care.

Thus, the development of R&I in the field of home care can be perceived The ecosystem of the use of innovations, ICT solutions in the field of Home Care and health care, in general, can be divided according to the direction of development impulses.

**What are the main changes/improvements in relation to what was described in the Regional Situation Analysis prepared in the framework of the initial HoCare project's implementation?**

The big change or improvement is undoubtedly a greater emphasis on strategic thinking and implementation of new challenges in technological progress. There is a strong emphasis on the introduction of new digital technologies and practices in the field of personalized medicine. As in many other industries, health and home care is undergoing a digital transformation as providers, payers and others in the health care segment leverage new technologies to improve patient care and access, increase efficiency and reduce costs. Proven technology is artificial intelligence (AI), which offers much greater power and sophistication. It has the potential to truly revolutionize patient care.

These are not just futuristic visions of a business helix, but the use of artificial intelligence is strategically considered in the Health 2030 document under specific objective 3.1 Involvement of science and research in solving priority tasks, which explicitly works to support research focused on the application of ICT, IoT and artificial intelligence in health care and methods based on these technologies and research in the field of telemedicine.

The current period also offers a great opportunity for the home care sector. Recent years can be characterized by the rapid emergence of practical applications, the introduction of mobile health (mHealth), and telemedicine technologies.

Digital literacy of the population is also a key aspect of digital development. It is building literacy not only of the healthcare professionals themselves but also of trust in digital health services among citizens and healthcare professionals. Increasingly, we are encountering the terms smart or intelligent home care. Since smart solutions becoming a normal part of people's lives and a common feature of their homes, it is only a matter of time when home care and the electronification of healthcare will also be a common feature of

the home.

Another improvement is an even greater emphasis on building knowledge bases in the health sector. The emphasis on supporting Quadruple Helix is evident in the strategy documents and the changing structure of their objectives that emerged during the lockdown caused by COVID-19. This pandemic situation reinforced the basic principles of collaboration across sectors, and it can be said that the COVID crisis accelerated these changes.

The emphasis on quality cooperation across sectors can also be based on the principles applied by the Ministry of Health in the case of implementation of the specific objective Digitalization of Healthcare.

Selected principles of the Ministry of Health that support the digitalization of healthcare include:

1. Involvement of health professionals in projects as early as the project design stage, in planning and designing the solutions to be implemented in the project.
2. Before introducing new eHealth tools and services into practice, their usability, quality, stability, and performance must always be sufficiently verified and evaluated.
3. Use available scientific research knowledge and proven technologies in the development of new solutions.

At first glance, these principles practically put together a functional dimension for implementing new solutions. It is not desirable to create unique and isolated solutions that do not find application with the key customer in the form of healthcare personnel, but rather to promote integrative solutions that are moreover accepted across stakeholders and target groups. This consideration supports the Quadruple Helix approach. Only such an approach will ensure the successful implementation of ICT tools in healthcare and home care.

**Which of these changes/improvements can be identified as an impact of the COVID-19 crisis or as measures the region applied to face and recover from the crisis?**

COVID-19 pandemic has put unprecedented pressure on the entire healthcare system and has also opened up a major opportunity for the development of digital technologies in the field of home care. The implementation of digital and innovative solutions had been used only to a small extent before the pandemic outbreak. A barrier to development is the considerable financial requirements to implement workable solutions. However, the long-term fight against the pandemic can thus be seen as a key driver of digital transformation in the Czech health and home care system. This change in the perception of this need is not limited to the Czech Republic. The same issues are shared across the whole world. According to the

results of the Future Health Index 2021 survey<sup>2</sup> among healthcare executives in 14 countries, two-thirds of healthcare executives and managers are aware of the great need for investment in IT infrastructure and its implementation.

The COVID crisis has had a strong impact on the strategic thinking of public bodies. Multiple new strategies have been prepared as a response to the pandemic (described in the previous Chapters). The agenda of health care has been stressed as a part of critical infrastructure. Therefore, the support of home care as a part of the health care system is expected.

The urgency and need for digitalization have increased in the wake of the pandemic. This can be described as the most important change or improvement in the field of science and research. The crisis has brought together different stakeholders from different sectors to work together on partial solutions to cope with the crisis. The joint development of different applications (eRouška = eMask, Tečka = Dot) to provide key information on the COVID-19 situation opened the door or contributed to the fact that home care and other health care can be provided remotely using different innovative solutions.

Since human contact was (must be) limited due to the contagious behaviour of the virus, it is understandable to find new approaches how to caring for and protecting the most vulnerable groups of society. The COVID crisis has been turned over the recent thinking and perception of the stakeholders (national and regional authorities, private companies, NGOs, etc.).

## 4) MAIN REGIONAL ACTORS OF THE QUADRUPLE HELIX MODEL IN HOME CARE R&I

### 1. Citizens / users helix

Main formal + informal providers of healthcare, elderly care recipients / associations in Home Care R&I		
Name (+ in local language in brackets)	Website	Description of objectives and main activities

<sup>2</sup> The document is available [here](#).

<p>Association of social care providers (Asociace poskytovatelů sociálních služeb)</p>	<p><a href="https://www.apsscr.cz/">https://www.apsscr.cz/</a></p>	<p>The Association provides expert opinions on the field of social care via experience of its members. It supports sharing of research knowledge to its social care providing members. It has extensive knowledge on customers social and health needs for home care. The Association supports exchange of good practices nationally and internationally.</p>
<p>Association of Home Care (Asociace domácí péče)</p>	<p><a href="https://www.adp-cr.cz/">https://www.adp-cr.cz/</a></p>	<p>It is a national, professional and non-governmental organization that advocates for the interests of members providing home health care services. Members of the association are operators of home health care agencies. The Home Care Association is the coordinator of the home health care segment and a negotiating partner with health insurance companies and the Ministry of Health.</p> <p>The organisation participates in the preparation and development of legislative measures in areas related to the development of home healthcare.</p> <p>Other objectives of the organisation include:</p> <ul style="list-style-type: none"> <li>- to inform the Ministry of Health, health insurers and other institutions about the impact of forthcoming measures on the quality of healthcare provided to patients.</li> <li>- to educate the general public and professionals about home healthcare services</li> <li>- to promote the exchange of experience and examples of good practice</li> </ul>
<p>Association of Private Providers of Innovative Home Care (Asociace soukromých poskytovatelů)</p>	<p><a href="https://www.aspidop.cz/">https://www.aspidop.cz/</a></p>	<p>ASPIDOP is a professional association that represents providers in segments focused on home care. The aim is to defend their interests and represent them in negotiations with health insurance companies, the state and authorities,</p>

<p>inovativní domácí péče)</p>		<p>or other relevant institutions.</p> <p>ASPIDOP is a non-profit organization bringing together organizations regardless of their size and location. The only important thing is that they provide their services to people in their home environment, meet the criteria according to the statutes of the association, and in addition perceive the need to further develop (innovate) the home care segment and to participate in discussions affecting its future.</p>
<p>České národní forum pro eHealth (Czech national forum for eHealth)</p>	<p><a href="https://www.ehealthforum.cz/">https://www.ehealthforum.cz/</a></p>	<p>The Czech National Forum for eHealth Civil Association is a non-governmental, non-profit organization established to support the development of eHealth. The aim of the Forum's activities is mainly focused on expanding and increasing general awareness of eHealth, supporting the development of eHealth and promoting communication in the field of eHealth.</p> <p>Within the scope of its activities, the Forum focuses on cooperation of the Forum members with citizens, health care institutions, health insurance companies, public authorities at municipal, regional and state level, European Union authorities and institutions, commercial companies, enterprises and NGOs in the field of eHealth.</p>
<p>The Czech Association of Nurses (Česká asociace sester)</p>	<p><a href="https://www.cnaa.cz/en/about-the-company">https://www.cnaa.cz/en/about-the-company</a></p>	<p>The Czech Association of Nurses is an expert, professional, volunteer, non-profit and non-political organization. It represents the providers of the home care nursing services and create effective tools to enforce their rights.</p> <p>The objectives of the Czech Association of Nurses</p>

		<ul style="list-style-type: none"> <li>- Support the activities focused on the realization of national and international programs, whose aim is the training of nurses, midwives and other health care professionals.</li> <li>- Participate on changes of the health care system in the Czech Republic.</li> <li>- Cooperate with government authorities and other professional</li> <li>- Create effective tools to ensure the safety and quality of nursing services, in accordance with the needs of individuals, groups and communities.</li> </ul>
Promedicus - Home Care	<a href="https://www.domacipece24.cz/sluzby-zdravotni-pece">https://www.domacipece24.cz/sluzby-zdravotni-pece</a>	<p>One of the largest providers of home health care in the Czech Republic with an ISO 9001 quality management system certificate from CQS. The organization provides expert home health care based on human touch and superior service. The organisation places particular emphasis on the selection, training and qualification of our general nurses. The service provided is available 24 hours a day, 7 days a week, completely free of charge as they are 100% covered by the public health insurance.</p>
Vcelka – Home Care (Včelka – domácí péče)	<a href="https://www.pecevcelka.cz/uvod/">https://www.pecevcelka.cz/uvod/</a>	<p>One of the many providers of home care services in the Czech Republic. It is the Association of Caring Organizations VČELKA, which is gradually expanding its scope and thus the availability of quality and comprehensive home care (health and social).</p> <p>Currently, the association provides home health care services in 9 regions of the Czech Republic. It provides health care to more than 9000 persons annually.</p>

## 2. Business helix

Main businesses and business' supporting actors in Home Care R&I?		
Name (+ in local language in brackets)	Website	Description of innovative solutions provided in the field
CleverTech	<a href="http://www.cleverttech.cz">http://www.cleverttech.cz</a>	CleverTech is a company that combines the research and innovation potential of a university environment with professional commercial implementation. The company is a spin-off company of FBMI CTU in Prague and the 1st Faculty of Medicine of Charles University. The company's potential is focused on projects combining the fields of technology, medicine and health and social services, in particular we focus on the development and implementation of mobile monitoring and assistance solutions.
Ness	<a href="https://www.ehealthness.cz/">https://www.ehealthness.cz/</a>	Leads consortium of providers of complex e-health solution (NZIS – National Health Information System) using cloud data storage and patient / healthcare professional access - ePrescription service supporting medicine prescriptions exchange and information between doctor, patients, chemists and insurance company - eAllocation service supporting management of appointments at doctors and sharing results of visits - full electronic health book for patient - developed national health portal in Slovakia - partners with EIT Health for support of health segment startups (events, mentoring, competitions, etc.)
Mobile Assistance Systems (Mobilní asistenční)	<a href="https://en.mobas.cz/">https://en.mobas.cz/</a>	Mobilní asistenční systémy s.r.o. (MOBAS) is a company dedicated to the operation of assistance services that help people in need to live a full life and overcome unpredictable, life-

systemy)		threatening situations in which they cannot help themselves. Its mission is to provide a solution for people with ongoing assistance needs that does not restrict them in any way, while reducing the cost of that assistance. It helps seniors, people with disabilities and the long-term ill.
ICZ Group	<a href="https://www.iczgroup.com/">https://www.iczgroup.com/</a>	ICZ's solutions seek to modernize, optimize and humanize healthcare processes. ICZ helps to create safer, higher quality and more accessible healthcare at all levels. We provide solutions and services for the national healthcare system, hospitals, health insurance companies, research institutes and state and local governments.
DelpSys	<a href="https://delpsys.cz/">https://delpsys.cz/</a>	DelpSys offers solutions for improving the quality of social care in the Czech Republic. The aim is to motivate employees and improve the quality of nursing care.  It is a member of the project "Research of the Operational and Economic Model of Telemedicine Care".

### 3. Research helix

Main research actors in Home Care R&I?		
Name (+ in local language in brackets)	Website	Description of relevant research activities
Czech Technical University in Prague – UCEEB – faculty of biomedical engineering	<a href="https://www.cvut.cz/fakulta-biomedicinskeho-inzenyrstvi">https://www.cvut.cz/fakulta-biomedicinskeho-inzenyrstvi</a>	The faculty deals with the introduction of methods of Health Technology Assessment in the Czech Republic. The staff of the Department of Biomedical Engineering is also involved in the research and development of information systems in healthcare.

<p>(ČVUT – Fakulta biomedicínského inženýrství)</p>		<p>The activities of the Faculty is focused on:</p> <ul style="list-style-type: none"> <li>- Research and development in medical assistance systems for monitoring of biological parameters and technical parameters in intelligent buildings</li> <li>- Living lab with intelligent systems for management, systems for mobile monitoring of physiologic parameters of people, electrically adjustable bed for home care, innovative products from smart home and tools for testing of assistive technology products</li> </ul>
<p>The Czech National eHealth Center - University hospital Olomouc (Národní Telemedicínské Centrum, Fakultní Nemocnice Olomouc)</p>	<p><a href="https://ntmc.fnol.cz/abou-t-us">https://ntmc.fnol.cz/abou-t-us</a></p>	<p>The Czech National eHealth Center (NTMC) was established as a coordination and education center within a new rapidly developing branch of medicine - eHealth.</p> <p>The Czech National eHealth Center is the only centre in the Czech Republic that focuses comprehensively on the implementation of clinical research activities in the field of telemedicine.</p> <p>Currently, there are numerous activities in the Czech Republic in the field of eHealth.</p>
<p>Albertov Research Center (Výzkumné centrum Albertov)</p>	<p><a href="https://www.albertov.cz/">https://www.albertov.cz/</a></p>	<p>The Albertov Research Centre is an inter-university centre, founded based on a contract between Charles University and the Czech Technical University. The centre focuses on research, development and commercialization of hardware and software technologies in the medical environment. It creates a base for collaboration between technical and medical experts, students and other interested parties from both the commercial and non-profit sectors.</p>

		The research centre collaborates with the private sector through which it is supported product commercialisation.
The Czech Institute of Informatics, Robotics and Cybernetics, Czech Technical University  (Český Institut Informatiky, Robotiky A Kybernetiky)	<a href="https://www.ciirc.cvut.cz">https://www.ciirc.cvut.cz</a>	<p>The Institute has a broad field of specialization, covering: automatic control and optimization, robotics, artificial intelligence, computer graphics, computer vision and machine learning, designing software systems and computer devices, designing decision support and diagnostic systems and using these systems in medical applications, distributed decision support systems, industrial diagnostics, telematics, and designing user-friendly and beneficial solutions for citizens and for residents (including smart homes, smart cities, etc.)</p> <p>In terms of ICT solutions of home care, several activities are provided : design&amp;implementation of clinical support systems – telecare and telerehabilitation - assistive technologies (alternative actuators for handicapped persons, companion robot)</p>
Digital Health Platform – Innovation Centre of the Usti Region, Jan Evangelista Purkyně University	<a href="https://icuk.cz/digital-health-platform/">https://icuk.cz/digital-health-platform/</a>	The Digital Health Platform is an informal group of regional and subregional actors from health and social service providers, research institutions, health and IT companies, state and local government authorities and innovative business support organisations, whose aim is to promote digitalisation and innovative technology-oriented approaches and processes in health and social services. The platform was established in the summer of 2019 and has been meeting regularly since then. In January 2020, it was awarded the status of international Reference Site Collaborative Network (RSCN) by the European Innovation Partnership on Active

		and Healthy Ageing.
Centre for studies of longevity and long-term care  (Centrum pro studium dlouhověkosti a dlouhodobé péče)	<a href="http://celloilc.fhs.cuni.cz/CEL-10.html">http://celloilc.fhs.cuni.cz/CEL-10.html</a>	The Centre for the Study of Longevity and Long-Term Care (CELLO) is an interdisciplinary research and consulting centre at the Faculty of Humanities, Charles University. It addresses and contributes to the understanding of care, longevity, ethics of care and dis/ability. It links research with practice, engaging students, carers, workers, clients and patients in social and health services. The Centre implements several projects in the field of senior care services.

#### 4. Public institutions / government helix

Main public actors in Home Care R&I		
Name (+ in local language in brackets)	Website	Description of relevant activities
Ministry of Health of the Czech Republic (Ministerstvo zdravotnictví ČR)	<a href="http://www.mzcr.cz/">http://www.mzcr.cz/</a>	The Ministry of Health of the Czech Republic is the central body of state administration in the field of health care and public health protection. It has been representing one of the most important authorities during the COVID-19 crisis.  The Ministry's competences include: <ul style="list-style-type: none"> <li>- health care and public health protection</li> <li>- health scientific research activities</li> <li>- health insurance</li> <li>- health information system</li> </ul>
National eHealth Centre, Ministry of Health	<a href="https://ncez.mzcr.cz/en?page=4">https://ncez.mzcr.cz/en?page=4</a>	The National eHealth Centre ensures the competence of the Ministry of Health in the field of the strategic and conceptual development of the digitalisation of health care.

<p>(Národní centrum elektronického zdravotnictví)</p>		<p>It ensures the agenda of the Digital Commissioner, who is responsible for the implementation of the implementation plans of the "Digital Czechia" programme and for communication and coordination with the Government Council for the Information Society and within the Ministry's leadership. Regularly informs the management meeting on the activities of the Digital Czechia programme.</p> <p>It ensures the preparation and management of the Ministry's Information Concept and other departmental information concepts issued by the Ministry.</p>
<p>Ministry of Industry and Trade of the Czech Republic  (Ministerstvo průmyslu a obchodu ČR)</p>	<p><a href="http://www.mpo.cz">www.mpo.cz</a></p>	<p>Ministry of Industry and Trade of the Czech Republic represents the Managing Authority of OP Technologies and Application for Competitiveness (OP TAK) that supports projects and activities in research and innovations. It emphasizes R&amp;D.</p> <p>The Ministry manages several strategic documents on the national level. One of them is the National Recovery Plan of the Czech Republic for 2021.</p>
<p>General health insurance company of the Czech Republic  (Všeobecná zdravotní pojišťovna České republiky)</p>	<p><a href="https://www.vzp.cz/">https://www.vzp.cz/</a></p>	<p>In general, home care health services are financed by Health insurance companies. Home health care can only be provided and covered by public health insurance based on a doctor's recommendation. It includes skilled nursing care in the patient's social environment.</p> <p>It is the biggest health insurance company in the Czech Republic. This insurance company has contracts with most doctors and facilities, so it is possible to choose from the widest network of</p>

		health service providers.
Technology agency of the Czech Republic - TACR  (Technologická agentura ČR)	<a href="https://www.tacr.cz/index.php/en/">https://www.tacr.cz/index.php/en/</a>	TACR manages the ETA programme for applied research, experimental development and innovation in social sciences and humanities 2018–2023. That means topics such as the social and health (home) care are included. Multiple projects related to home care innovations are being supported by the Eta Programme.
The Union of Towns and Municipalities of the Czech Republic  (Svaz měst a obcí ČR)	<a href="http://www.smocr.cz">www.smocr.cz</a>	<p>The Union of Towns and Municipalities of the Czech Republic is a voluntary, apolitical and non-governmental organisation. Members of the Union are towns and municipalities. Since the Czech local government has a strong position in the public sector, the Union of Towns and Municipalities represents an important partner for governmental and parliamentary political representation.</p> <p>Agenda related to social welfare is one of the competencies of the municipalities. Many organisations which are responsible for providing social and health care to the inhabitants are established by the municipalities or they are supported in a different form.</p>
<p><b>Briefly describe the main changes to the main actors' synthesis in relation to what was described in the Regional Situation Analysis prepared in the framework of the initial HoCare project's implementation and their relevance to the COVID-19 crisis impact</b></p>		
<p>The period between the end of the initial HoCare project and the start of the project extension is too short to record any dramatic changes in the ecosystem. There is a lack of time to achieve a change. On the other hand, the awareness of the potential in the field of home care digitalization is well received and the need or urgency of the innovative approach is unquestionable and easily recognizable on the strategic level. Traditional representation of the ecosystem is governmental authorities that are</p>		

responsible for the agenda of digitalization and health/home care itself.

Main changes identified in the framework of the HoCare:

- The rigid management of the state bodies has changed and slightly improved. The unprecedented situation resulted in a new and more flexible behaviour. It could represent a new “wave” of strategic thinking on the governmental level.
- More innovative solutions were produced by the stakeholders, both coordination and cooperation were productive, and the final solutions have been elaborated faster in order to satisfy the needs of the society during the early phases of the crisis.

## 5) MAIN INNOVATIVE REGIONAL PROJECTS / RESEARCH INITIATIVES IN THE SECTOR OF HOME HEALTH CARE

<b>Name of the Project / Research Initiative</b>	<b>eHealth - Metropolitan Emergency and Health Care System</b>
<b>Short description (main objectives, main actions)</b>	<p>The main objective of the project is to introduce a higher standard of care for the elderly and people with health limitations (chronically ill citizens), using new and more modern technologies. Assistive care and telemedicine should increase its users' sense of security in everyday life at home and outdoors. Thanks to the new possibilities, these people can live a full life without fear and in their own home environment in old age or with health limitations. This project was directly linked to the cooperation with doctors, who play a vital and indispensable role.</p> <p>Another objective of the proposed project was to link social and health care in the territory of the capital city. The aim of the project was to create a unique setup of inter-ministerial cooperation between the Ministry of Labour and Social Affairs (social/emergency care) and the Ministry of Health (health care).</p>
<b>Participating Organizations</b>	Operator ICT, a.s. Department of Health, Social Care and Prevention

	<p>Ministry of Health Ministry of Labour and Social Affairs Institute for Postgraduate Education in Health Care Czech Medical Society JEP Czech Medical Chamber Czech National Forum for eHealth z.s. Central Military Hospital Královské Vinohrady University Hospital General practitioners</p>
<p><b>Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how.</b></p>	<p>The project promotes the Quadruple-Helix. Multiple stakeholders from different sectors were involved in the preparation and implementation of the project as well.</p> <p>An important aspect of the eHealth project is the linking of the social and health sectors. Although it is a social service, in addition to social workers, a doctor, either on discharge from the hospital or a general practitioner with whom the individual is registered, may suggest its use depending on the individual's situation. The council's social services department has now been tasked with incorporating the tested system into future plans, including follow-ups with general practitioners.</p> <p>Over time, the OICT has been actively reaching out and informing GP practices and health facilities about emergency care and the eHealth project. As a result, long-term cooperation with seven general practitioners in different districts of Prague was established. A memorandum of cooperation on this project was also concluded with the Central Military Hospital and the Královské Vinohrady University Hospital. Informal cooperation took place with the Gerontological Centre in Prague 8 and the Czech Alzheimer's Society and other GP practices. The main purpose of the cooperation with all institutions was to inform about the emergency care, about the project, and to reach out to people who are primarily targeted by this service.</p>
<p><b>Total budget and source of funding</b></p>	<p>13 927 592 CZK/ 570 000 EUR (without VAT)</p> <p>Funded by the Capital of Prague.</p>
<p><b>Main results of the</b></p>	<p>The primary objective of the project is the introduction of a higher standard of elderly care and care for medically handicapped people (chronically ill</p>

<b>activities</b>	<p>citizens). Using new, more modern technologies of assisted care and telemedicine will help their users feeling safe during their everyday life at home and outside. Due to the new possibilities, these people in old age, as well as people with medical limitations, can maintain full-fledged lives without fear and in their house environment.</p> <p>Another objective of the proposed project is to link social and medical care in the capital of Prague. These services are, so far, provided under two separate entities, the Ministry of Labor and Social Affairs (social/emergency care) and the Ministry of Health of the Czech Republic (health care). The linkage would establish unique inter-department cooperation. The establishment of such cooperation by the city of Prague would set cooperation that has never been achieved in the Czech Republic so far.</p>
<b>Website / Link or contact details for more information</b>	<p><a href="https://smartprague.eu/projekty/metropolitni-system-tisnove-a-zdravotni-pece">https://smartprague.eu/projekty/metropolitni-system-tisnove-a-zdravotni-pece</a></p>
<b>Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis</b>	<p>The idea of the project started before the COVID-19 crisis. However, the project aims on the support of seniors who can be identified as a target group. The metropolitan area around Prague represents an important socioeconomic territory with large population. The urban community was strongly impacted by the COVID-19 crisis. Through the innovative solution, the target group of old vulnerable people was protected from the virus.</p>

<b>Name of the Project / Research Initiative</b>	<p>Research of the Operational and Economic Model of Telemedicine Care</p>
<b>Short description (main objectives, main actions)</b>	<p>The main aim of the project is to investigate and propose appropriate operational and economic models for the provision of telemedicine services in CZ, which will subsequently support quality of health care provision in CZ and thereby increase quality of life.</p> <p>Partial aims of the project are:</p> <ul style="list-style-type: none"> <li>- To prepare a background analysis on the organization and economy of</li> </ul>

	<p>care</p> <ul style="list-style-type: none"> <li>- Obtain appropriate data for review</li> <li>- Evaluate the data obtained and propose economic and operational models</li> <li>- Test and evaluate the models</li> <li>- Define conclusions and recommendations</li> </ul> <p>The main output of the project will be a research report, which addresses appropriate economic and operational models and a feasibility study, which verifies these models with examples of the applicant's services.</p>
<p><b>Participating Organizations</b></p>	<p>University of Medicine and Pharmacy "Iuliu Hateganu" Cluj Napoca</p> <p>Dr. Vasile Micu" Association</p> <p>Mayor's Office of the City of Kaba</p> <p>University Hospital Olomouc</p> <p>DBH InnoHub Ltd.</p>
<p><b>Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how.</b></p>	<p>Partly, it can be described as the project promoting the Quadruple-Helix. Mainly, the project outputs will define the economic and organizational models of telemedicine care. Therefore, it is expected that cooperation across various sectors will be supported.</p>
<p><b>Total budget and source of funding</b></p>	<p>4 982 000 CZK / 200 000 EUR</p> <p>Funded by Technology Agency of the Czech Republic (TAČR) - Eta Programme</p>
<p><b>Main results of the activities</b></p>	<p>An important aspect of the eHealth project is the linking of the social and health sectors. Although it is a social service, in addition to social workers, a doctor, either on discharge from the hospital or a general practitioner with whom the individual is registered, may suggest its use depending on the</p>

	<p>individual's situation. The council's social services department has now been tasked with incorporating the tested system into plans, including follow-ups with general practitioners.</p> <p>Within the Czech Republic, these telemedicine services have not yet entered into routine practice, they are used in pilot testing or partial isolated solutions. Therefore, there is a clear lack of a suitable operational and economic model for the provision of these services in the Czech Republic, which would define how to develop the services and ensure their sustainability.</p> <p>More information is not available because the subject matter of the project is subject to commercial confidentiality (§17 to 20 of the Commercial Code).</p>
<p><b>Website / Link or contact details for more information</b></p>	<p><a href="https://ntmc.fnol.cz/aktualni-narodni-projekty">https://ntmc.fnol.cz/aktualni-narodni-projekty</a></p>
<p><b>Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis</b></p>	<p>Telemedicine is one of the key tools to provide care to patients, even in the era of COVID-19. This crisis has accelerated the emergence of technology into mainstream practice. A large proportion of healthcare providers only started using telemedicine after the onset of the pandemic. At the same time, the rapid and successful implementation of telemedicine has contributed to the view that it is telemedicine that will add the most value to health systems over the next five years. The project thus responds to a topical issue. Its results will contribute to streamlining the organizational and economic aspects of telemedicine.</p>

<p><b>Name of the Project / Research Initiative</b></p>	<p>Developing, piloting and validating smart care models in Danube region for supporting social innovation, improving competences and entrepreneurship (D-CARE)</p>
<p><b>Short description (main objectives, main actions)</b></p>	<p>The main objective of the D-CARE project is to improve skills and to develop, validate and scale up smart solutions that will strengthen and integrate regional social and health systems in 9 Danube regions. The project will support e-care and e-health services for older people with chronic diseases and cognitive impairments.</p>

	<p>The project activities are divided into three pillars:</p> <ol style="list-style-type: none"> <li>1) Design of connected innovative learning environments responsible for the development of new learning tools, content and training programmes to improve the skills needed by the project regions to deliver new integrated care services (innovative models of smart care).</li> <li>2) Deployment of Smart Care pilots to explore, select, optimize, test, and validate innovative Smart Care services for older adults with chronic diseases or cognitive impairments;</li> <li>3) Establishing a Transnational Education Policy Centre to ensure the generation of know-how and dissemination of results and knowledge to policy makers.</li> </ol>
<p><b>Participating Organizations</b></p>	<p>University of Medicine and Pharmacy "Iuliu Hateganu" Cluj Napoca</p> <p>Dr. Vasile Micu" Association</p> <p>Mayor's Office of the City of Kaba</p> <p>DBH InnoHub Ltd.</p> <p>Univerzita Jana Evangelisty Purkyně v Ústí nad Labem</p>
<p><b>Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how.</b></p>	<p>The Interreg D-CARE project aims to create sustainable innovations for smart health and care services in the Danube region.</p> <p>The project is building strong national and transnational innovation ecosystems involving stakeholders from the quadruple helix - business, public administration, academia and users or civil society.</p>
<p><b>Total budget and source of funding</b></p>	<p>2648285 EURO</p>
<p><b>Main results of the</b></p>	<p>The actions of D-CARE project are focused on establishing a transnational cooperation network that design Innovative Learning Environments for older adults 55+, in 9 Danube regions, in order to facilitate the creation, validation</p>

<p><b>activities</b></p>	<p>and deployment of smart care services in the context of smart care labs. In the labs are involve stakeholders from businesses, academia, politics and administration as well as end users to catalyze an innovation process that is efficient and optimally targeted at user needs. Project will strengthen and integrate regional social and healthcare systems by improving competences and generating innovative smart care models. Thereby, can project capitalize on the potential of Danube region’s increasingly changing and diverse population and become a role model of innovative societal change engineering.</p> <p>The project addresses the upper mentioned societal challenges through its three main action pillars:</p> <ul style="list-style-type: none"> <li>• Innovative Learning Networked Environments</li> <li>• Smart Care Pilots deployed in 5 project regions for developing, testing, validating and implementing of smart care models</li> <li>• Transnational Policy Learning Center for smart care policies design</li> </ul> <p>Through D-CARE results, 8 Danube regions will have improved capacities and skills to meet the health and care needs of their older population and offer attractive employment opportunities for the younger.</p>
<p><b>Website / Link or contact details for more information</b></p>	<p><a href="https://www.interreg-danube.eu/approved-projects/d-care">https://www.interreg-danube.eu/approved-projects/d-care</a></p>
<p><b>Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis</b></p>	<p>D-CARE responds to the strain on healthcare systems by building capacity, increasing competencies, connecting transnational actors and creating innovative smart care solutions that can be the answer to different situations, including covid-19. D-care seeks to support the emergence of e-care and e-health facilities, thus enabling patients to be safer but also more comfortable and making the work of an overburdened health and social system easier.</p>

<p><b>Name of the Project / Research Initiative</b></p>	<p>HoCare 2.0</p>
<p><b>Short description (main objectives, main actions)</b></p>	<p>The HoCare2.0 project aims to deliver highly innovative, digital-based, customer-centered home care solutions for the elderly. The project targets this area for innovation due to the ageing of European society.</p> <p>This process opens up a significant market – the Silver Economy – which still lacks solutions that are designed with the elderly.</p> <p>The success of newly delivered ICT based solutions and products depend largely on two main factors:</p> <ol style="list-style-type: none"> <li>1. The solution must meet with the real needs of end-users;</li> <li>2. End-users need to accept the solution.</li> </ol> <p>It often happens that one might have a fitting solution, but it is not used by the elderly as they are not comfortable with the technology.</p> <p>Therefore, project involving the elderly in the design process.</p>
<p><b>Participating Organizations</b></p>	<p>DEX Innovation Centre</p> <p>Institute of social services Prague 4</p> <p>National Directorate General for Hospitals</p> <p>Central Transdanubian Regional Innovation Agency Nonprofit Ltd.</p> <p>Rzeszow Regional Development Agency</p> <p>The Malopolska Region</p> <p>BSC, Business support centre L.t.d., Kranj</p> <p>Carus Consilium Saxony GmbH</p> <p>Dresden University Hospital</p> <p>Cremona Chamber of Commerce</p>

	Lombardy Region
<b>Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how.</b>	<p>The mission is to provide customer-centric home care solutions using the co-creation method. The project engages SMEs, public institutions, research institutions and citizens in the development of new innovative health and social services and products.</p> <p>Experts were involved in the design of the co-creation tools, but also in the selection of suitable SMEs for the pilots and in all other relevant activities.</p>
<b>Total budget and source of funding</b>	2.034.112,00 EURO
<b>Main results of the activities</b>	<p>HOCARE2.0 network connects co-creation labs and disseminates information to new areas in central Europe</p> <p>Implementation of 6 PILOT projects with public service providers and 12 pilot projects with SMEs.</p> <p>2 innovative tools for implementing cooperation between SMEs and public service providers.</p> <p>Training 285 employees of SMEs or public service providers.</p>
<b>Website / Link or contact details for more information</b>	<a href="https://www.interreg-central.eu/Content.Node/HoCare2.0.html">https://www.interreg-central.eu/Content.Node/HoCare2.0.html</a>
<b>Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis</b>	<p>The HoCare 2.0 project faced the covid-19 pandemic throughout the pilot. The pandemic started just as the work with seniors was about to begin, which complicated the process. On the other hand, the company was even more convinced of the correctness of the developed devices, which were dedicated for example to telemonitoring or remote communication between the senior and the caregiver. All the while, the pandemic had an impact on the solutions developed, making the importance of remote solutions for home care much more relevant.</p>

## 6) EXPECTED RESULTS FROM THE EXCHANGE OF EXPERIENCE PROCESS WITH THE HOCARE PARTNERSHIP

In terms of indications for home care, differences between countries are evident. In the Czech Republic and the Federal Republic of Germany, Home care is prescribed by a general practitioner or an attending physician in a hospital. In the Slovak Republic, a nurse can also indicate Home care, and the patient's family can also make a request. In the Netherlands, Home care is indicated by a general practitioner, a hospital doctor or a nurse, and the patient's neighbors can also make a request. In the UK, care is indicated by a general practitioner or registered nurse

The interconnectedness of the health and social care system is an important factor influencing the functionality of Home care in a particular country. In the Czech and Slovak Republics, these systems operate separately, which causes considerable difficulties for the target Home care providers and patients, both in terms of overlapping competences and the inflexibility of the whole system of patient care in the patient's own social environment. This results in daily problems at the interface of the two systems, distorted links, and disruptions in the continuity of care. Different rules for access to public funds in the two areas impair the efficiency of management and the quality of the resulting care. In the Federal Republic of Germany, these systems cooperate. A highly functional interconnection between the two systems is evident in both the Netherlands and the UK, which in practice means greater efficiency in the care provided.

Overall, the general aim is to continuously improve the quality of accessibility and efficiency of home care, but it is important to focus on:

- Strengthening the role of nurses in home care
- Financing home care
- Evaluating the quality of home care

How would we like to be inspired?

A geographical/territorial perspective should also be considered. Practically any IT solution knows no borders, but the specifics of the settlement structure of the country need to be addressed. In particular, the large percentage of small municipalities is a specificity. A similar settlement structure can be found, for example, in France. In general, the provision of quality public services in rural areas is a problem. Higher concentration of elderly people combined with poorer accessibility to social/health services. care (and home care itself) directly calls for innovative approaches to home care that can contribute to the efficiency of home care services.

A number of projects are now focusing on the provision of "innovative" home care in urban or metropolitan settings. However, rural regions are very often neglected, which is a mistake given the vulnerability of the target group. Examples of solutions to these issues - care in rural areas would be a good tip, just for the Czech region.

## 7) OTHER INFORMATION

The current position of home care in the Czech Republic and its development in the future is influenced by the issue of addressing follow-up, long-term/integrated and home care, health and social care. Other factors that influence the current state of home care are the current shortage of health professionals, the system of its financing, different material equipment of home care contact points, still persistent misinformation about the provision of care within home care, insufficient awareness of the lay and professional public, etc., although some areas have been the target of negotiations at various levels in recent years and the search for their solution within the framework of the implementation of the Health 2030 Strategic Framework. However, other documents that address this issue include, for example, the Working Paper summarising the area of assistive technologies and the possibilities of their use in social, health and informal care systems, as well as the Home Care Concept.

The intention for the coming years is to ensure accessible care to all citizens of the country, regardless of

their social and geographical background, while supporting the citizen in maintaining and improving their health status. Within this vision, emphasis is also placed on optimising the health system to increase its efficiency and impact in the context of demographic changes that significantly affect the health system. The needs of these people are not limited to the health component, but their social problems must also be addressed.

As part of our EIT health activities, we are in contact with practitioners, entrepreneurs and other stakeholders working in the field of social care. In these meetings we discuss the issues and needs that arise from these circles and here are some of them:

- A strong and stable information system is a prerequisite for digitalisation
- There is a willingness to pay out of pocket (patients): generally yes, as long as quality healthcare follows.
- the state should open up data on the quality of healthcare provision
- if the state does not open the data, then it is not possible to use AI effectively in healthcare.
- There are also pitfalls of digitising healthcare: fragmentation of the agenda (health and social), emphasis on logistics, electronic patient ID is essential, coordination between institutions (state, public) is important, the law should say that data will be open but should no longer mandate or determine how.
- Currently: the problem of digital education in healthcare (also missing in the training of the current generation of health professionals/doctors).
- Characteristic change curve: see the introduction of ePrescription.
- Applications/digital solutions: must be sustainable and user-friendly.
- Creation of a platform above the hegemony providing information systems for outpatient and hospital settings.
- Digitalisation is not a goal but a tool to make healthcare more efficient. The most important thing is vision.
- There is a parallel between the banking system and its evolution over the last few years and the healthcare industry.
- Developers of digital applications should be actively involved in education.
- Tripartite: its role and cooperation/coordination are essential for changes in healthcare.

## 8) AUTHOR

The information included in this report is provided in the framework of the HoCare project's additional activities implemented under the Interreg Europe 5th Call for proposals.

<b>Country</b>	Czech Republic
<b>Region</b>	Czech Republic
<b>Partner Organization</b>	DEX Innovation Centre
<b>Person(s) Contributed with provision of information to this Report</b>	Adam Vazač, Vojtěch Jíra
<b>Contact Person</b>	Vojtěch Jíra
<b>Contact Details of the Contact Person (email and telephone number)</b>	vojtech.jira@dex-ic.com