OVERALL REGIONAL SITUATION IN THE CZECH REPUBLIC IN HOME CARE RESEARCH & INNOVATION AND QUADRUPLE-HELIX COOPERATION IN R&I

REGIONAL STUDY OF THE HOCARE PROJECT IN THE CZECH REPUBLIC

European Union
European Regional
Development Fund

HoCare project (PGI01388) is carried out under the Interreg Europe programme financed by the European Regional Development Fund. This study reflects the author's views only and the Interreg Europe programme authorities are not liable for any use that may be made of the information contained therein.

ABSTRAKT (CZ)

Tento přehled regionální situace v oblasti výzkumu a vývoje domácí péče a spolupráci ve výzkumu a vývoji v rámci quadruple-helix kooperace shrnuje informace v rámci České republiky o situaci relevantní pro aktivity projektu HoCare (Interreg Europe, PGI01388, http://www.interregeurope.eu/hocare/) a 2 hlavní cílové skupiny – Ministerstvo průmyslu a obchodu (jako Řídící organ OP PIK), a aktéry inovačního ekosystému v oblasti domácí péče ze všech složek quadruple-helix modelu (jako potenciální žadatele a účastníky nových inovativních projektů podaných k financování do OP PIK či dalších národních finančních programů). Informace v tomto reportu byly sesbírány skrze sekundární průzkum dat autora a skrze rozhovory a diskuse s oběma cílovými skupinami, pro které je tento report rovněž vytvořen a publikován.

Cílem projektu HoCare je podpořit vznik inovativních řešení v oblasti domácí péče v regionálních inovačních řetězcích posílením kooperace aktérů regionálního inovačního systému používáním Quadruple-helix přístupu. Quadruple-helix je inovačním kooperačním modelem nebo modelem inovačního prostředí, ve kterém uživatelé, firmy, výzkumné organizace, a veřejné instituce spolupracují na vytváření inovací. HoCare cílí na (1) zlepšení Operačního programu (OP PIK) na strategické úrovni (zlepšením řízení či strategického zaměření OP) stejně jako na (2) zlepšení praktické roviny OP (podporou podání více a vysoce kvalitních projektů v oblasti domácí péče pro financování ze strany inovačních aktérů).

V České republice existuje v současnosti několik politických nástrojů, které mohou být použity k financování inovací v oblasti domácí péče. Za prvé a zejména, Operační program Podnikání a Inovace pro konkurenceschopnost (OP PIK) s prioritou 1 - Podpora výzkumu a vývoje pro vznik inovací. V rámci OP PIK, několik programů podpory (Potenciál, Aplikace, Spolupráce a Služby infrastruktury) vyhovuje a umožňuje podpořit jak domácí péči, tak i quadruple-helix kooperaci - například podporou inovací v domácí péči financované skrze přímou participaci jako žadatele a spolužadatele, anebo jako dodavatele externích služeb. Další programy (Inovace/Inovační projekt, Partnerství znalostního transferu, Inovační vouchery) sice nepodporují quadruple-helix spolupráci, ale mohou podporovat inovace v oblasti domácí péče obecně. Většina výzev v těchto programech je nyní otevřena a bude opětovně otevřena v průběhu roku 2017. Na počátku roku 2018 dojde k evaluaci programů a výzev v rámci poloviny doby jejich trvání a bude možno navrhnout změny pro možnou implementaci do konce programového období 2020. Mezi další dostupné programy pro financování inovací v domácí péči mohou být taktéž použity programy Trio (financují klíčové technologie), Epsilon (financují aplikovaný výzkum a experimentální vývoj) a inovační vouchery regionálních inovačních programů.

Domácí péče není strategicky podporována přímo ani jedním z předešlých programů. Avšak zdravotní péče a ICT řešení jsou podstatnou částí RIS3 strategie a umožňují způsob financování specifických řešení domácí péče spadajících do správné kategorie.

V České republice je aktuálně několik sítí a událostí v rámci inovačního ekosystému, které mohu být použity k networkingu a spolupráci v oblasti segmentu domácí péče. Existuje zde relativně menší síť silných inovačních aktérů, kteří se znají a kooperujína základě předchozích aktivit a inociativ, zejména mezi výzkumnými organizacemi a organizacemi podporující podnikání. Několik firem již dosáhlo mezinárodního úspěchu se svými produkty a službami. Přesto, počet inovančích projektů v oblasti domácí péče, které jsou každý rok podány se žádostí o financování z OP PIK je velmi málo při porovnání s dalšími odvětvími. Zatímco další výzkumné organizace, firmy a organizace poskytující formální i neformální péči chtějí bát vice zapojeny do inovačních iniciativ v této oblasti, zájem a možnosti zapojení pro veřejné instituce je limitován.

Podíváme-li se na úspěšně nastartovaní projekty v oblasti domácí péče, existuje několik dobrých příkladů, například - Protectu (24-hodinová služba vzdálené podpory), Intelligent Primer Nurse (osobní bezdrátový monitor k posteli pro vzdálený monitoring a zobrazování), OLDES + SPES (platformy telemedicíny a zábavy), SMART4MD (aplikace na tablet pro pacienty s mírnou demencí). OLDES, SPES a SMART4MD iniciativy vznikly na základě quadruple-helix kooperace způsobem zapojujícím všechny 4 typy aktérů ekosystému. Další

příklady iniciativ využující quadruple-helix kooperaci mohou pocházet z oblasti zdravotnictví obecně (například IntraMed-C2C – přenos inovačních nápadů od nemocnic do malých a středních podniků) a jsou přenositelné do oblasti domácí péče.

Spolupráce skrze Quadruple-helix kooperaci je všemi aktéry chápána jako něco přirozeného, co pomáhá při vytváření úspěšných inovací, které jsou pro cílové skupiny použitelné a ve velkém měřítku. Navzdory současnému paradigmatu triple-helix spolupráce v rámci OP PIK, více možností pro změny OP PIK a změny v inovačním ekosystému bylo vyřčeno a diskutováno, z nichž některé jsou například společný hlas ekosystému a lobovaní skrze asociace či jinak s vlivem na Monitorovací Komisi OP PIK. Mezi další patří například i detaily OP PIK výzev, například možné změny v CZ NACE a hlavních kategorií příjemců v rámci OP PIK, které povedou k odstranění některých bariér tak, aby potenciální žadatelé v oblasti domácí péče spadali do správných a podporovaných kategorií ve výzvách OP PIK, nebo úprava hodnotící škály a parametrů tak, aby dávala větší šance tě, projektům, které cílí na zdravotní či sociální problémy a výzvy.

Pro vice detailů si prosím přečtěte report níže, který byl sestaven na základě aktuálně dostupných informací a je představen ve formátu strukturovaného vyplneněného dotazníku (ne v plném textu). Tento report je sdílen s oběma cílovými skupinami – Ministerstvem průmyslu a obchodu a aktéry inovačního ekosystému v ČR. Informace v tomto report (doplněny o příklady dobré praxe projektů, a řízení a strategického zaměření OP) budou použity jako jeden ze vstupů do Tematických studií a Reportů pro politický transfer, které budou vytvořeny v mezinárodním měřítku, a které povedou k tvorbě Akčního plánu pro zlepšení OP PIK ve prospěch vyššího počtu a kvalitních inovačních iniciativ v domácí péči financovaných z OP PIK. Informace obsažené v tomto reportu nejsou vyčerpávající, byly sestaveny na základě dostupných informací a nemusí korespondovat s názorem autora.

ABSTRACT (EN)

This Overall regional situation in Home Care R&I and quadruple-helix cooperation in R&I was compiled with information on the Czech Republic situation relevant for the activities of the project HoCare (Interreg Europe, PGI01388, http://www.interregeurope.eu/hocare/) and its two target groups – Ministry of Industry and Trade of the Czech Republic (as Managing Authority of the Operational Programme Enterprise and Innovations for Competitiveness) and actors of home care innovation ecosystem from all helixes of quadruple-helix model (as potential applicants and participants of new innovative projects submitted to be financed within OP EIC or other national policy instruments). The information within this report has been gathered through desk research of the author, and through interviews and discussions with both target groups for whom the situation is also produced and published.

Objective of HoCare project is to boost delivery of home care innovative solutions in regional innovation chains by strengthening of cooperation of actors in regional innovation system using Quadruple-helix approach. Quadruple-helix is an innovation cooperation model or innovation environment in which users, businesses, research actors and public authorities cooperate in order to produce innovations. HoCare aims to (1) improve OP EIC at strategical level (by management or strategic focus improvements of OP EIC) as well as to (2) improve its practical level (by support of submitting more and high quality projects to OP EIC for innovation financing from innovation actors).

In the Czech Republic, there are currently available several policy instruments that could be exploited to finance home care innovations. First and foremost, Operational Programme Entreprise and Innovations for Competitiveness (OP EIC) with its priority 1 support programme (support of research and development for innovation). Within OP EIC, several intervention programmes (Potential, Application, Cooperation and Infrastructure services) fit both home care and quadruple-helix initiatives, i.e. support home care innovations´ financing through partnerships of more types of organizations working together - either through direct beneficiaries´ involvement or via involvement as external service providers. Other intervention programmes (Innovation/Innovation Project, Knowledge transfer partnership, Innovation vouchers) do not support quadruple-helix cooperation but can support home care innovations in general through a cooperation of less types and amount of actors. Majority of calls within all above cites intervention programmes are opened currently and will be re-opened again during 2017. At the beginning of 2018, there will be a mid-term evaluation of programmes and calls and possible changes for the rest of the period until 2020 might be considered and implemented. As far as other available programmes for financing home care innovations are concerned, Trio (financing key emerging technologies), Epsilon (financing applied research and experimental development) and regional innovation programmes´s innovation vouchers might be used too.

Home care is not supported directly in any of these programmes. However, healthcare and ICT solutions are core parts of the RIS3 strategy and enable way to finance also specific home care solutions fitting into the right category.

There are already several networks and events available in the innovation ecosystem in the Czech Republic that could all be used to network and cooperate in the homecare segment ecosystem. There is a rather small network of several strong innovation actors who are already networked and cooperate based on past common initiatives, especially among research actors and business supporting organizations. Several businesses have already reached international success with their home care products and services. Yet, the number of innovation initiatives financed through OP EIC each year is very small compared to other industries. While further research organizations, businesses and formal and informal care providers want to step in and get engaged into innovation projects in this area, the interest and possibilities of involvement from the side of public actors is rather limited.

Looking at successful started projects in home care, there are couple of good examples for instance – Protectu (a 24h remote assistance service), Intelligent Primer Nurse (a personal wirelless bed side monitor with remote

display), OLDES + SPES (tele-health and entertainment platforms), SMART4MD (tablet application for mild dementia patients). OLDES, SPES and SMART4MD were set up in the way that it involved all quadruple-helix actors into the cooperation. Other examples of projects from general healthcare sector (e.g. IntraMed-C2C – innovation idea transfers from hospitals to SMEs) are transferable to home care.

Quadruple-helix cooperation during innovation production is seen by all actors as something natural, helping substantially to create successful innovations that are usable by target groups in large scale. Despite its current triple-helix paradigm inside of OP EIC, several non-exhaustive list of ideas for OP EIC and innovation ecosystem changes were brainstormed and discussed, some of which are common ecosystem voice and lobbying through association or influence on Monitoring Committee of OP EIC, possible changes of details of OP EIC (e.g. in CZ NACE and main beneficiaries categories within OP EIC) to remove some of the barriers to fit right categories in OP EIC calls, and increased joint cooperation within the ecosystem to produce more ideas and innovative projects.

For details, please read through the below report, that was compiled from the available information so far and being presented in the format of a structured filled in questionnaire (not a full text). This report is being shared with both target groups in the Czech Republic – the Ministry of Industry and Trade and innovation ecosystem actors in home care. Information within this report (together with good practice cases from projects and management & strategic focus of OP) will be used as one of the inputs to Joint thematic studies and Policy Transfer Reports being created on international level leading to Action Plan development (for OP improvement in favour of home care innovations being financed) in each country, including the Czech Republic. Information within this report are not exhaustive, were compiled based on available information and do not have to represent views of the author.

Contents

1. Operational Programme OP EIC (OP PIK)

Structural funds' – Operational Programme(s) - basic information

Name of the Structural funds' - Operational Programme (OP) - supporting Research & Innovation	Operational Programme Enterprise and Innovations for Competitiveness 2014-2020 – OP EIC (Operační program Podnikání a inovace pro konkurenceschopnost 2014-2020 – OP PIK)
Geographical coverage of this OP (whole country, specific counties, international, etc.)	Whole country of the Czech republic except Prague
Managing Authority (Responsible body) for this OP	Ministry of Industry and Trade (Ministerstvo průmyslu a obchodu)
Intermediate body(ies) for this OP (if relevant)	Agency for Entrepreneurship and Innovations (Agentura pro podnikání a inovace)
General objectives of the OP	1) Raising the number of businesses capable of extending the technological boundaries of their industry, with emphasis put on the development and interconnection of corporate research, development and innovation capacities with their surroundings; 2) Developing entrepreneurship and lower-order innovation, i.e. modernization and development projects focusing especially on support for the implementation of new business plans; 3) Shift towards an energy-efficient, low-carbon economy consisting mainly in improving the energy efficiency of the business sector, utilizing renewable energy sources, modernizing energy infrastructure and introducing new technologies in the management of energy and secondary raw materials; 4) Facilitating the development of entrepreneurship, services and access to government services by means of high-speed Internet access and a wider choice of information and communication technology services ("ICT").
Name of the relevant thematic priority axis supporting R&I activities	Priority axis 1: Promotion of Research and development for Innovation (prioritní osa 1: Rozvoj výzkumu a vývoje pro inovace)
Specific objectives of the given priority axis described above	SO1.1 - Increasing innovation performance of enterprises - develop entrepreneurship based on an intensive creation and use of unique knowledge in all major fields of specialization of the Czech Republic - enhance innovative capacities of enterprises, enable their own R&D activities - increase the demand for outputs of research implemented in research organizations, including technologies with the greatest growth perspective. SO1.2 – Improving the intensity and efficiency of cooperation in research, development and innovation - increase in joint R&D&I activities among enterprises and the public and corporate sector.

Available intervention programmes in 2014-2020 relevant to Home Care R&I and quadruple-helix cooperation in R&I

The following intervention programmes are not a full list of all OP EIC available intervention programmes, as only those relevant for home care innovation support and currently or potentially including quadruple-helix cooperation elements are listed based on desk research and multiple interviews with the Ministry of Industry and Trade of the Czech Republic.

INNOVATION – INNOVATION PROJECT (Inovace – Inovační projekt) http://www.agentura-api.org/programy-podpory/inovace/	
Supported activities	- Increase of technical and usable specifications of product, technology or service - Increase of effectiveness of production process and service providing - Implementation of new methods of company process organization through new ICT intergrating and automatizing processes to support RDI - Increase of sales of products or services through significant changes in design, packaging and new sales channels
Relevancy of this intervention programme	Relevant to Home Care R&I
Reasons of its relevance for Home Care R&I	Supports product / service / technology / process / organization / marketing innovations of technical or user values in general, therefore could be well used also for product / service / technology innovation in Home care segment. Segment of product / service needs to fit however to correct supported CZ NACE as based on listing of activities in business registry of the main recipient. Medical devices and ICT is supported in CZ NACE categories. Hospitals could be listed in CZ NACE in medical devices category in research, technical studies and analyses, health institutional care, and other activities related to protection of health. Associations in healthcare (86-9).
Reasons of its relevance for quadruple-helix cooperation in R&I	N/A - There are various final beneficiaries that could be involved directly as main beneficiaries: SMEs, public supported organizations, public organizations, public universities and public research organizations. However, external services are not eligible within calls where more different organization types could join so this is not really a quadruple-helix supporting programme as now.
Eligible costs	Project documentation, buildings, technologies, software and data, intellectual property rights, certification of products, marketing innovation, requested publicity
Amount of funds	185 100 000 EUR in current call (5 000 000 000 CZK) Until 2020 – up to 398 653 670 EUR (including also project on IPR protection) (10 771 821 000 CZK)
Objectives	- enhance innovation performance of domestic companies and increase of their competitiveness - enhance know-how of companies for own innovations - increase of effectiveness of internal processes in terms of innovation management and intellectual right protection - increase of number of domestic companies in positions of technology leaders - introduction of new products in the production and their placement on the market, especially global market
Eligible recipients	SMEs, LMEs
Time plan for calls	Call is opened from 28.11.2016 until 18.4.2017. Next call will be opened in 2017. Following calls will be decided upon mid-term OP evaluation.

POTENTIAL (Potenciál) http://www.agentura-api.org/programy-podpory/potencial/	
Supported activities	Establishment or development of centres for industrial research, innovation and development (land, buildings, machines and equipment to run)
Relevancy of this intervention programme	Relevant both to Home Care R&I + quadruple-helix cooperation in R&I
Reasons of its relevance for Home Care R&I	Support R&D&I capacity building and increase in number of organizations doing own R&D&I activities. If capacities increased for Home care segment organizations, these could lead to increased R&D&I activities also in this field. There needs to be a fit however to correct supported CZ NACE as based on listing of activities in business registry of the main recipient. Medical devices and ICT is supported in CZ NACE categories. Hospitals could be listed in CZ NACE in medical devices category in research, technical studies and analyses, health institutional care, and other activities related to protection of health. Associations in healthcare (86-9).
Reasons of its relevance for quadruple-helix cooperation in R&I	There are various final beneficiaries that could be involved directly as main beneficiaries: SMEs, public supported organizations, public organizations, public universities, public research organizations, towns and regions. As it supports enhancing collaboration of companies with R&D organizations and as outputs should have expectations of market application, inclusion of other relevant organizations (such as hospitals, regions, towns etc.) with user needs information might be beneficial also.
Eligible costs	Land, buildings, machines purchase and purchase of other equipment for research infrastructure, requested publication
Amount of funds	92 519 000 EUR in current call (2 500 000 000 CZK) Until 2020 – up to 197 326 836 EUR (5 337 303 000 CZK)
Objectives	- introduction and increase of capacities of organizations for R&D&I activities - increase of number of organizations carrying out own R&D&I activity - enhance of cooperation of companies with R&D organizations - creation of qualified job positions resulting in development of knowledge economy - improving conditions of organizations to enter national and European R&D programmes
Eligible recipients	SMEs, LMEs
Time plan for calls	Call opened on 11.11.2016 with closure in 17.4.2017. Next call will be opened in 2017. Following calls will be decided upon mid-term OP evaluation.

APPLICATION (Aplikace) http://www.agentura-api.org/programy-podpory/aplikace/	
Supported activities	Realization of industrial research and experimental development
Relevancy of this intervention programme	Relevant both to Home Care R&I + quadruple-helix cooperation in R&I
Reasons of its relevance for Home Care R&I	"Application" supports getting new knowhow necessary for the development of new products, materials, technology or services via project of industrial research and experimental development. This area can be very well suited also to Home Care segment. There needs to be a fit however to correct supported CZ NACE as based on listing of activities in business registry of the main recipient. Medical devices and ICT are supported in CZ NACE categories. Hospitals could be listed in CZ NACE in medical devices category in research, technical studies and analyses, health institutional care, and other activities related to protection of health. Associations in healthcare (86-9).
Reasons of its relevance for quadruple-helix cooperation in R&I	There are various final beneficiaries that could be involved directly as main beneficiaries: SMEs, LMEs, public supported organizations, public organizations, associations, public universities and public research organizations. The programme supports increase of cooperation and interactions between research organizations and application organizations including also quadruple-helix actors. Hospitals and public institutions can be only co-beneficiaries as external services purchased as in eligible costs below. For external services above 500 000 CZK, public tenders have to be followed, lower can be subcontracted without public tender. Subcontracted organizations need to have research listed in the business registry activities.
Eligible costs	Personal costs, equipment, tools, contracted research and patents, consultancy services, management and other project related costs
Amount of funds	166 500 000 EUR (4 500 000 000 CZK) Until 2020 – up to 313 132 814 EUR (8 469 627 000 CZK)
Objectives	- getting new know-how necessary for development of new product, material, technology or services via projects of industrial research and experimental development - implementation of high-order innovations and creation of internationally competitive products - research in industrial challenges and key emerging technologies
Eligible recipients	SMEs, LMEs, research and dissemination organizations
Time plan for calls	Call is opened from 29.11.2016 with closure on 20.4.2017. Next call will be opened in 2017. Following calls will be decided upon mid-term OP evaluation.

KNOWLEDGE TRANSFER PARTNERSHIP (Partnerství znalostního transferu) http://www.agentura-api.org/programy-podpory/partnerstvi-znalostniho-transferu/	
Supported activities	Creation of partnership between SME and research organization through research person attendance at SME with focus on: improvement of production processes or new product/service development/innovation or process innovation during development and implementation, or SME process improvement
Relevancy of this intervention programme	Relevant to Home Care R&I
Reasons of its relevance for Home Care R&I	Knowledge transfer partnerships for new product/service innovation or development could very well be established also in Home care segment if they fit to CZ NACE requirements as based on listing of activities in business registry of the main recipient. Medical devices and ICT is supported in CZ NACE categories. Hospitals could be listed in CZ NACE in medical devices category in research, technical studies and analyses, health institutional care, and other activities related to protection of health. Associations in healthcare (86-9).
Reasons of its relevance for quadruple-helix cooperation in R&I	N/A – only support cooperation of SME with research organization, external services are not eligible
Eligible costs	SMEs – hardware, tools, equipment, devices, software, data, personal costs, travelling, insurance Knowledge organizations – travelling, insurance, personell costs, seminars, workshops, services of experts, access to information and databases, indirect costs
Amount of funds	Currently no call opened. Until 2020 – up to 41 961 720 EUR (1 133 952 000 CZK)
Objectives	- enhance mobility and development of knowledge transfer between companies and research organizations - support and speed up innovation process of companies - harmonization of research topics between public sector and needs of companies - increase of interactions between companies and research organizations - increase openness of universities to cooperate with companies
Eligible recipients	SMEs, research and dissemination organization
Time plan for calls	Next call will be opened in 2017. Following calls will be decided upon mid-term OP evaluation.

COOPERATION (Spolupráce) http://www.agentura-api.org/programy-podpory/spoluprace/	
Supported activities	Technology platforms – support of development of national technological platforms leading to connection of public and private sector in RDI in technology areas, coordinating activities of the platform such as cooperation with European technological platforms, making solutions to industrial challenges and using of new technologies, organization of Czech organizations for better access to H2020 and other European programmes, segment development activities, knowledge sharing, barriers elimination, strategy documents developments, etc. Clusters – collective research, shared infrastructure, internationalization of cluster, development of cluster organization
Relevancy of this intervention programme	Relevant both to Home Care R&I + quadruple-helix cooperation in R&I
Reasons of its relevance for Home Care R&I	Cooperation projects in home care could provide substantial boost to research in this area and production of innovative products and services in this segment. They only need to fit to CZ NACE in the call as based on listing of activities in business registry of the main recipient. Medical devices and ICT is supported in CZ NACE categories. Hospitals could be listed in medical devices category in research, technical studies and analyses, health institutional care, and other activities related to protection of health. Associations in healthcare (86-9).
Reasons of its relevance for quadruple-helix cooperation in R&I	The cooperation programme as such fully meets criterias to support cooperative R&D&I activities between various multiple types of organizations including companies, research organizations, associations, financial institutions, public institutions and user and consumer associations. These could be organized together already as clusters representing already available triple/quadruple-helix structure. Other organizations could be involved also as external service purchased through eligible costs below.
Eligible costs	Collective research – personnel costs, insurance, external services in research and development (contracted research, consultation services), material, indirect costs Shared infrastructure – purchase of building, technical value development of buildings, equipment and devices including hardware and networks, software and data, intellectual property rights, rent Internationalization of cluster – personnel costs, insurance, travelling, services of consultants, experts, studies, marketing and promotion, seminars, conferences Cluster organization development – personnel costs, insurance, travelling, marketing, promotion, seminars, conferences, rent, management of cluster equipments, material Technological platforms – personell costs, insurance, services of consultants, experts, studies, marketing and promotion, seminars, conferences, rent, material, hardware, software
Amount of funds	Clusters: 15 155 000 EUR in current call (410 000 000 CZK) Technology platforms: 2 215 000 EUR in current call (60 000 000 CZK) Together until 2020 – up to 69 936 200 EUR (1 889 920 000 CZK)
Objectives	- development of innovation networks (clusters, technology platforms, etc.) - increase of intensity of joint R&D&I activities between companies and research organizations - enhancing relationships on regional, national and international level
Eligible recipients	Clusters, research organizations, purposeful network of entrepreneurs (only technology platforms)
Time plan for calls	Clusters: 2nd step of call (opened already in 11/2016) will be closed on 7.4.2017. Next call will be opened in 2017. Following calls will be decided upon mid-term OP evaluation. Technology platforms: The call will opened on 8.2.2017 will have closure on 1.6.2017. Next call will be opened in 2017. Following calls will be decided upon mid-term OP evaluation.

INFRASTRUCTURE SERVICES (Služby infrastruktury) http://www.agentura-api.org/programy-podpory/sluzby-infrastruktury/	
Supported activities	- Science-technological parks, innovation centres, or business incubators providing services to SMEs in strategic and innovation management, strategic market entry consultation, IP protection, developing research cooperation, commercialization of research results, access to capital, education services - Running science-technological parks, innovation centres, or business incubators - Developing premises, purchasing equipment and improving capacities for common usage of technologies - Construction of new shared infrastructure with no adequate RI infrastructure
Relevancy of this intervention programme	Relevant both to Home Care R&I + quadruple-helix cooperation in R&I
Reasons of its relevance for Home Care R&I	Infrastructure services and all related supported activities (services to innovative companies, operating research/technological park or incubator or innovation centre, or infrastructure creation can direct also home care actors in the regional innovation ecosystem given the focus on supported CZ NACE as based on listing of activities in business registry of the main recipient. Medical devices and ICT is supported in CZ NACE categories. Hospitals could be listed in CZ NACE in medical devices category in research, technical studies and analyses, health institutional care, and other activities related to protection of health. Associations in healthcare (86-9).
Reasons of its relevance for quadruple-helix cooperation in R&I	Infrastructure service owners (science-technological parks, innovation centres, or business incubators) could be public organizations or associations/clusters providing support in their region/town/field. Portfolio of eligible recipients is large as below including also towns, regions and public institutions, therefore quadruple helix cooperation might be established.
Eligible costs	Operation of innovation infrastructure (de minimis), development of innovation infrastructure places, new equipment purchase, improvement of capacities of joint usage of technologies, creation of new building for shared innovation infrastructure in the region with not enough innovation infrastructure yet
Amount of funds	64 745 000 EUR in already opened call (1 750 000 000 CZK) Until 2020 – 209 808 599 EUR (5 669 196 000 CZK)
Objectives	- increase quality of services of supporting infrastructure - increase intensity of joint R&D&I activities betwen public organizations and companies with special focus on realization of new technologies and new products / services - improve intersectoral cooperation and conditons for development of innovative companies - increase effectiveness of the whole innovation ecosystem
Eligible recipients	Innovation infrastructure owners/providers (science-technological parks, innovation centres, or business incubators) – SMEs, LMEs, public supported organization, public institution, university, public research institution, association, town networks, town, region
Time plan for calls	Current call opened from 28.11.2016 with closure on 28.4.2017. Next call will be opened in 2017. Following calls will be decided upon mid-term OP evaluation.

INNOVATION VOUCHERS (Inovační vouchery) http://www.agentura-api.org/programy-podpory/inovacni-vouchery/	
Supported activities	- Consultation, expert and support activities in innovations from research organizations with the aim to start or intensify innovative activities of SMEs (measurements, trials, consultations, cooperation with PhD students, purchase services, transfer of IP) - Support of activities of actors from innovation infrastructure such as innovation centres, science-technological parks with the aim to increase absorption capacity, distribution and using innovation vouchers
Relevancy of this intervention programme	Relevant to Home Care R&I
Reasons of its relevance for Home Care R&I	Innovation vouchers could be used to drive innovations also in Home care segment. Segment of activity needs to fit medical devices, ICT or other previously described CZ NACE categories.
Reasons of its relevance for quadruple-helix cooperation in R&I	N/A – innovation vouchers support solely cooperation of SMEs with research actors
Eligible costs	Consultation, expert and supportive services in innovation (e.g. measurements, diagnostic, testing, trials, analysis, software development and others)
Amount of funds	7 399 000 EUR in current opened call (200 000 000 CZK) Until 2020 – 13 987 240 EUR (377 895 000 CZK)
Objectives	- development of communication and know-how sharing between companies and research organizations to start and intensify own innovation activities of companies - higher competitiveness of SMEs
Eligible recipients	SMEs
Time plan for calls	The current call, opened on 31.5.2016 is still opened until 31.5.2017. Further calls to be decided.

Evaluation of applications

This section describes the evaluation process of all calls, as gathered from desk research and interviews with the Ministry of Industry and Trade of the Czech Republic.

Evaluation process for applications set up the same way for all intervention programmes calls?	No, it is different for various support programmes / calls
Where are the evaluators from?	From the partner country
Who evaluates applications of each of the intervention programme call?	**formal control for all support programmes the same:** employees of Agency for entrepreneurship and Innovations (API) **quality control for support programmes different based on expertise needed:** Innovation – MPO employees who can request external experts if needed Potential: MPO employees who can request external experts if needed Application: selected external experts Knowledge transfer partnership: selected external experts Cooperation: selected external experts Innovation Vouchers: simple evaluation via API employees based on formal control only

	Infrastructure services: selected external experts
Which evaluation criteria are used with what weight in each of the intervention programme.	1. Formal yes/no (binary) 2. Conditions at beneficiary (resources, competences, personal) 3. Quality of the application - defined by each set up call detailed conditions 4. Economical effectiveness 5. Regional impact Points 1-3 are set up by each call.

Governance of the relevant thematic priority axis of the Operational Programme

This section describes the governance process of OP EIC and all calls, as gathered from desk research and interviews with the Ministry of Industry and Trade of the Czech Republic.

Main management bodies that influence the OP	**Previously (not working anymore):** **Working Groups** - set up by MPO – members are MPO representatives, other ministries representatives (MMR, MPSV, MŠMT, MD, MŽP, MK) + external experts, economic and social partners – detailing priority axes, financial instruments, indicators, public support, methodology, information system, monitoring **Currently:** **Platform for preparing OP PIK** – set up by MPO, run by MMR (Ministry for Regional Development) – members are MPO representatives, representatives of other ministries (MMR, MF, MŠMT, MPSV, MŽP, MZe, MD), Agency for entrepreneurship and Innovation (API), Technology Agency ČR (TA ČR), economic and social partners including non-profits representatives, evaluators of the OP PIK – overviewing OP programme preparation, inclusion of relevant actors (selected or requested on their own), commenting after Working groups **Monitoring committee of OP PIK** (Monitorovací výbor) – set up by MPO – members primarily from Platform for preparing OP PIK – monitoring and evaluation of OP **Platform for planning of the calls** – set up by MPO – aside of Monitoring committee of OP PIK – detailing call planning **National innovation platform for RIS3** – group IV – medicals, biotechnologies, medical devices, life sciences – consultation group with expertise in given field creating a forum for initiative and recommending tasks. Results of their discussions are passed to Managing Authorities of Operational Programmes
Possibilities to influence the OP outside of commitees?	yes
How?	- become members of the committees / platforms described above based on self-request to MPO/MMR or being invited (Monitoring committee of OP PPIK, Platform for planning of the calls) - through presence and activity in Chamber of commerce (Obchodní komora), Confederation of Industry of the Czech Republic (Svaz průmyslu ČR), Association of research organizations (Asociace výzkumných organizací), Association of small and medium enterprises (Asociace malých a středních podniků), Czech rectors´conference (Česká conference rektorů)

2. SMART specialization strategy – RIS3

The "SMART specialization strategy – RIS3" section provides more detailed information on defined RIS3 in the region and the main supported R&I areas contributing to Home Care R&I. Information here is based on desk research and discussions with the Ministry of Industry and Trade of the Czech Republic.

SMART specialization strategy on the same level as above described Structural Fund? (e.g. national-national, regional-regional)	yes
RIS3 R&I specialization segments contributing to Home Care R&I support?	Excellence in delivery of highly innovative Home Care solution is crosscutting issue, involving ICT and Health. Both are addressed at national level - ICT, automatization and electronics - Healthcare and medical technology and devices These segments are therefore mirrored in supported CZ NACEs in all support programmes.

3. Other policy instruments relevant for Home Care R&I

The "other policy instruments relevant for Home Care R&I" section provides more detailed information on other policy instruments supporting R&I in Home Care, following the same description as for the Operational Programme described above. The information contained here is based on desk research of all below programmes and interviews with the Ministry of Industry and Trade.

TRIO (Trio) http://www.mpo.cz/dokument166432.html	
Geographical coverage	national
Managing Authority	Ministry of Industry and Trade of the Czech Republic (MPO)
Intermediate body	N/A
General objectives	- supports KETs: photonics, microelectronics, nanoelectronics, nanotechnologies, industrial biotechnologies, advanced materials and technologies and application of its R&I results in business sector - supports areas with potential of growth: transport, mechanical engineering, electronics, electrotechnics, IT services and software, electric energy, medicals and medical devices. - increases collaboration in R&I between businesses and research - supports development of prototypes, software, proved technology, industrial samples or patents - increase innovation demand in businesses - increase relevance of research
Names of priority axes supporting Home Care R&I	N/A
Specific objectives of the given priority axis	N/A
Intervention programmes relevant for Home Care R&I available in this policy instrument?	No specific support programmes - Relevant to Home Care as it supports for example medical devices and IT services and software in KETs - Relevant for Quadruple-helix as it support increase of effective cooperation between businesses and research sector, other types of

	organizations can take part as external services purchased - Amount of funds until 2021 – 136 849 000 EUR (3 700 000 000 CZK) - Eligible recipients: businesses in cooperation with research actors, from all over the Czech Republic - Time plan for calls: currently closed call at the end of 11/2016, next call in 2017
EPSILON (Epsilon) https://www.tacr.cz/index.php/cz/programy/program-epsilon.html	
Geographical coverage	national
Managing Authority	Technology Agency of the Czech Republic – TA ČR (Technologická agentura ČR)
Intermediate body	N/A
General objectives of the policy instrument	-Support of projects of applied research and experimental development, the result of which have great potential for quick application in new products, processes and services
Names of priority axes supporting Home Care R&I	1- Competitive knowledge-based economy (Konkurenceschopná ekonomika založená na znalostech) 5- Healthy population (Zdravá populace)
Specific objectives of the given priority axis	- Assure transfer and application of new knowledge to application sphere and increase chances for sustainability of strong industries in the Czech republic via R&I - Improve management system and parameters of products, services and processes which will increase their security and reliability - Decrease society costs created from failures of products, services and processes
Intervention programmes relevant for Home Care R&I available in this policy instrument?	Knowledge based economy (znalostni ekonomika) - Relevant to Home Care as priority 5 (Healthy population) works in this support programme as horizontal priority being affected via all main 3 sub-programmes – and research aims of this are e.g. assurance of quality of life, drug delivery systems, navigation and robotic systems - Relevant for Quadruple-helix as it support increase of effective cooperation between businesses and research sector and other types of organizations be involved via external services purchased. - Eligible costs: personell costs, machines and equipment costs for the time of project, costs for contracted services, patents, research, additional operation costs - Amount of funds until 2022 – 215 060 000 EUR (5 814 000 000 CZK) - Eligible recipients: businesses and research actors, from all over the Czech Republic - Time plan for calls: next call will be opened in April 2017 and further calls will be also opened until 2018
SUPPORT PROGRAMME OF EACH/MOST REGIONS IN CZ (Regionální inovační program jednotlivých regionů) **https://www.jic.cz/vouchery-kraje/**	
Geographical coverage	regional
Managing Authority	The regional office itself (e.g. South Moravian Innovation Centre - JIC, Liberec region, etc.)
Intermediate body	Specific for each region
General objectives	- Support regional innovation activities in specified fields
Names of priority axes supporting Home Care R&I	Regional Innovation Programme (Regionální inovační program)

Specific objectives of the given priority axis	For each regional office and their programme slightly different, in general: - Increase knowledge transfer between academia and research actors to businesses - Set up long term cooperation between academia, research and business sector
Intervention programmes / intervention areas relevant available in this policy instrument?	Innovation Vouchers (Inovační vouchery) - Relevant to Home Care as it supports regional innovation activities in regional RIS3 priorities (for those relevant regions), where for each region there are various priorities that suit the potential of home care - Not relevant for Quadruple-helix as it supports direct cooperation mainly between SMEs and research - Amount of funds in 2017 – specific for each regional programme - Objectives of support programme: start of long-term cooperation for more demanding projects, increase competitiveness of businesses, enhance effectiveness of commercialization of research results - Eligible recipients: regionally located businesses - Time plan for calls: usually each year

4. Regional innovation ecosystem in Home Care R&I

The "regional innovation ecosystem in Home Care R&I" section provides more detailed view on regional innovation ecosystem in Home Care R&I including a general description overview of the ecosystem followed by a list and a description of the most important supporting platforms, networks, events, major projects carried out already and most significant actors in all 4 helixes of quadruple-helix cooperation approach – formal and informal providers of health care, businesses, research and public institutions – who might work together to drive new innovations in Home Care. Information within this section is based on extensive desk research, interviews and discussions with innovation actors in home care including the Ministry of Industry and Trade in the Czech Republic.

Summary description of regional innovation ecosystem in Home Care R&I

Summary description of regional innovation ecosystem in Home Care R&I including the most significant main actors, infrastructure, resources, available public / private supporting services, networks, platforms and events)
Home care as segment can be strategically supported in the Czech Republic through RIS3 strategy via a merged focus of innovative healthcare and ICT solutions. There is a rather small network of actors very active in this area in the Czech Republic who are already networked from past joint activities and initiatives – especially from research organizations and business supporting organizations. Others research actors active in healthcare research or homecare service provision, healthcare providers of formal or informal care want to get involved more frequently. Public institutions´ interest and possibilities of involvement in OP EIC programmes are limited. The most significant actors from healthcare providers who are involved in research and innovations in home care are for example Life 90, Gerontology centre in Prague 8, Caritas Czech Republic and Association of social care providers in the Czech Republic. Business helix is represented most significantly for example by Clevertech, International telemedicine centre, Ness Technologies, Linet and National centre for social innovations. Research actors, for example, include ČVUT faculties of biomedical engineering and electrical engineering, National telemedicine centre and Albertov Research centre. Most active public actor, aside from Ministry of Industry and Trade, Ministry of Health and Ministry of Social Affairs is for example the Institute of development and planning of Prague. The list above is exemplary and more actors are listed below based on available knowledge at the time of finalization of this report. There exist several events and networks that could be used to network build cooperation and get innovative ideas together – such as eHealth Day, CzechMed, ICT in health, Association of social care providers in the Czech Republic, Czech national forum for e-health, Association of producers and importers of medical devices,

Czech Medical Association of J. E. Purkyně, Home care Association, National innovation platform for RIS3 strategy and National innovation platform for services of assisted living.

Already successfully initiated projects in home care include Protectu (surveillance services on elderly people at home environment), Intelligent Primer Nurse (device for monitoring of the heart rate and user's activity), OLDES (innovative technological system for tele-assistance and tele-accompany) and SMART4MD (tablet application for mild dementia patients, their informal carers and healthcare professionals).

Currently, actors from the home care innovation ecosystem can use several national public funding programmes (aside of private funds or EU programmes) to support their innovative ideas: OP EIC, Trio, Epsilon and regions´ innovation vouchers schemes. However, due to the concentration of activity in this regards into only few actors of the ecosystem, due to some potential programme obstacles in terms of segment category (home care) fitting to the programme and eligible types of main beneficiaries), and not strong joint lobbying voice for changes inside the programme, the annual amount of submitted applications in home care for funding is very low each year.

Existing platforms, networks and events supporting Home Care R&I

Existing platforms / networks supporting Home Care R&I	- Asociace poskytovatelů sociálních služeb České Republiky – www.apsscr.cz – association of social care service organizations in ČR - České národní fórum pro e-health - http://www.ehealthforum.cz/cs - open platform for increasing general awareness of e-health, support its development and communication - Asociace výrobců a dodavatelů zdravotnických prostředků – http://www.medtechnik.cz/ - association of producers and suppliers of medical devices that aims to develop the industry in terms of innovations and based on research, design and quality - Czech Medical Association of J E Purkyně – important czech independent association in healthcare - Asociace domácí péče ČR - http://www.adp-cr.cz/ - association of home care service organizations in ČR by region - Národní inovační platforma pro RIS3 strategii – skupina IV – medicals, biotechnologies, medical devices, life sciences – consultation group with expertise in given field creating a forum for initiative and recommending tasks. Results of their discussions are passed to Managing Authorities of Operational Programmes. - Národní platforma pro služby asistovaného života – networking in area of usage of assistive living technologies (health and social) for expert support of public sector, creation of consortiums to provide solutions and know-how sharing with foreign countries
Existing regular events (both formal and informal) supporting Home Care R&I	- eHealth Day – event for exchange of opinions and experiences in e-health, telemedicine and ICT applications for support of health care – organized in cooperation with Ministry of Health, more than 100 participants - CzechMed – annual conference of Czech Association of suppliers of medical devices in winter-spring each year to present current topics and trends in health industry - ICT ve zdravotnictví – annual expert conference and exhibition on e-health and ICT as tools for effective health management, prevention, diagnostics, care and monitoring

Main actors in Home Care R&I in all 4 helixes of quadruple-helix model – formal and informal providers of health care, businesses & business supporting actors, research and public institutions

This section is based on available information from desk research and interviews with mainly innovation actors and does not constitute a full exhaustive list.

1. Citizens / users helix

Main formal + informal providers of healthcare, elderly care recipients / associations in Home Care R&I	
Name + website	Description of activities focused on in that field
Association of social care providers (Asociace poskytovatelů sociálních služeb), http://www.apsscr.cz/	- provides expert opinions on the field of social care via experience of its members - supports sharing of research knowledge to its social care providing members - has extensive knowledge on customers´ social and health needs for home care - supports exchange of good practices nationally and internationally - initiates information, education and expert activities in the field of social care
Life 90 (Život 90), http://www.zivot90.cz/	- long-term experience with home care services for seniors - access to knowledge on customers´ needs in home care
Gerontology centre Prague 8 (Gerontologické centrum v Praze 8), http://www.gerontocentrum.cz/	- home care services for old patients at home in Prague 8 - closely connected to Czech Alzheimer Society
Caritas Czech Republic (Charita Česká Republika), http://www.charita.cz/	- provides home care services via its carers to older, ill or handicapped people so has extensive knowledge on customers´ needs for home care - has great network of home care services in all regions of the Czech Republic
Association of home care of the Czech Republic (Asociace domácí péče České Republiky), http://www.adp-cr.cz/	- provides up-to-date information in home care services - informs on prepared legislative changes in home care services - influences developments in home care in the Czech Republic
Pardubice Hospital (Nemocnice Pardubice), http://pardubice.nempk.cz/	- has experience with home care services to patients out of the hospital - provide a wide range of services within home care offer - has knowledge on home cared patients´ needs
Regional hospital Liberec (Krajská nemocnice Liberec), https://www.nemlib.cz	- has long-term experience with home care services outside of hospital - supports patients with rehabilitation and compensation devices

2. Business helix

Main businesses and business supporting actors in Home Care R&I		
Name + website	Business or business supporting actor	Description of highly innovative solutions provided in that field
CleverTech (CleverTech), http://www.clevertech.cz/	Business	- Protectu – acquires and processes environmental and medical parameters describing senior's health status.

		All information acquired by personal unit is transmitted to the monitoring center which provides immediate and optimal feedback to the clients by several means - phone call, alert to the family, rescue service, police, etc. Personal unit provides voice communication with the monitoring center, localization by GPS signal and other required features. It is a small mobile unit. Medical sensor peripheries could extend supervised client parameters. http://www.protectu.cz/
International telemedicine centre (Mezinárodní telemedicínské centrum), http://www.mdt.cz/	Business	- Innovative telemonitoring services for cardiac patients at home including selling/renting monitoring devices to patients directly or indirectly via healthcare professional
Ness Technologies (Ness Technologies), http://www.ness.cz/	Business	- 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.)
Linet (Linet), http://www.linet.com/	Business	- Innovative hospital and care beds for intensive and standard care including also patients being cared for at home or in senior houses
Linde HealthCare (Linde HealthCare), http://www.linde-healthcare.cz/	Business	- Innovative oxygen and inhalation therapies for patients being cared at home - Medical tools for inhalation and breathe rehabilitation
Mediinspect (Mediinspect), http://www.inspectlife.cz/	Business	- InspectLife is an assistance surveillance for active seniors and their relatives, telemonitoring from home and assistive home services
TSE (http://www.tse.cz/)	Business	- Developing project for remote monitoring of seniors (fall and life threatening situations detection and person localization
Nanoprogress, http://www.nanoprogres.cz/en/	Business supporting actor	- cluster of research organizations and businesses leading the nanotechnology innovations (also with application in healthcare)
National centre for social innovation (Národní centrum sociálních inovací)	Business supporting actor	- Innovation and development projects in area of assistive and health technologies - Supports financing of innovative projects, technology transfer and commercialization of knowhow - Information and education in the assistive technologies, social and process innovations
Czech National Forum for e-health (České Národní forum pro e-health), http://www.ehealthforum.cz/	Business supporting actor	- Supports cooperation of members of forum with users, health centres, health insurance companies, public institutions at national, regional and local level, EU institutions, SMEs, NGOs and government - Events, consultations and publications in e-health
Novi Solutions (Novi Solutions), http://www.novisolutions.co	Business supporting actor	- Technical-economic studies for economical effectiveness of project idea - Support in application preparation for innovative

m/		projects - Financial and time management of projects

3. Research helix

Main research actors in Home Care R&I	
Name + website	Description of excellent research activities done in that field (e.g. patents in this field)
Czech Technical University in Prague – UCEEB – faculty of biomedical engineering – team focused on quality of inner environment (ČVUT – fakulta biomedicínského inženýrství – tým kvality vnitřního prostředí), http://www.uceeb.cz/tymy/kvalita-vnitrniho-prostredi-rp3	- Research and development in medical assistance systems for monitoring of biological parameters and technical parameters in intelligent buildings - Development of intelligent composite nanosystems and materials for medical and technical applications - 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
Czech Technical University in Prague – faculty of electrical engineering - biomedical electronic group (ČVUT – fakulta elektrotechnická – skupina biomedicínské elektroniky), http://bmeg.fel.cvut.cz/	- Biomedical electronics and biomedical signal processing especially in the field of telemedicine, telemonitoring and assistive technologies - Intelligent primer nurse – prototype of multi-purpose device suitable for use in senior homes, spas or for lonely seniors, for activating alarm in the life threatening situation like low or high heart rates or inactivity of user. - Telemonitoring of vital signs – telemedical system for distant monitoring of the selected vital signs like heart rate, blood oxygenation, breathing frequency, etc. - OLDES + SPES project dealing with tele-care platform development and piloting
Czech Technical University in Prague - faculty of electrical engineering engineering – Centre of assistive technologies (ČVUT – fakulta elektrotechnická – Centrum asistivních technologií), https://www.asistivnitechnologie.cz/catcmsms/	- Intelligent home for testing and development of new technologies potentially usable in intelligent homes
Centre for studies of longevity and long-term care (Centrum pro studium dlouhověkosti a dlouhodobé péče) (CELLO) - http://cello-ilc.fhs.cuni.cz/CEL-10.html	- Analysis of needs of family carers for seniors given numerous phases of care - Description of practical, cognitive and social factors that could improve using of new technologies in care for dementia patients
University hospital Olomouc – National telemedicine centre https://www.fnol.cz/narodni-telemedicinske-centrum_78.html	- realization of clinical studies in telemedicine
Albertov Research Center	- Homebalance - interactive system for home-based therapy of balance

http://www.albertov.cz/	disorders - Protectu - innovative assistance services for families designed to promote active and healthy aging seniors - Telebit - long-term monitoring and recording of the state of health of the individual trends in the home environment - TelMed - utility, measuring and evaluation client-server-based software for telemedicine labs equipped with specific hardware sets of telemetric devices - VLV Lab - continuous and accurate sensing of biological and technical signals, such as electrocardiogram, electromyogram, skin resistance, respiration curve, temperature, humidity, pressure, physical activity, etc., all synchronized in the same timeline.
Faculty hospital Pilsen (Fakultní nemocnice Plzeň), https://www.fnplzen.cz/	- extensive research for example in oncology, cardiovascular diseases, geriatrics, neurology and e-health – potential usable for home care innovations - work with patients before going to out of hospital to home care
National institute for psychical health – Alzheimer Disease centre (Národní ústav duševního zdraví, AD centrum), http://www.nudz.cz/adcentrum/english.html	- research activities on Alzheimer disease
University of West Bohemia, Dpt. of Man-Machine Interaction, New Technologies – Research Centre (Západočeská univerzita, oddělení Interakce člověka a stroje, Nové technologie – výzkumné centrum), mmi.zcu.cz	- Research in area of human cognitive enhancement for aging population - Technology Assessment of intelligent human-machine interfaces and HCE systems - Quality of Experience (QoE) research in man-machine interaction systems - Human body modelling and ergonomics for rehabilitation and healthcare services - Cognitive ergonomics - Software development for wearable technologies

4. Public institutions / government helix

Main public actors (policy decision makers including Managing Authority of OP, health insurance companies, health and social care regulators) in Home Care R&I	
Name + website	Description of activities relevant for Home Care R&I
Ministry of Industry and Trade of the Czech Republic (Ministerstvo průmyslu a obchodu ČR), www.mpo.cz	- Managing Authority of OP EIC (OP PIK) that supports research and innovations via priority axis 1 of OP PIK, specific aim 1.1 for increasing innovation performance of enterprises, and 1.2 for increasing intensity and effectiveness of cooperation in R&D&I - Managing Authority of programme TRIO that supports innovations in KETs - OP PIK and TRIO programmes could be used for financing home care innovative products and services
Ministry of Health of the Czech Republic (Ministerstvo zdravotnictví ČR), http://www.mzcr.cz/	- Supports R&I in health via its priorities – e.g. no. 5 – Healthy population
Ministry of Labour and Social Affairs of the Czech Republic (Ministerstvo	- Coordinates and realizes National Action Plan for active ageing 2013-2017 and monitor its accomplishment - Includes senior and pro-senior non-profit organization to find solutions

práce a sociálních věcí) http://www.mpsv.cz/cs/	- Implements Concept for development of technologies and services of assisted life for seniors - Supports social innovations projects and initiatives through its call on social innovation
Institute of development and planning of Prague (Institut plánování a rozvoje hl. Města Prahy), http://www.iprpraha.cz/	- Leading initiator of smart cities initiatives in the Czech Republic by being a part of Triangulum project - Provides and managing authority of innovation vouchers scheme in Prague
Technology agency of the Czech Republic, (Technologická agentura ČR), https://www.tacr.cz/index.php/en/	- Manages Epsilon programme for support of applied research and experimental development that could be used for financing home care innovations
General health insurance company of the Czech Republic (Všeobecná zdravotní pojišťovna České republiky), https://www.vzp.cz/	- Biggest network of healthcare professionals and healthcare centers financially supported in their operations - Leader in application of new medicine and health methods in practice - Finances home care health services through their regulations and lists of supported activities

Most significant research projects / research cooperation initiatives in Home Care R&I

This section is based on available information from desk research and interviews with mainly innovation actors and does not constitute a full exhaustive list.

Significant R&I projects / research cooperation initiatives in Home Care realized in Czech Republic during 2007-2016		
Project name + description	Participating members / organizations	Results of the activities
SMART4MD, www.smart4md.eu – Support, Monitoring and Reminder Technology for Mild Dementia – international H2020 innovation project aiming to develop and test tablet application specifically designed for mild dementia patients, their family carers and relevant healthcare professionals, and including functionalities based on reminding, brain training, health monitoring and support	DEX Innovation Centre (CZ), Alzheimer Europe (LUX), Pow Health (UK), Anglia Ruskin University (UK) + Blekinge Institute of Technology (SE), Servicio Andaluz de salud (ES), Consorci Sanitari de Terassa (ES), Universita Politecnica de Madrid (ES), University college Leuwen-Limburg (BE), Athena ICT (ISR)	-prototype of SMART4MD application for tablet -linked clinical centres to carry out the clinical study
PROTECTU, http://www.protectu.cz/ - designated for surveillance services on elderly people at home environment. The main feature of the system is acquisition and processing of various environmental and medical parameters describing senior's health status. All information acquired by personal unit is transmitted to the monitoring center (available 24hours, 7 days in the week). This center provides immediate and optimal feedback to the clients by several means - phone call, alert to the family, rescue service, police, etc.	CleverTech (CZ) + Faculty of biomedical engineering ČVUT (CZ) + 1st medical faculty Charles University (CZ)	-software for monitoring -mobile device for seniors

INTELLIGENT PRIMER NURSE, http://bmeg.fel.cvut.cz/?page_id=20 - aims with the design and realization of the device for monitoring of the heart rate and user's activity. The device is something like personal wireless bed side monitor with remote display. Connection to the computer unit is provided by a Bluetooth module. a special algorithm is implemented for activating alarm in the life threatening situation like low or high heart rates or inactivity of user, where a danger of losing consciousness exists.	Biomedical electronics group at Czech Technical University in Prague (CVUT)	-device with remote display and Bluetooth module
OLDES, http://bmeg.fel.cvut.cz/?page_id=20 – Older people´s e-services at home - new technological solutions to improve the quality of life of older people via a very low cost and easy to use entertainment and health care platform, designed to ease the life of the elderly in their homes, an innovative technological system for tele-assistance and tele-accompany.	ENEA-Brussels liaison office, Municipality of Bologna, CUP2000, The University of Bologna, The Local Health Authority of Bologna, The University of Newcastle upon Tyne, CETIC, The Czech Technical University in Prague /CVUT (CZ), Charles University in Prague (CZ), INK Media (CAN), AGENTSCAPE	-tele-assistance and tele-acompany platform -pilots in Italy and Czech Republic -follow up SPES project focused on additional 4 specific diseases
K4CARE, http://www.ehealthnews.eu/k4care - design, implementation and validation of a new ICT knowledge-based Homecare Model to manage and respond to the needs of the increasing number of senior population requiring a customised health-care at home.	Universitat Rovira i Virgili (ES), Centro Assistenza Domiciliare (IT), Czech Technical University in Prague (CZ), Universita degli Studi di Perugia (IT), Telecom Italia Spa (IT), European Reseach and Project Office (GE), Ana Aslan International Foundation (RO), Instituto di Ricovero e Cura a Carattere Scientifico Santa Lucia (IT), Magyar Tudomanyos Akademia Szamitastechnikai es Automatizalasi Kutato Intezet (HU), The Research Institute for the Care of the Elderly (UK), Comune di Pollenza Macerata (IT), General University Hospital in Prague (CZ), Szent Janos Hospital of the Budapest Municipal Government (HU)	-Electronic Health Care Record (EHCR) -a new ICT Homecare Model (HCM) -Definition of Formal Intervention Plans (FIPs) for a number of disease and syndrome treatments
RESEARCH AND DEVELOPMENT CENTRE FOR COMPLEX DIAGNOSTICS, http://www.czechinvest.org/42-pt03074-vyzkumne-a-vyvojove-centrum-pro-komplexni-diagnostiku-stredocesky-kraj-jihomoravsky-kraj - increase of capacities of operations and support of activities of research and development centre CleverHomeCare	CleverTech (CZ)	Equipment for research and development of systems for personal healthcare not focused only on home monitoring but also for healthcare in hospitals and other providers of health and social care
INNOVATION 4 WELFARE, http://www.innovation4welfare.eu/ - six European regions have exchanged best	ACC1Ó (ES), CESTEC S.p.A. (IT), Province of Noord-Brabant (NL), Regional Development Agency of South	FITREHAB - Fitness and rehabilitation at home under expert

practices, developed 8 new innovation projects and influenced regional policies by stimulating innovation in the field of health and safety ('welfare'). Although the six regions had different experiences they also had a lot in common or at least had the challenge to work on issues in the following application fields: Services and products for special target groups (like elderly people); Accessibility, mobility and smart homes; Medical and home care systems; Safety and security. In these application fields technical solutions within ICT, food- and bio-technology, advanced materials and design have been applied.	Bohemia RERA (CZ), TMG - Austrian Technology and Marketing Company (AT), Tartu Science Park (EE)	planning FoBoS - Sharing molecular techniques for food-borne detection HaS Passport - Benchmarking of regional health and social institutions especially in rural areas MNEMOSYNE - Teleassistance services for eldery patients with dementia syndrome, Alzheimer and their family MRH - Mechatronics based rehabilitation at home PICKFIBER - Platform for international collaborative knowledge on food improvement ROBO M.D. - Home care robot for monitoring and detection of critical situations TIAM - Toolkits for harzard identification, risk assessment and prevention

5. Regional strategies / analyses / studies carried out in or relevant for Home Care

This section provides references to strategies, analyses and studies carried out that are relevant to Home Care segment and be exploited for any innovation activities in home care. This section is also based on available information from desk research and interviews with mainly innovation actors and the Ministry of Industry and Trade and does not constitute a full exhaustive list.

Market analysis name	Short description of the aim of the analysis	Website link for more information / download
Health 2020 – National strategy of health protection and support and illness prevention – Action Plan 8 – increasing quality, accessibility and effectiveness of after care, long-term care and home care (Zdraví 2020 – Národní strategie ochrany a	- Analysis of current state of art in after care, long-term care and home care services system in the Czech Republic including potential areas where further support from the Ministry of Health needs to be given (including potential products and services)	http://www.mzcr.cz/Admin/_upload/files/5/ak%C4%8Dn%C3%AD%20pl%C3%A1ny%20-%20p%C5%99%C3%ADlohy/AP%2008a_zaprac%20pripominek%20MPR_cervenec15.pdf

podpory zdraví a prevence nemocí – Akční plán 8 – zvyšování kvality, přístupu a efektivity následné, dlouhodobé a domácí péče)		
Results of health accounts 2015 – Expenses for long term care (Výsledky zdravotnických účtů ČR 2015 – Výdaje na dlouhodobou péči)	- Analysis of expenses covered by insurance companies in various types of health problems and types of care, including home care	https://www.czso.cz/csu/czso/vysledky-zdravotnickych-uctu-cr-2015
Support of family carers looking after seniors – regional study Prague 7+8 (Podpora rodinných pečujících o seniory – regionální studie Praha 7+8	- Mapping of basic characteristics of family carers taking care of seniors, their experience with care in home environment, experience with using social/health services and their needs in caring for the senior	http://www.praha8.cz/file/jYc/Analyza-potreb-rodinnych-pecujicich.ppt
National research and innovation strategy for smart specialization of the Czech Republic – National RIS3 strategy (Národní výzkumná a inovační strategie pro inteligentní specializaci České republiky – Národní RIS3 strategie	- RIS3 strategy in the Czech Republic – specification of healthcare and advanced medicine specialization, priorities of research, development and innovations found out via national innovation platforms	http://www.vyzkum.cz/FrontClanek.aspx?idsekce=741706&ad=1&attid=782731
Working document summarizing area of assistive technologies and possibilities of their usage in social, health and informal care systems (Pracovní document shrnující oblast asistivních technologií a možností jejich využití v systémech sociálních, zdravotních a v systému neformální péče)	- Mapping and summarising area of assistive technologies and describes possibilities of their usage in social, health, informal and home care systems. Complex and expert-popular material with declarative and information character serving for assistive technologied awareness raising.	http://www.podporaprocesu.cz/pracovni-dokument-shrnujici-oblast-asistivnich-technologii-a-moznosti-jejich-vyuziti-v-systemech-socialnich-zdravotnich-a-v-systemu-neformalni-pece/
Survey of Health, Ageing and Retirement in Europe	- Pan-european longitudinal data set including people over 50 years and their families. - Main topic of this multidisciplinary research are: demographics, family, education, physical and psychical health, healthcare and risks, cognitive functions, employment and retirement, mutual help and finances in the family, wealth, social support, activities, quality of life and expectations towards future.	http://share.cerge-ei.cz/
National Action plan supporting active ageing for 2013-2017	- Definition of basic priorities, aims, measures, timing and responsibilities - Additional background study with statistical data, international research and trends and current situation in the Czech Republic in: policy, protection, education,	http://www.mpsv.cz/files/clanky/20851/NAP_311214.pdf

	employment, cooperation, environment quality, healthly ageing, and care for seniors with disabilities	
Research agenda on ageing for the 21st century	- Identification of priorities for policy related research and data collection - Builds on knowledge and expertise assembled in gerontology and related fields	http://www.cggs.cz/dokumenty/research.pdf.pdf
National strategy for e-health (Národní strategie pro e-health)	- Strategy for e-health development in the Czech Republic - Future vision of state of art, basic rules, objectives, priorities, responsibilities	http://www.nsez.cz/
Population ageing scenarios (Scénáře stárnutí populace)	- Scenarios for population ageing - Social and technological challenges	http://wp6.pacitaproject.eu/brozura/

6. Quadruple-helix cooperation in R&I

The "quadruple-helix cooperation in R&I" section provides more detailed review of existing quadruple-helix model research projects / cooperation initiatives in general health care (with a potential to transfer to a Home Care segment) as well as Home Care segments including the list and description of the most significant ones. The projects / cooperation initiatives cited for general health sector aim to provide comparison of quadruple-helix model based research and innovations usage in general health sector compared to sector of Home Care R&I usage only. The last part of this section reveals attitudes of the main actors in R&I from all 4 helixes (formal and informal health care providers, business & business supporting actors, research and public institutions) towards using quadruple-helix model based cooperation in R&I. Information within this section is based on available information when finalizing and publishing through interview information exchange mainly with innovation ecosystem actors.

Quadruple-helix model based research projects / cooperation initiatives in general health R&I (excluding Home Care R&I but with a potential for transfer into Home Care segment, both pure regional or international with regional implementation)

INTRAMED-C2C https://www.youtube.com/watch?v=3Qx7DhQSQEo	Clinics have a high potential for innovations in product, process and service development in the overall medical industry. Yet, the transfer of innovation ideas from them to companies was weak. Knowledge for innovation is available in clinics, not only referring to medical staff, but also to the scientific and technical employees. The problem is to encourage and extract the knowledge out of people´s mind. There is a significant lack of transfer of ideas to marketable products, because often no efficient incentive schemes exist to stimulate clinical employees to discuss identified innovations. The clinical sector is largely dominated by global players on the supply side. If innovations are identified in clinics, they are discussed first with representatives of these clinics suppliers. In the past, they were however only interested in this discussion, if these ideas for innovations fit to their company and product strategy. SMEs are highly interested to get access and to be involved in the innovation transfer process and they have certain advantages and flexibility in developing labtypes, prototypes and SME solutions for bottom-up innovation approach. - Analysis of key players in each regions - Evaluation of clinics concerning their potential and motivation for inventions and innovations - Regional innovation workshops with (A) healthcare providers, B) SMEs, C) R&D, D) healthcare insurrance companies, healthcare decision

	makers and political groups - Pilot generation of new products, processes and services by cooperation of clinics and SMEs - Transnational matching plan of clinical innovations with SMEs - Deployment strategy of the Innovation transfer from clinics to companies Quadruple-helix cooperation roles: - Clinics/hospitals – supply side of innovation ideas - SMEs – demand side of innovation ideas, producers of solutions - Research – part of innovation workshops to shape pilots - Public institutions – part of innovation workshops to shape pilots
INFORMATION TECHNOLOGIES FOR DEVELOPMENT OF CONTINUOUS SHARED HEALTHCARE http://devel.rvvi.cz/cep?s=jednoduche-vyhledavani&ss=detail&n=0&h=1ET200300413	Development of methods and technologies for securing continuous shared healthcare in information society with focus on remote access to health information and common system for electronic documentation using personal identification chip cards. Testing methods and technologic solutions in selected health providers such as Všeobecná fakultní nemonice Praha, Městská nemocnice v Čáslavi, emergency service in Čáslav and selected ambulances in Čáslav or Prague region Quadruple-helix cooperation roles: - Hospitals/ambulances/emergency – testing of selected methods and technologic solutions - SMEs – development of software - Research – research and development of technologic solutions - Public institutions – as hospitals part of pilot testing
CZECH MEMBRANE PLATFORM http://www.czechinvest.org/51-sptp01007-ceska-membranova-platforma-liberecky-kraj	Support of activities of Czech membrane platform (CZEMP) and development of planned activities. CZEMP united specialists and important institutions involved in research, development and realization of membrane operations in technologic processes of various industry segments. Connecting all relevant actors enables their common professional cooperation based on perfect information sharing internally and internationally. Faster implementation of research results to application sphere via members of the platform is an engine for development of the industry. CZEMP supports education and promotion of the industry on national and international level. Quadruple-helix cooperation roles: SMEs/LMEs/research/public institutions + user organizations – all members of platform
NANOPROGRESS http://www.czechinvest.org/51-spk02018-nanoprogres-kraj-pardubicky-liberecky-jihomoravsky-stredocesky	Nanoprogres was created in 2010 as association of businesses, academic institutions and research organizations to increase competitiveness and support entrepreneurship in nanotechnology field. Through this project, Nanoprogres financed 5 separate projects focused on research and development of nanofibers for application in industry and biomedicine. Project 1 – Development of replicable method of preparation of nanofibres Project 2 – Development of medical devices based on functional nanofibres for outer application, skin protection and chirurgistic aplication Project 3 – Medical devices based on functional nanofibres for use on biomodels Project 4 – Preparation of native proliferate factors, sterilization and packaging of samples and transport organization Project 5 – Common project for the cluster promotion Quadruple-helix cooperation roles: SMEs/LMEs/research/public institutions – all members of cluster

Quadruple-helix model based research projects / cooperation initiatives in Home Care R&I

OLDES http://www.oldes.eu/index.html	The number of older people in the EU is strongly increasing and the related burden in terms of public expense is getting higher and higher. More and more older people are living alone; in many cases those people are not supported by a "social/family network" capable of assisting them and in many other cases they hardly can afford private carers. This creates substantial problems in terms of resources needed for assisting them. Lots of seniors are immobile and are socially excluded. - Definition of the needs of elderly people and their families with the possibility of direct interaction with health care services - creating dialog among all the future stakeholders of the platform to help them participate in its construction. Dynamic focused group sessions elicited the needs of all stakeholders - Design and development of a very low cost and easy to use entertainment and health care (tele-accompany and tele-care) platform in terms of technologies, services, organisational models and user interfaces - user entertainment services, through easy-to-access thematic channels and special discussion groups supported by animators, as well as health care services based on established Internet and tele-care communication standards, including wireless environment and medical sensors linked to health care providers. - Testing of OLDES application in Bologna and Prague - Results Communication and dissemination activity; further exploitation in follow up SPES project further developing / specifying platform for additional 4 specific diseases support Quadruple-helix cooperation roles: - University/municipal hospitals – piloting sites, supply of patients for prototyping and usability testing - SMEs – platform design, software, exploitation - Research – sensors, devices, system requirements and architecture, graphical intereface - Public institutions – Pilot, evaluation
SMART4MD http://www.smart4md.eu/	SMART4MD project is an EU-scale research project focusing on experimental treatment of mild dementia. There are 11 international partners of this project including Alzheimer Europe. This project builds on an innovative patient support tool to develop a mHealth application that is specifically targeted to patients with mild dementia. The content and layout of mHealth SMART4MD application, which will be accessible via tablets given to patients during the experimental pilot treatment, will be based on findings from the first stage of the project focused on user-centric design (focus groups, interviews, tests), but generally will be based on simplicity, memory helpers, reminders, photos, information sharing with carers and doctors and easiness of use for the patients. The SMART4MD tool will help patients to adhere to their treatment, reduce the progression of their illness and share data with their carers and doctors. This will slow the patients' cognitive and functional decline, avoid carers getting exhausted and reduce costs of emergency care. - Definition of the needs and preferences of mild dementia patients, their informal carers and healthcare professionals - Adaptation of general e-health platform to specific mhealth tablet application for mild dementia - Definition of pilot testing procedures including Standard Operating Protocols

	- Ethical approvals for pilot testing in 5 countries - 2 year testing - Analysis of data and research, promotion - Further exploitation of the SMART4MD application Quadruple-helix cooperation roles: - Hospitals – focus groups / interviews during development of app, clinical study design, clinical study of final application - Universities/innovation centres – data analysis, focus groups / interviews during development of app, clinical study design, clinical study of final application, exploitation - SMEs – design and development of SMART4MD app, accessibility platform adaptation process for mild dementia, exploitation - Patient organization – ethical issues, communication, adaptation of platform to mild dementia - Public institutions – hospitals as part of clinical study, support from regions/countries with focus groups / interviews process
INNOVATION 4 WELFARE http://www.innovation4welfare.eu/	Across Europe, economic and demographic developments pose new challenges in health related issues: a general tendency to prioritise on health and safety, the strong increase in welfare-related diseases and the increased need for (home) care for the ageing population are causing health care costs to increase rapidly, Innovative solutions are necessary to meet these challenges and to avoid health care becoming unaffordable. Innovation 4 Welfare has brought together policymakers, knowledge providers, economic and social intermediaries and health institutions, implementing projects and policies across six regions. These stakeholders shared, exchanged, transferred and implemented good practices and have made efforts to renew the regional policy agenda's. By means of interregional cooperation, Innovation 4 Welfare has built new coalitions of economic and social actors. In that way I4W became a European generator for new solutions promoting health and welfare. Although the six regions had different experiences they also had a lot in common or at least had the challenge to work on issues in the following application fields: • Services and products for special target groups (like elderly people); • Accessibility, mobility and smart homes; • Medical and home care systems; • Safety and security. Quadruple-helix cooperation roles: - Different for each of the sub-projects, although all various types of actors were involved in general (see website link for more information)

Attitude of main R&I actors from all 4 helixes towards using quadruple-helix model based R&I cooperation

This section is based on information gathered through personal, email and phone interviews with the ecosystem actors including the Ministry of Industry and Trade. The information below is presented as various ideas and thoughts shared in its original format and no compilation per group o attachment to specific actor has been done.

Attitude of actors from the citizens / users helix (formal + informal health	- as citizens / user helix, they want to be part of innovative projects / initiatives in area of home care and help shape finding solutions to needs of people working with and in general

care providers, elderly care recipients) towards using quadruple-helix R&I cooperation	- if public and user organizations are not engaged there is a risk that something will be developed that nobody wants, the same situation goes with solutions developed only based on needs of one organization as the solution is hardly transferable then - when including town or region, there needs to be political stability as it happens that already agreed cooperative projects are cancelled, towns and regions battel sometimes - activities of Ministry of employment and social affairs (MPSV) and Ministry of Health (MZ) are not synchronized and linked and innovation tend to be considered as forbidden activity sometimes - support shared care including institutions, family, non-profits, etc.
Attitude of actors from the business helix (businesses + business supporting actors) towards using quadruple-helix R&I cooperation	- There is sense in using quadruple-helix cooperation as sometimes even businesses do not know complete knowledge of needs, therefore it is important to know what users need, this is seen as natural need and something logical, but not always used - quadruple-helix is probably not the best for all application everywhere but for homecare it is very useful - it is more effective to cooperate with end users and those who know, especially with applied research, public institutions bring bureaucracy and it brings more work
Attitude of actors from the research helix towards using quadruple-helix R&I cooperation	- as solutions are for users, research and innovations without final users do not make sense, quadruple-helix is natural - hospitals do not have capacities and channels to whom to give responsibility to work with patients, patient organizations do - if creators of projects / initiatives prepare and write it so, the place to include quadruple-helix cooperation is there - preference to involve user helix such as hospitals, universities and patients - sometimes possible to include also municipalities, especially with smart cities projects but municipalities are not used to this - there is always the problem who will finance - quadruple-helix is good approach but not usual nowadays - quadruple helix is most effective scientific method with no negative effects like sometimes something developed and not used, mainly with actors to implement and finance – regions, region-university-business-users, the more stakeholders the more know - today things are complex, quadruple-helix cooperation should be a standard existence in cooperation in regions
Attitude of actors from the public institutions helix (excluding SF owner) – health insurance companies, health care and social care regulator, etc.) towards using quadruple-helix R&I cooperation	- quadruple-helix is like a trojan house to start the proces, innovation process starts when institutions cooperate - it is still necessary to create the mindset in public organizations, and change the paradigm - towns and regions do not know so much how to discuss and support innovations with private sector yet
Attitude of the Operational Programme owner towards using quadruple-helix R&I cooperation	- majority of intervention programmes in OP EIC are triple-helix based currently and this approach is based also in mindset of key MPO people - quadruple-helix is currently involved inside of Cooperation intervention program (technologic platforms, clusters) and very frequently public actors (towns, regions) are owners and operators of Innovation Infrastructure programme (science-technological parks and business incubators) - associations via cluster are involved in projects of collective research and partly in Infrastructure services too - when MPO supports innovations and research, towns or regions

	however do not provide products or services, they can only be a user or implementer or the one who orders that - in OP EIC there was intervention programme for public procurement, currently left out, as there were only 2 projects produced and they were cancelled as public sector was not able to come up with good projects, most of them was just IT software, MPO doesn't want that and there is nobody who would require that from them - there are relatively few organizations who cooperate between each other now, those who have some influence are not heard and have no association together, those who have some technology platform already receive some finances, those with experience and knowledge keep them for their own - hospitals could be partners, but for testing of research results - hospitals or public institutions cannot get direct money, they can be only co-beneficiary (in those intervention programmes where external service purchase in possible - towns and regions can be beneficiaries only in Infrastructure services and they are primary beneficiaries there, other than that only through presence in associations (e.g Pilsen has several incubators and science-technological parks, has business innovation centre). Town can be part of the project as testing organization for the project in real life (Innovation or Application programme) – as external service delivery) – but it is not so frequent, as external service of research and development, if they have associated organization that does that is easier – such as BIC Plzen or JIC Brno – these are associations and they have better chances to succeed.

7. Brainstorming on potential improvements of the Operational Programme and other ideas or on possible improvements in regional innovation ecosystem

The "Potential improvements of the Operational Programme and other possible improvements in regional innovation ecosystem" section provides brainstormed list of suggestions on possible improvements for support of R&I in Home Care via quadruple-helix cooperation in 2 levels: via the Operational Programme management, strategic focus and operations, and via any other possible improvements in the regional Innovation ecosystem. The list is based on brainstorming, is not exhaustive and has been not compiled to represent view of all/majority and easiness and relevancy for implementation. The information below comes from interviews with both the Ministry of Industry and Trade and also with innovation ecosystem actors and does not represent a view of the author. The information within this part (in addition to further information and outputs) will be used as inputs for further discussions and outputs leading to an Action Plan development.

Possible improvements in the Operational Programme regarding its support for quadruple-helix based R&I in Home Care as based on brainstorming discussions within HoCare Regional Multi-stakeholder group (without assessing implementation possibility – will be part	- Specific new call with home care focus and market research activity support, where associations and clusters for example could join in - Finances to be prepaid compared to ex-post - Details of specific calls to be consulted with somebody from associations, their inclusion into Monitoring or platform bodies - % of own contribution to be lower, big companies get currently only 25 percent of funding - For SMEs the contribution is low and too much administration, for big companies for good projects it doesn't make sense as it will give them more risks, if there will be a call to join maximum support to more actors in 1 call, administrated together, processed together….when e.g. monitoring of older people via ICT, supported both the implementer of technology but also supported the target group access provider and

of Action plan discussions)	implementation, e.g. operators don't want to offer their solutions in services in this area as they leave it to SMEs, - organizations sometimes do not fit into CZ NACE segments (e.g. only Application or Innovation), perhaps do some adjustments in CZ NACE in supported categories in some call or support programme or in general - some intervention programmes could be inserted with quadruple-helix approach basis or with social and health impact – this is under Monitoring Committee decisions – somebody needs to raise the topic and be heard and must be voted for, there is a negative feeling towards specific sector calls - list of potential beneficiaries could be enhanced by for example adding a municipality in more support programmes – this has to be pushed and promoted to Monitoring Committee as an initiative that will not extract lot money from other project types. - raising awareness amongst stakeholders about financing possibilities - evaluation process could be enhanced in favor of more cooperation of multiple types of organizations or projects in home care segment
Other ideas + possible improvements in the regional innovation ecosystem regarding support for quadruple-helix based R&I in Home Care as based on brainstorming discussions within HoCare Regional Multi-stakeholder group (without assessing implementation possibility – will be part of Action plan discussions)	- get involved in Monitoring Committee - Innovative ICT devices are support tools that should be financed in the same way as compensation tools - Some more projects could be done via clusters calls but clusters would need more support in project preparation as it takes times and needs expertise - common stakeholders´ voice and needs towards needs for change in OP PIK needs to be heard to OP PIK and its Monitoring Committee - Innovations should not focus only on acute services but also on permanent contact and services - With some amount of clients/users for each innovation, the system is self-financing only from social payments and this should be the aim of innovations - Telemedicine was said not have a potential in CZ so all activities in here are financed from EU and not from the state - Education on the fact that something innovative is available and how to work with that is important (e.g. somebody buys innovative solutions but nobody wants to use it) - At the other side of the innovative device needs to be a person who will do something – who will it be? Who will pay him/her, how will he/she be available? - Doctors are not motivated to check some innovative device if some health problems with person, they will send him/her to hospital as we have new and good hospitals – innovative devices could be viewed well perhaps only by specialist doctors as it is needed (general practitioners will not need it) - Innovations should focus on groups, communities - Innovations shouldn't forget about the human factor - Innovations are not only about technologies but also about approaches – sometimes changes are started in pilot and spread later on when it works - There is a lack of support from policy actors - Providers of health/social care do not know until when they will survive (live from year to year) - Health and social services and departments are battling with each other / there is a clash of these two important parts – integrated services and approach needs to start - There are finances in the system, there are not enough employees - People with problems do not have anybody to help them so they finish at medical centres - People need to be able to afford innovative solutions to finish their lives independently at home

	- Great amount of opportunity lies with municipalities and their community planning, they can do more than the state from their side - Digital solutions will not work if there will be no system for them, there will be no people working with them, will not communicate - Improving digital education plays a major role in quality of life - Missing information at managing people, they are not using technologies – their employees do not know what that is, what it does and cant invoice these - In CZ, we have great research, but bad environment for care - Czech government approved Czech strategy for e-health recently - Communication with hospitals is key - Isolation of research and innovation units and motivated organizations is quite high, each organization works with own users and when needs are met then no more motivations for further innovation - Financing for user organization via OP when they are surviving from day to day and with not prefinanced investments is hardly realizable for them to join projects - For innovations to be sustainable, they need to be more extensively used by larger amount of people - Organizations in home care must be better heard via associations, clusters and their activities so they have advantage of knowledge of their needs at MPO and others. - Creation of support from MPSV in terms of specific calls for example - Cooperation between MPSV and MZ is needed, including MPO - Get out of conservative approach of all organizations in the ecosystem - Get better professional, institutional, financial motivation - Improve public awareness and support of innovative solutions in healthcare in general and in home care especially - Create Czech-slovak innovation platform to share successes, information and make Czech-slovak conference and channel + who will lead - Problem of sustainability of innovations when patients don't want to pay later on - Organizations in home care have to battle for new calls - hospitals have everything in house, we need to work with smaller towns villages to keep them at home as we don't have enough places in hospitals - towns and regions should be present in associations or have their own innovation or science-technological parks to be able to be direct beneficiaries indirectly in more support programmes (e.g Pilsen has several incubators and science-technological parks, has business innovation centre). - Regions can push segment preference for home care within their ITI strategies and prefer them in specific ITI reserved funds in opened calls of OP PIK - Clinical studies are not part of R&I but require long certification for medical devices

8. Other information

In this section, any other relevant information for reading this report is added.

Any other relevant information for regional situation	- Legislation information missing in this report - Interlink with and research & innovation programmes offered by the Ministry of Health (MZ) and the Ministry of Social Affairs (MPSV) is missing

9. Information gathered by …

The information within this template has been gathered for the purpose of regional situation report within the HoCare project (Interreg Europe Programme) by the following organization in cooperation with members of the regional HoCare multi-stakeholders group (including the Ministry of Industry and Trade of the Czech Republic) in the Czech Republic.

Region	Czech Republic
Organization name(s) in local language	DEX Innovation Centre
Name of the contact person(s)	Michal Stefan
Contact email(s)	michal.stefan@dex-ic.com

Author and partner of the HoCare project

DEX Innovation Centre, www.dex-ic.com