*Sharing solutions for
better regional policies*

# HoCare
## Interreg Europe

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

# Romania - REGIONAL REPORT

Elaborated in the framework of the additional activities' implementation (IE 5th Call)

**Date: 31st March 2022**

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# A) BACKGROUND

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

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

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

The extension of HoCare project was requested in the framework of IE's 5th Call for proposals to map the response of regional/national policies to the impact of COVID-19 crisis in the subject of the project (delivery of Innovative solutions for Home Care by strengthening quadruple-helix cooperation in regional innovation chains). As a result, the objectives set for this new initiative are:
- to further exchange experiences on the way the crisis impacts the issue addressed and on possible measures to face and recover from the crisis,
- to further improve regional development policies for better facing and faster recovering from this unprecedented situation.

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

## B) OBJECTIVE

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

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

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

## D) TIPS & RECOMMENDATIONS: HOW TO PROPERLY FILL IN THE REPORT

✓ This report is a follow-up on the Regional Situation Analysis Report prepared by your organization during the implementation of the initial HoCare project (accessible at: https://www.interregeurope.eu/hocare/library/ in the folder entitled: "SEMESTER 2: WP3")
✓ Provide information to all questions (in the exceptional case of a not relevant question, or no available information, use "N/A")
✓ Be as specific as possible
✓ Provide as much quantitative information as possible
✓ Use references where required
✓ Be sure that the information you use is accurate and qualitative
✓ Respect the maximum limit for characters allowed per section
✓ The language of this report is English. Specific parts might be required to be filled-in in your national/regional language.

# 1) POLICY INSTRUMENT[1]

Please provide the information required for the Policy Instrument you identified, selected and used in the new

HoCare Application Form in the framework of the IE 5th Call for proposals:

| | |
|---|---|
| **Name of the Policy Instrument addressed** (in English) | Competitiveness Operational Programme 2014-2023; COP 2014 – 2023 (Updating of the COP 2014-2020, according to the decision of the CM POC no. 48 / 20-09-2021) |
| **Name of the Policy Instrument addressed** (in regional language) | Programul Operaţional Competitivitate 2014-2023, POC 2014-2023) (Modificare POC 2014-2020, conform deciziei CM POC nr. 48 / 20-09-2021) http://www.fonduri-ue.ro/poc-2014 |
| **Name of the relevant thematic Priority Axis** (supporting R&I activities) | Priority Axis 1: Research, technological development and innovation sustaining the economic competitiveness and business development (Cercetare, dezvoltare tehnologică şi inovare în sprijinul competitivităţii economice şi dezvoltării afacerilor)<br><br>Priority Axis 2: Information and communication technology (ICT) for a competitive digital economy (Tehnologia informaţiei şi comunicaţiilor (TIC) pentru o economie digitală competitivă)<br><br>Priority Axis 4: Supporting the mitigation of the effects of the crisis in the context of the COVID-19 pandemic and its social consequences and preparing for a green, digital and resilient economic recovery (Sprijinirea ameliorării efectelor provocate de criză în contextul pandemiei de COVID-19 şi al consecinţelor sale sociale şi pregătirea unei redresări verzi, digitale şi reziliente a economiei) |
| **Specific objectives of the given Priority Axis** | Priority Axis 1:<br>SO 1.1 Increasing the capacity of RDI in the fields of smart specialization and in health (Creşterea capacităţii de CDI în domeniile de specializare inteligentă şi în sănătate)<br>OS1.2 - Increasing the Romanian participation in research at EU level<br><br>Priority Axis 2:<br>SO 2.c Strengthening ICT applications for e-government, e-learning, e-inclusion, e-culture and e-health (Consolidarea aplicaţiilor TIC pentru e-guvernare, e-învăţare, e-incluziune, e-cultură şi e-sănătate)<br><br>Priority Axis 4:<br>(ERDF) Overcoming the COVID-19 pandemic emergency and preparing for an environmentally sustainable, digital and sustainable economic recovery (FEDER) Depăşirea situaţiei de urgenţă, prevăzută de pandemia de COVID-19 şi pregătirea pentru o redresare economică durabilă din punct de vedere al mediului, digital şi durabil) |

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

| | |
|---|---|
| **Geographical Coverage** (National, Regional, if other please explain) | National with different budget limits for developed and less developed regions within the country |
| **Managing Authority** | Ministry of Investments and European Projects |
| | |
| **Is this the same Policy Instrument (PI) your organization addressed during the implementation of the initial HoCare project?** (Yes / No) | Yes |
| **If 'Yes', please explain why you have chosen to still address the same PI?** (max. 1000 characters) | Priority Axis 1: The new form of COP introduces smart specializations, (Bio-economy, ITC, Space and Security, Energy, Environment, Eco-Nanotechnologies) and Health as priority areas of national interest and main development need in Romania.<br><br>Priority Axis 2, Specific Objective OS 2.4 "Increasing the use of the Internet". Projects with national strategic impact will be implemented proposing more effective ICT solutions to be applied at systemic, horizontal and nationally levels. Thus, active and healthy aging and e-health services and applications (including e-assistance and self-help at home) will be included.<br><br>Modifications of the COP 2014-2020, according to the decision of the CM POC no. 48 / 20-09-2021, lead to creation of Priority Axis 4 to support mitigating the effects of the crisis in the context of the COVID-19 pandemic and its social consequences. |
| **If 'No', please explain why you have chosen to change your PI?** (max. 1000 characters) | |

## 2) OTHER RELEVANT POLICY INSTRUMENTS

Please provide information about any other relevant existing Policy Instrument(s) in your region (that support

Home Care R&I and/or quadruple-helix cooperation)

| | |
|---|---|
| **Name of the Policy Instrument addressed** (in English) | Smart Growth, Digitization and Financial Instruments Operational Program 2021-2027 (POCIDIF) |
| **Name of the Policy Instrument addressed** (in regional language) | Programul Operațional Creștere Inteligentă, Digitalizare și Instrumente Financiare 2021-2027 (POCIDIF) |
| **Name of the relevant thematic Priority Axis** (supporting R&I activities) | Priority Axis I: Research, Development and Innovation (RDI) / Smart Specialization (IS). |
| **Specific objectives of the given Priority Axis** | SO 6: Development of RDI strategic projects that promotes the development of solutions for health, education, research, communication, etc. through proactive measures and investments and by consolidating the |

| | results in the field of essential generic technologies, at European and international levels. |
|---|---|
| **Geographical Coverage** (National, Regional, if other please explain) | National |
| **Managing Authority** | Ministry of Research, Innovation and Digitization |
| **Please explain why this Policy Instrument is relevant to Home Care R&I and/or quadruple-helix cooperation?** (max. 1500 characters) | POCIDIF proposes measures in the fields of research, development and innovation / smart specialization and in the field of digitization with application in healthcare. This PI involves collaboration between research organizations, business and governmental sectors as well as associations and foundations. |

\*Please copy – paste the table above in case you would like to report any additional PIs

| | |
|---|---|
| **Name of the Policy Instrument addressed** (in English) | Health Operational Program 2021-2027 (HOP) |
| **Name of the Policy Instrument addressed** (in regional language) | Programul Operațional Sănătate 2021-2027 (POS) |
| **Name of the relevant thematic Priority Axis** (supporting R&I activities) | Priority Axis 5. Innovative approaches in medical research<br><br>Priority Axis 6: Computerization of the medical system |
| **Specific objectives of the given Priority Axis** | Priority Axis 5:<br>Specific Objective ERDF (i) Development of research and innovation capacities and adoption of advanced technologies.<br>Operation: Adoption of remote medical investigation and monitoring technologies including telemedicine and other e-health support systems.<br><br>Priority Axis 6:<br>Specific Objective ERDF (ii) Benefiting from the benefits of digitization for the benefit of citizens, companies and governments.<br>Operations: Large-scale implementation of e-health, telemedicine and personalized care solutions that facilitate remote medical consultations, remote monitoring of patients' health and other personalized healthcare solutions through digital approaches. |
| **Geographical Coverage** (National, Regional, if other please explain) | National |
| **Managing Authority** | Ministry of European Investments and Projects |
| **Please explain why this Policy Instrument is relevant to Home Care R&I and/or quadruple-helix cooperation?** (max. 1500 characters) | Some of the priorities for Home Care R&I of this PI are:<br>– Rehabilitation, palliation and long-term care services adapted to the demographic phenomenon of population aging, the impact of disability and the epidemiological profile of morbidities<br>– Digitization of the medical system;<br>– Measures to support research, computerization in health and the use of modern methods of investigation, intervention, treatment. |

| Name of the Policy Instrument addressed (in English) | National Strategy for Research, Innovation and Smart Specialization (2021-2027) |
|---|---|
| Name of the Policy Instrument addressed (in regional language) | Strategia Națională de Cercetare, Inovare și Specializare Inteligentă SNCISI (2021-2027) |
| Name of the relevant thematic Priority Axis (supporting R&I activities) | OG1. Development of research, development and innovation |
| Specific objectives of the given Priority Axis | O.1.5. Connecting research and innovation with societal challenges Healthcare |
| Geographical Coverage (National, Regional, if other please explain) | National |
| Managing Authority | Executive Agency for Higher Education, Research, Development and Innovation Funding (UEFISCDI) |
| Please explain why this Policy Instrument is relevant to Home Care R&I and/or quadruple-helix cooperation? (max. 1500 characters) | Strategy impact in Home Care R&I:<br><br>**1. Managing diseases and reducing their burden**<br>– Reducing the burden of cardiovascular and cerebrovascular diseases and their long-term implications;<br>– Prevention, early detection, treatment and maintenance of quality of life in chronic non-communicable diseases, including;<br>– Mental health promotion, prevention and reduction the impact of neurodegenerative pathology accompanied by cognitive decline;<br>– Reducing the burden of disease for the chronically ill and those under long-term treatment;<br>– Management of large volumes of diversified clinical and biological data, quality;<br>– Interoperability and standardization in the use of new technologies / methodologies.<br><br>**2. Access to innovative, sustainable and high-quality healthcare**<br>– Increasing the quality of medical services through personalized medicine;<br>– Medical system focused on patient;<br>– Digital transformation of health services and medical care;<br>– Ensuring access to health services for people vulnerable and those with special needs;<br><br>**3. New tools, technologies and digital solutions for a healthy society**<br>– New preventive health monitoring technologies;<br>– Development of telemedicine;<br>– Use of artificial intelligence in medicine;<br>– Personalized medicine;<br>– Efficient use of medical data in the Romanian medical system;<br>– Assistive technologies for people with vulnerabilities or special requirements. |

| | |
|---|---|
| **Name of the Policy Instrument addressed** (in English) | "Emergency ordinance for the amendment and completion of Law no. 95/2006 on health care reform (prophylactic and curative healthcare through the use of telemedicine services)"- published in the Official Gazette, no. 1108 of November 19, 2020 |
| **Name of the Policy Instrument addressed** (in regional language) | "Ordonanță de urgență pentru modificarea și completarea Legii nr. 95/ 2006 privind reforma în domeniul sănătății (asistență medicală profilactică și curativă prin utilizarea serviciilor de telemedicină)" - publicată în Monitorul Oficial, nr. 1108 din     19 noiembrie 2020 |
| **Name of the relevant thematic Priority Axis** (supporting R&I activities) | Telemedicine |
| **Specific objectives of the given Priority Axis** | Supplementing and diversifying medical services to meet the real healthcare needs of the population in communities, but also the efficient management of human and financial resources in the field |
| **Geographical Coverage** (National, Regional, if other please explain) | National |
| **Managing Authority** | Ministry of Research, Innovation and Digitization |
| **Please explain why this Policy Instrument is relevant to Home Care R&I and/or quadruple-helix cooperation?** (max. 1500 characters) | For Home Care R&I, Telecare and Telemonitoring have important and necessary benefits such as:<br>– Allow patients to have faster access to medical care;<br>– Optimize resource utilization;<br>– Increase productivity<br>that leads, in the end, both to the improvement of the medical assistance and to an increased efficiency of the Romanian healthcare system.<br><br>Telemedicine can also have an important result in limiting the spread of SARS-CoV-2 pandemic by restricting direct and interpersonal interactions and movements without limiting patients' access to necessary healthcare. |

*Please copy – paste the table above in case you would like to report any additional PIs

## 3) THE HOME CARE RESEARCH & INNOVATION ECOSYSTEM

**Briefly describe the ecosystem in Home Care R&I in your region including the most significant main actors, infrastructure, resources, available public / private supporting services, networks, platforms and events)** (max. 5000 characters)

In defining the Romanian ecosystem in Home Care R&I, one of the biggest challenges is given by the fact that Romania's population is on the rise aging. Another major challenge for this sector is given by technological development and research itself to find innovative solutions and to improve the act medical itself. Research, development and innovation within in this sector are much more expensive than in other business sectors because they must comply in force with certain laws, rules or regulations, both national and international levels.

The Romanian ecosystem in Home Care R&I is functional in a legal framework that takes into account the Romanian specificities, but also the concordance with the similar one at European level.  Among the most important current political instruments can be mentioned:

- **Competitiveness Operational Programme (COP) 2014-2023**. It was updated on Sept 2021. Through its interventions, the Program contributes to increasing competitiveness and economic development by improving access, security and use of ICT and by strengthening RDI. At the same time, POC indirectly contributes to reforming areas such as education, health and culture, but also to reducing poverty. COP supports RDI in the field of HEALTH, a sector of national interest, which is a priority of public relevance for Romania and which is found in the convergence between areas of smart specialization, such research having a large public impact in Romania.

- **Smart Growth, Digitization and Financial Instruments Operational Program 2021-2027** (POCIDIF) proposes measures in the fields of RDI / smart specialization and in the field of digitalization, financed either by grants or by financial instruments in compliance with State aid rules, as appropriate, in order to meet the challenges identified at national level.

- **Health Operational Program 2021-2027 (HOP)** – through Priority Axis 5 Innovative approaches in medical research targets the medical research, innovation and digitalization of the medical sector by implementing SMART solutions in the medical field. It is foreseen a wide implementation of eHealth, telemedicine and personalized care solutions - solutions that facilitate remote medical consultations, remote monitoring of patients' health and other personalized healthcare solutions through digital solutions. Funding of research and innovation projects are to be implemented by comprehensive partnerships consisting of research entities, universities, medical institutions and private companies (SMEs and large companies)

- **National Strategy for Research, Innovation and Smart Specialization (2021-2027)** presents a vision for 2030 at the national, a vision that is associated with a series of measurable targets, to which all RDI and smart specialization programs, implemented at national or regional level, including those in international collaboration, contribute. The Strategic Research Agenda is part of it and its focus is on societal impact, health being one of the 6 thematic areas included.

Examples of significant main political actors:
- **National Health Insurance House**- is a public institution, autonomous, of national interest, with legal personality, whose main object of activity is to ensure the unitary and coordinated operation of the social health insurance system in Romania.

- **Ministry of Health** - it coordinates and ensures the legal framework for the health system

- **Directorate of Public Health -** is a public institution with legal personality subordinated to the Ministry of Health. It performs its activity in order to carry out the national public health policies and programs, of the preventive medicine activity and of the state sanitary inspection and of the monitoring of the health condition.

- **Ministry of Labour and Social Justice** – through *Social Policies Services Directorate and General Directorates of Social Assistance and Child Protection*, it provides support to vulnerable people

- **Romanian Red Cross** - provides complete home care medical services for medical treatments and home care needs.

- **Local authorities** - are important actors in the health of the community they serve. Their specific role in health is mentioned in several important regulations.

Examples of significant main research actors:
- eHealth Innovation Centre – UMFCD
- University of Medicine and Pharmacy "Carol Davila" of Bucharest
- National Institute of Gerontology and Geriatrics "Ana Aslan"
- Politehnica University of Bucharest
- National Institute for Research & Development in Informatics - ICI Bucharest

Examples of <u>significant main business actors</u>:
- Software Imagination & Vision SRL
- BEIA CONSULT INTERNATIONAL SRL

Examples of <u>significant main citizen/user actors</u>:
- Center for Innovation in Medicine InoMed
- Association of Institution Directors for the Elderly
- Ana Aslan International Foundation
- Caritas Confederation Romania

In the last 2 years, important investments have been made in supporting research and developing innovative solutions for home care. An example is the "*Institutional capacity building for the coordinated national development of palliative care and home care*" project that aims at creating and introducing a unitary and fluent mechanism for planning, developing, evaluating and monitoring a national palliative care and home care system in the sense of medical care and personal care services. The allocated budget is 5.249.800 EUR.

The actors involved in the home care R&I sector organize regularly thematic events for the dissemination of notable results in the field, both for the scientific and professional community and for the large public.

**What are the main changes/improvements in relation to what was described in the Regional Situation Analysis prepared in the framework of the initial HoCare project's implementation?** (max. 3000 characters)

The main identified changes/improvements are:
- The pandemic has highlighted the challenges facing the Romania health systems of collecting accurate data in real time, modelling scenarios, and ultimately making decisions about how to quickly adapt the health care services. The restricted access to health care services in medical units has accelerated the telemedicine use and implementation.

- A larger collaboration among actors from research and business sector was established.

- Many entities that were generators for home care solutions have quickly adapted them to the new conditions imposed by the pandemic; moreover, some of the solutions were offered for free to vulnerable people for different period of times.

- A great number of start-ups have appeared and quickly developed solutions adapted to the specificities of the Romanian society and social & health system.

- Healthcare providers have had to rush to find new sources for medical and human resources, with some providers establishing relationships with non-traditional providers.

- The supply chain of medical services, medicines, consumables, technology and innovation is expected to become more agile and resilient to future crises.

- Large insurers and health care providers are working to better strengthen the home care sector which was, at the beginning of COVID-19 pandemic, very fragmented, with a relatively immature technology, marked by a lack of good practice widely adopted. This could lead to unnecessary costs and make it more difficult to move to more complex home care.

- The accelerated adoption of normative and emergency ordinances to support the provision of critical care services has allowed a dynamic adaptation to the rapid changes that have taken place in almost all components of the ecosystem.

**Which of these changes/improvements can be identified as an impact of the COVID-19 crisis or as measures the region applied to face and recover from the crisis?** (max. 3000 characters)

- The Covid-19 pandemic has acted as a turning point for the acceleration of telemedicine integration in the medical services area. The fear of human interaction, and especially hospital-patient interaction, has

forced the Romanian government, medical providers, and patients to choose technology as a bridge to disease management and prevention.

- Due to the increasing demand, many businesses and research actors have strengthened their collaboration in order to create/provide solutions for home diagnostics and remote monitoring tools. It was clearly noticed that they were launched more aggressively during the pandemic.

- The investment in R&I in home care was stimulated by:

  o Opening calls for national country research projects;

  o Creating programs dedicated to Romanian researchers or in international partnership;

  o Optimization of medical research projects at the level of the Romanian National Agency of Medicines and Medical Devices;

  o Reorganization of medical services in primary, out-patient and hospital care, so that medical services could be provided simultaneously for both acute and chronic pathologies, as well as to be able to respond optimally in epidemic / pandemic conditions (to provide services Covid-19 and non-Covid-19 patients)

The increased demand for improved, patient-centered home care solution will lead the public and private healthcare providers and authorities to rethink the model of care and decide which services they will provide physically and which one virtually.

Developing comprehensive home health care services can help reduce costs in this area.

There is also an opportunity for new models of providing personalized care solutions to be implemented in order to shift from the reactive approach to a proactive and preventative one.

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

Please provide information about the main formal and informal providers, businesses & business supporting actors, research and public institutions acting in the sector of home health care in your region.

### a) Citizens / users helix

| Main formal + informal providers of healthcare, elderly care recipients / associations in Home Care R&I (Please list at least 6) | | |
|---|---|---|
| **Name (+ in local language in brackets)** | **Website** | **Description of objectives and main activities** (max. 500 characters per line) |
| ROHEALTH – The Health and Bioeconomy Cluster (ROHEALTH - Clusterul pentru Sănătate și Bioeconomie) | https://rohealth.ro/ | Vision<br>Increasing economic competitiveness in health and bioeconomy in Romania through RDI and promoting entrepreneurship<br><br>Mission |

| | | Development of a national and international benchmark ecosystem for RDI in health and bioeconomy |
|---|---|---|
| | | Challenges |
| | | <ul><li>Development of relations and qualitative networks in the field at national and international levels</li><li>Active involvement of public, academic and private stakeholders in establishing partnerships for value chain development</li><li>Increasing the impact of the field in regional, territorial developments and long-term economic transformation</li></ul> |
| Dăruiește Aripi Association (Asociația Dăruiește Aripi) | https://www.daruiestearipi.ro/ | Dăruiește Aripi Association is a non-profit organization, founded to provide access to high quality medical care and social services for children and their families in Romania, particularly for young patients afflicted with cancer and blood diseases. |
| | | Vision<br>A society that protects and nurtures the children's potential so that each child has the chance to flourish. |
| | | Mission<br>To have a meaningful contribution to those critical changes in health-care and education as a significant force for good in the lives of children and their families. |
| Center for Innovation in Medicine InoMed (Centrul pentru Inovație în Medicină, InoMed) | https://ino-med.ro/ | InoMed Center is a non-governmental organization focused on the innovation in healthcare for shortening the time between the emergence of innovations in medical sector and their application for patients benefit. |
| | | It develops programs to educate, inform and engage all audiences about innovation in medicine. |
| | | It serves as an independent platform for informed dialogue between all stakeholders in the field of omics |

| | | medicine, personalized (precision) medicine, digital health, data oncology, immune-oncology, cancer research, biotechnology, systems biology and other hot scientific topics. |
|---|---|---|
| Association of Institution Directors for the Elderly (Asociația Directorilor a Instituțiilor pentru Vârstnici, A.D.I.V) | https://www.adivromania.ro/ | The association aims to bring together directors and leaders of long-term care centres for the elderly in order to strengthen the constructive exchange of experience and good practices in the field of care management and elderly care both at home and in residential care, in the private and public sectors, in order to improve the quality of life of the beneficiaries.<br>The primary interest of the association is the development of a representative professional community, actively involved in the field of quality of life of beneficiaries and the improvement of quality standards of care. |
| Residential care home for the elderly of Bucharest "Acad. Nicolae Cajal" (Căminul pentru Persoane Vârstnice al Municipiului București - Academician Nicolae Cajal) | https://www.caminvarstnicibucuresti.ro/ | Residential care home for the elderly of Bucharest "Acad. Nicolae Cajal" is an institution that operates under the auspices of the Social Assistance Department of Bucharest from 2012. |
| Bucharest Centre for Seniors (Centrul pentru seniori al Municipiului București) | https://www.cs-mb.ro/ | Main objectives<br>– Organizing and carrying out, on its own initiative or in partnership with other public institutions,<br>– Stimulating and maintaining the physical and intellectual capacities of the elderly, through programs and projects that attract the interest of this age group for participating in various forms of events aimed to revive their social life,<br>– Promoting the participation of older people in community life by respecting the principle of "active |

| | | aging" and providing conditions for leisure that respect the identity, integrity and dignity of older people. |
|---|---|---|
| Ana Aslan International Foundation (Fundația Ana Aslan Internațional) | https://anaaslanacademy.ro/ | The Foundation is a non-profit society that aims to promote culture, science and public assistance in favour of the elderly population<br><br>Main Objectives<br>Develops and supports the Ana Aslan prophylaxis and treatment method, the research activity, medical and social care, education, methodology, information and documentation, editorial appearances<br><br>Mission<br>– Integrate scientific progress into preventive and personalized medicine<br>– Offer the tools that transform the medicine of brain aging into the medicine of longevity. |
| Caritas Confederation Romania (10 association in 30 counties) Confederatia Caritas Romania (10 asociatii in 30 judete) | http://www.caritasromania.ro | Caritas Confederation Romania is involved in lobbying and influencing social policies both at national and European levels through Caritas Europe, the EU's strategic partner in social issues.<br><br>All Caritas organizations in Romania have partnerships with local authorities and provide services to the elderly, children from disadvantaged backgrounds, people with special needs, large families with low incomes.<br><br>The ten diocesan Caritas organizations members of the Caritas Romania Confederation offer social services and programs in almost all regions of the country. |

*Please add new lines in case you would like to report any additional actors

## b) Business helix

| Main businesses and business' supporting actors in Home Care R&I? (Please list at least 6) | | |
|---|---|---|
| Name (+ in local language in brackets) | Website | Description of innovative solutions provided in the field (max. 500 characters per line) |

| | | |
|---|---|---|
| SC TEMESED SRL | https://temesed.ro/ | The Romanian company LIAMED and the Bulgarian company Naicoms have laid the foundations of a multifunctional telemedicine platform with the main purpose of offering access to anyone, no matter where they are, to a medical consultation at the highest standards. <br> TEMESED is a complete telemedicine platform equipped with useful instruments: online consultation, online appointment booking, Patient Portal, Monitoring, Personal Patient File, telemedicine medical devices. |
| Software Imagination & Vision SRL (SIMAVI) | https://www.simavi.ro/ | In the field of health, SIMAVI develops, through its specialized department, eHealth complex solutions aimed at improving the quality of services for citizens and for the administration, by introducing IT tools on a national scale. <br><br> Some of the solutions are integrated in the Health Insurance Informatics Platform (PIAS), managed by the National Health Insurance House (CNAS). |
| BEIA CONSULT INTERNATIONAL SRL | http://www.beiaconsult.ro/index.html | Expertise in <br> – Cloud and embedded M2M (Machine 2 Machine) telemonitoring applications, data acquisition and processing, command and control, GPRS/CDMA on-line data transmission with TCP/IP embedded; <br> – Field Interface Unit – communications server; <br> – Client application (fleet management, data monitoring and command), human machine interface. <br><br> Activity domains <br> Sensors, actuators, data storage and processing, interfaces, communication technologies / tele-systems, learning & training. |
| re.flex | https://reflex.help/ | re.flex is the Romanian company that changes the way physiotherapy is done. It aims to expand the availability of physical therapy through their |

| | | solutions that include special sensors created for remote medical recovery of people who have suffered physical injuries. |
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| Connected Medical Devices SRL | https://connected-medical.com/ | One of the provided solutions, Human Link 1, is an integrated platform of services and devices dedicated to the care of the elderly and people affected by dementia, at home or in specialized institutions. |
| CardioMedive | https://cardiomedive.eu/ | CardioMedlive offers a software solution for remote monitoring and diagnosis of patients with cardiovascular and respiratory diseases.<br><br>The CardioMedive team won the "Medical Innovation of the Year" trophy at the Romanian Healthcare Awards 2021, December 10.<br><br>The device involves a new patent pending technology, both hardware and software, combined with a unique web-based platform reducing the physician-patient contact by offering access to the patient's medical history, real-time monitoring data, medical reports, alerts and predictions. |
| ExigoHealth | https://www.exigohealth.com/ | ExigoHealth's solutions aim to replace the traditional way of doing physical rehabilitation with interactive methods that motivate and guide patients.<br><br>It aims to help patients in medical recovery for muscle atrophy, paralysis or upper limb injuries through a custom 3D-printed exoskeleton, plans to offer the devices for rent at home. |
| The CARE HUB | https://thecarehub.ro/ | The Care Hub is the platform that connects families looking for trusted caregivers for their loved ones with older, experienced and rigorously verified people.<br><br>The "For Grandparents Alone" campaign started from the belief that each of us has an old man in his family, to whom he is grateful for the role he had in his life, and that he could pay thanks to the lonely old people in care services. |

*Please add new lines in case you would like to report any additional actors

## c) Research helix

| Main research actors in Home Care R&I? (Please list at least 6) | | |
|---|---|---|
| **Name (+ in local language in brackets)** | **Website** | **Description of relevant research activities** (max. 500 characters per line) |
| eHealth Innovation Centre - UMFCD (Centrul de Inovaţie în eHealth – UMFCD) | https://cieh.umfcd.ro/ | The Centre for Innovation and e-Health aims to implement strategies and policies for innovation and e-Health in order to develop UMFCD in the directions covered by the Organization and Functioning Regulation, in accordance with the vision, mission and policy of the University and in line with national, European and international dynamics. |
| University of Medicine and Pharmacy "Carol Davila" (Universitatea de Medicină şi Farmacie "Carol Davila") | https://umfcd.ro/ | Relevant research directions<br>– Studies on the efficiency of complex tele-rehabilitation systems applicable in the home recovery of various pathologies<br>– Rehabilitation care / nursing, medical-social, qualified, complex - in the clinic and at home - for adults and the elderly<br>– Improving the capacity to monitor and evaluate disability through chronic diseases. |
| National Institute of Gerontology and Geriatrics "Ana Aslan" (Institutul Naţional de Gerontologie şi Geriatrie "Ana Aslan") | https://ana-aslan.ro/ | Research directions<br>– Analyzing the medical-social problems of the elderly for developing appropriate assistance programs<br>– Studying the interrelation between bio-psycho-social conditions and active aging<br>– Assessing the health, nutritional status and food preferences of the elderly<br>– Study of lifestyle related to behavioral profile and socio-economic status in cardiovascular diseases in the elderly<br>– Evaluating mobility issues related to chronic pathology<br>– Raising awareness of the risks associated with mobility deficiencies and affecting the independence of elderly people |
| Politehnica University of | https://upb.ro/cercetare/ | Research directions<br>– Theoretical and practical skills: |

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| Bucharest (Universitatea Politehnica București) | | - in the field of *medical engineering*: through the training of skills for technical and computer assistance, for engineering research, innovation and design<br> - in the field of *medical equipment*, devices and materials with properties specific to medical applications, for software creation dedicated to medical applications;<br>– Service management;<br>– Social and health;<br>– ITC solutions;<br>– In partnership with the "Carol Davila" University of Medicine in Bucharest, students are offered the necessary medical training. |
| National Institute for Research & Development in Informatics - ICI Bucharest (Institutul Național de Cercetare - Dezvoltare în Informatică - ICI București) | https://www.ici.ro/en/research-structures/communications-applications-and-digital-systems/ | Research directions<br>– Development of e-technologies for prevention and healthcare for a digitized, personalized and collective medicine:<br>  o Services of personalized and proactive monitoring of the elderly and people with disabilities, based on emerging technologies like IoT, Big Data Analytics, Cloud Computing, Artificial Intelligence<br>  o Instruments for modelling and prediction of biomedical and public health data<br>– Telemedicine and mobile health services<br>– Experimental / telecare pilot platforms, integrated in the Smart City environment;<br>– Affective computing solutions. |

| Babes-Bolyai University (Universitatea Babeș-Bolyai) | https://publichealth.ro/admission/ | Faculty of Political, Administrative and Communication Sciences through Department of Public Health Aims is to improve the health and wellbeing of the people of Romania and the Central and Eastern Europe by interdisciplinary research, education and outreach. The research efforts focus on the implementation of projects for research-development-innovation, capacity building, and mobility in public health.

Health Workforce Research Hub Aims provide quality policy-oriented research on human resources for health in Romania and globally. |

*Please add new lines in case you would like to report any additional actors

### d) Public institutions / government helix

| Main public actors in Home Care R&I (Please list at least 6) | | |
|---|---|---|
| Name (+ in local language in brackets) | Website | Description of relevant activities (max. 500 characters per line) |
| National Health Insurance House (Casa de Asigurări de Sănătate) | http://www.casan.ro/# | The National Health Insurance House (CNAS) is a public institution, autonomous, of national interest, with legal personality, whose main object of activity is to ensure the unitary and coordinated operation of the social health insurance system in Romania.

There are representations for Bucharest and each county.

Manages home health care services provided on the basis of a recommendation for home health care, taking into account the health status of the insured |

| Bihor Public Health Directorate - DSP Bihor (Direcția de Sănătate Publică Bihor - DSP Bihor) | http://www.dspbihor.gov.ro/ | The Directorate of Public Health (DSP) is a public institution with legal personality subordinated to the Ministry of Health. It performs its activity in order to carry out the national public health policies and programs, of the preventive medicine activity and of the state sanitary inspection and of the monitoring of the health condition. At the level of each county (such as Bihor), DSP identifies and controls the implementation of specific medical and social counselling programs, home care services for vulnerable people. |
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| Managing Authority for the Competitiveness Operational Program (Autoritatea de Management pentru Programul Operațional Competitivitate) | https://mfe.gov.ro/programe/autoritati-de-management/am-poc/ | The Competitiveness Operational Program (COP) supports investments that address the needs and challenges of low levels of economic competitiveness, RDI and ICT. These horizontal interventions in the economy and society generate growth and sustainability. The combination RDI and ICT in the same operational program is strategically justified by the multiplier role of these areas and their contribution to the achievement of smart specialization objectives |

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| | | and the promotion of new growth opportunities. |
| Ministry of Health (Ministerul Sănătății) | https://www.ms.ro/ | In the context of Home Care, it coordinates and ensures the legal framework for their organization and functioning as well as the authorization of the legal and natural persons that provide Home Care services. |
| Ministry of Labour and Social Justice (MLSJ) - Social Policies Services Directorate (SPSD) (Ministerul Muncii și Protecției Sociale- Direcția Politici Servicii Sociale) | https://servicii-sociale.gov.ro/ro/despre-noi | Social Policies Services Directorate<br>– Ensures the coordination of Government 's social assistance policies' implementation, respectively the social services regulations and financing<br>– Cooperates with national and international institutions and bodies in order to increase the social services' quality, in complementarity social benefits, but also with other services of general interest.<br><br>In the case of social services for Home Care for the elderly, social service providers are accredited by the Ministry of Health and then the established social services are licensed by the MLSJ, SPSD. |
| Ministry of Labour and Social Protection | http://anpd.gov.ro/web/informatii-utile/directiile-generale-de-asistenta-sociala-si-protectia-copilului/ | Functioning as public institutions of local interest, with legal |

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| - General Directorates of Social Assistance and Child Protection (Ministerul Muncii și Protecției Sociale-Direcţiile Generale de Asistenţă Socială şi Protecţia Copilului) | | personality, subordinated to the Local Councils at county and sector level in Bucharest.<br><br>Main goals<br>– Provide support to vulnerable people in order to prevent and overcome situations of difficulty, vulnerability or dependence<br>– Preserve personal autonomy<br>– Prevent marginalization and social exclusion<br>– Promote social inclusion<br>– Increase the quality of life. |
| Romanian Red Cross (Crucea Roșie Română) | https://crucearosie.ro/servicii/serviciul-medical-de-ingrijire-la-domiciliu/ | The Romanian Red Cross provides complete home care medical services for medical treatments and home care needs.<br><br>Purpose<br>– To provide professional health care at the patient's home, according to a care plan, tailored to each patient.<br>– To provide information and assistance to the family, in order to ensure the best care, in the best conditions. |
| Government of Romania (Guvernul României) | https://legislatie.just.ro/Public/DetaliiDocument/243848 | It elaborated the FRAMEWORK CONTRACT (issued on June, 26 2021) governing the conditions for the provision of healthcare, |

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| | | medicines and medical devices within the social health insurance system for 2021-2022, including home care field |
| Ministry of Development, Public Works and Administration (Ministerul Dezvoltării, Lucrărilor Publice și Administrației) | https://www.mdlpa.ro/ | Coordinates programs such as Interreg Europe, which has "a more social Europe with equal access to health care" as one of its Policy. Objectives.<br><br>In this context, projects aimed at Home Care are also being taken into consideration |
| Executive Unit for Funding Higher Education, Research, Development and Innovation (UEFISCDI - Unitatea Executivă pentru Finanțarea Învățământului Superior, a Cercetării, Dezvoltării și Inovării) | https://uefiscdi.gov.ro/programul-active-and-assisted-living-aal | Objectives of AAL "Active and Assisted Living" program<br>– Creating better living conditions for older people and strengthening industrial opportunities in Europe through the use of ICT<br>– Creating a critical mass of research, development and innovation at European level in the field of AAL<br>– Ensuring a coherent framework for cooperation at European level, compatible with national and regional diversity<br>– Synergy with other European programs and initiatives. |

*Please add new lines in case you would like to report any additional actors

**Briefly describe the main changes to the main actors' synthesis in relation to what was described in the Regional Situation Analysis prepared in the framework of the initial HoCare project's implementation and their relevance to the COVID-19 crisis impact** (max. 2000 characters)

- The number and diversity among the actors from the four categories of the quadruple-helix model has increased due to the fact that the COVID-19 pandemic crisis, even if it came along with damages and deterioration from the point of view of health, socio-economic and human resources, it might be perceived as point of reset/restart for health care reform and innovation to be more patient-centered.

- A grown number of partnership and collaboration among all the actors from the quadruple-helix model was a natural consequence of the common effort for increasing the crisis response capacity and the level of training for diverse crisis situations.

- The involvement of the Romanian stakeholders/legal entities in projects proposals applying for EU funds related to home care and mitigating solutions for pandemic crisis was bigger in the last two years.

- Several studies performed under various Operational Programmes have been focused to evaluate the need for home and long-term care of the Romanian population, especially the vulnerable categories of persons. A larger implication of representative actors from the quadruple-helix model proved the interest and awareness regarding the importance of this subject.

- There were also situations in which actors in the field of business and research were slowed down in the development and implementation of home care solutions due to the interruption of medical services that provided resources, like health data.

- A positive aspect was the decision that made the Ministry of Health to make public the data on COVID-19, which facilitated a faster development of telemedicine and home solutions, with remarkable results for stakeholders from research, business and formal assistance.

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

Please provide information about significant projects or research initiatives in Home Care R&I implemented in the last two years (2020-2021). Please give emphasis to projects / research actions initiated as an impact of the COVID-19 crisis or as a response to face and recover from the pandemic's unprecedented situation.

| Name of the Project | **Support for vulnerable people in the context of the COVID-19 epidemic** <br><br> (2020 – implemented period: 6 months) |
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| **Short description (main objectives, main actions)** (max. 1000 characters) | The general objective of the project is to increase the quality of life and to combat situations of risk and vulnerability for the elderly and people with isolated disabilities at home or with travel restrictions and difficulties. <br><br> Two actions are funded: <br><br> 1. Providing support services for vulnerable people (elderly and disabled): <br> – Providing material and financial support for the elderly in solitary confinement at home, as well as for those with disabilities, but also to the social workers who will support them; <br> – Providing materials for the protection of the personnel involved in the provision of services, but also for their beneficiaries; |

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| | – Providing specific materials for disinfection, but also for the sanitation of homes, means of transport, goods and equipment of those involved.<br><br>2. Establishment of a call center to support the target group of the project. This is a measure to help prevent the spread of the virus and to provide practical assistance and support for the elderly and people with disabilities. |
| **Participating Organizations** | Beneficiary - Ministry of Labor and Social Protection<br><br>Partner 1 - Non-Governmental Professional Association of Social Assistance ASSOC |
| **Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how.** (max. 1000 characters) | Yes.<br>The target group of the project consists of:<br>– Vulnerable persons, respectively elderly persons, in solitary confinement at home or with travel restrictions, but also persons with disabilities or families caring for persons with disabilities during the COVID-19 pandemic;<br>– Employees of public or private authorities and agencies providing social and employment services to vulnerable groups.<br><br>The project complements the projects already being implemented at the level of the Ministry of Labor and Social Protection, respectively "Creation and implementation of integrated community services to combat poverty and social exclusion" and "Development of Social Assistance for Combating Poverty and Social Exclusion", projects aimed at developing integrated services at the level of disadvantaged communities. |
| **Total budget and source of funding** | The total budget of the project is 84,507,315.66 RON, of which 80,640,000 RON are allocated directly to social workers and vulnerable people affected by the pandemic, for the purchase of protective materials, coverage of transportation and accommodation costs for social workers who will travel in the community to support people with disabilities or the elderly, as well as to subsidize the income of the social workers involved.<br><br>The allocation dedicated to both the less developed regions (North-East, North-West, West, South-West Oltenia, Center, South-East and South-Muntenia) and the developed region Bucharest-Ilfov is 18 million euros (EU contribution and national contribution)<br><br>The project is financed from the European Social Fund, through the Operational Program Human Capital. |
| **Main results of the activities** (max. 1000 characters) | More than 100,000 elderly or disabled people affected by the isolation imposed by the COVID-19 pandemic can be supported by 1,000 social workers.<br><br>The project also includes the operationalization of a national call center that will coordinate and monitor requests from vulnerable people in need of support, as well as mapping and analysis of social needs at the national level. |
| **Website / Link or contact details for more information** | https://www.fonduri-ue.ro/anunturi-am-oi/details/6/1072/pocu-apelul-%E2%80%9Esprijin-pentru-persoanele-vulnerabile-%C3%AEn-contextul-epidemiei-covid-19%E2%80%9D |
| **Please explain the relevance of this Project / Research Initiative with the impact of the COVID-** | The project consists of the provision of services by 1,000 social workers for 100,000 people from vulnerable groups such as the elderly or people with disabilities who are isolated in their homes during the COVID-19 pandemic.<br><br>It can sustain: |

| 19 crisis (max. 1000 characters) | – The increasing of the quality of life and the combating of situations of risk and social exclusion for at least 100,000 elderly people and people with disabilities, in the context of the COVID-19 pandemic;<br>– The increasing of the capacity of at least 1000 public authorities to respond to the needs of vulnerable people in the context of the COVID-19 epidemic. |
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| Name of the Project / Research Initiative | **AI-Powered Communication for Health Crisis Management (AICom4Health)**<br>(January 2022 - December 2024) |
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| **Short description (main objectives, main actions)** (max. 1000 characters) | The objective of the project is to offer an innovative solution towards recovering the pandemics negative impacts on public health, healthcare access and socio-economics through remote monitoring -AI based platform's integration to the public's daily life whereas employing healthier citizens for smart cities in the area of 5G and beyond, network slicing, edge computing, artificial intelligence and machine learning based on feasible use cases including both medical and non-medical sensors for making accurate decisions and predicting risks against contagion in the future.<br><br>The use cases include integration of an IoT platform with various types of sensors to monitor physiological, behavioral and environmental data from natural indoors and outdoors environments. |
| **Participating Organizations** | – Detlef Scholle, Alten Sverige AB, Sweden – Coordinator;<br>– Beia SRL, Romania-Belgium;<br>– Luda Partners S.A., Spain;<br>– NETCHECK S.A., Spain;<br>– SII Concatel S. L., Spain;<br>– ECITelecom, Israel;<br>– Imagimob, Sweden;<br>– Pictor Consulting AB, Sweden;<br>– Techmarket, Sweden;<br>– CNET Svenska AB, Sweden;<br>– Terracom, Sweden;<br>– Danderyds University Hospital, Sweden;<br>– Mälardalen University, Sweden;<br>– BewellTechnology, Turkey;<br>– ETIYA, Turkey;<br>– NETAS Telecommunications A.S., Turkey;<br>– Turk Telekom, Turkey. |
| **Does the Project / Research Initiative promote the Quadruple-** | Yes.<br>It involves as main actors: citizens, health specialists, business representatives and public authorities (due to the links with public health and smart cities). |

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| **Helix Approach? If yes, please explain how.** (max. 1000 characters) | |
| **Total budget and source of funding** | Budget (total): 8698.1 K€<br>Effort**:** 100.45 PY<br><br>Source of funding: CELTIC-NEXT, the EUREKA Cluster for next-generation communications. |
| **Main results of the activities** (max. 1000 characters) | Use cases within the AICom4Health project will provide continuous monitoring of individuals and crowds through multivariate analysis, fast response and action to health deterioration of individuals or health threats within a crowd. It also deals with big data collection from several measurement surveillance cameras and also air quality monitoring capabilities. This will require real-time, fast and intelligent data processing techniques, while providing highly reliable communication through network slicing. |
| **Website / Link or contact details for more information** | https://www.celticnext.eu/project-aicom4health/ |
| **Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis** (max. 1000 characters) | It provides an innovative solution towards decrease of the above-mentioned pandemics negative impacts. |

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| **Name of the Project** | **Increasing the institutional capacity for national development of Palliative Care and Home Care (PAL-PLAN)**<br><br>(2020 – 2023) |
| **Short description (main objectives, main actions)** (max. 1000 characters) | The aim of the PAL-PLAN project is to produce studies, methodologies, working tools, educational programs, pilot projects to increase institutional capacity at central, county and local levels to plan, implement and monitor quality services palliative care in bed and outpatient units as well as to increase the quality of home care services, including home palliative care.<br><br>The project aims to create and introduce a unitary and fluent mechanism for planning, development, evaluation and monitoring of a national palliative care system and general home care, in terms of medical and personal care services (basic activities of daily living), to ensure the assistance of people suffering from chronic or incurable diseases, and those with a high degree of dependence. |
| **Participating Organizations** | – Ministry of Health;<br><br>– National Authority for Health Quality Management;<br><br>– "Casa Speranței" Hospice Foundation;<br><br>– Ministry of Labor and Social Protection;<br><br>– National Health Insurance House. |
| **Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes,** | Yes<br>Through its specific objectives:<br>– Increasing the capacity of central public authorities to develop public policy based on evidence to increase access to quality services; |

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| **please explain how.** (max. 1000 characters) | – Coordinated development at national level and integration of palliative care and care at home in the health system;<br>– Harmonization and simplification of legislative regulations on palliative care and home care to increase access to quality services<br>it involves all the 4 categories of the Quadruple-Helix Approach. |
| **Total budget and source of funding** | Total value of the project: 25,199,011.71 RON.<br><br>Non-reimbursable financial assistance from the European Social Fund, through the Operational Program Administrative Capacity: 21,792,178.81 RON.<br><br>Beneficiary's own co-financing: 3,406,832.90 RON. |
| **Main results of the activities** (max. 1000 characters) | – Developed national program for the gradual development of palliative care in bedside units, at home and in an outpatient setting, based on practices in countries with similar health systems;<br><br>– Ex-ante evaluation of the financial impact of the implementation of a national palliative care program in order to establish a separate budget line for the financing of palliative care;<br><br>– The developed National Program for the gradual development of home care;<br><br>– Developed and approved a national quality assessment system for palliative care services at home, outpatient palliative care and home care;<br><br>– Analysis and harmonization of the legislative framework, reporting and funding mechanisms and standards and procedures for palliative care in different locations and home care between public institutions involved in the project;<br><br>– Training and education of decision-making and enforcement staff in central and local authorities for palliative care and monitoring of the quality of palliative care services. |
| **Website / Link or contact details for more information** | https://anmcs.gov.ro/web/lansare-proiect-pal-plan-cresterea-capacitatii-institutionale-pentru-dezvoltarea-nationala-coordonata-a-ingrijirilor-paliative-si-ingrijirilor-la-domiciliu/ |
| **Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis** (max. 1000 characters) | The project responds to the need emphasized during the COVID-19 crisis to support the coordinated development of palliative care based on unitary regulations established through inter-institutional collaboration. This partnership will support the development of a strategy for the development of palliative care and basic home care services in the community, a strategy based on assessing the current situation of these services in Romania and aimed at improving the capacity of authorities to jointly develop simplified regulations and for the benefit of people with progressive or incurable chronic diseases, included an improved framework for home care. |

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| **Name of the Research Initiative** | **Solutions - 2020 - 2 - Public health management approaches in the context of the COVID-19 pandemic** |

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| **Short description (main objectives, main actions)** (max. 1000 characters) | The Executive Unit for the Financing of Higher Education, Research, Development and Innovation (UEFISCDI) joined the global effort and becomes, for Romania, the main catalyst of the funds dedicated to research and innovation in the fight against COVID-19. Thus, on April 3 2020, seven competitions were launched under Solutions - 2020 of Subprogramme 2.1 Competitiveness through research, development and innovation.<br><br>General objectives of this initiative:<br><br>– Accelerate scientific research that can help combat the spread of COVID-19 through effective prevention, rapid diagnosis and facilitating optimal care for all those affected by the full integration of innovation in each research area;<br><br>– Supporting effective interventions in limiting the effects of the COVID-19 pandemic on the Romanian territory, as well as offering solutions to reduce the impact on citizens;<br><br>– Develop the strategy for national participation in the new European context for coordinating security and space industry research. |
| **Participating Organizations** | The project offer might have been submitted by a single institution or by a consortium consisting of several institutions, Romanian legal entities included in the national research - development system, within the meaning of the provisions of art. 7-8 (1) of Government Ordinance no. 57/2002; |
| **Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how.** (max. 1000 characters) | Yes.<br>According to the decision of the Ministry of Education and Research, a project offer submitted by a consortium must include in partnership a public health system entity, involved in the management of the COVID-19 pandemic, which will provide relevant information (access to databases, providing and validating data, biological samples, etc.) for the purpose of the project, to benefit directly from the research results, and to be eligible for funding (for example: university hospitals). |
| **Total budget and source of funding** | Total budget: 500,000 RON (103,231 EUR)<br><br>Responsible/supporting Institution: Ministry of Health / Romanian Space Agency. |
| **Main results of the activities** (max. 1000 characters) | Development of information systems and databases (including those based on geoinformation technology and telemedicine) in support of public health management activities in the context of the COVID-19 pandemic. |
| **Website / Link or contact details for more information** | https://www.covid.ase.ro/<br><br>https://asppic-19.geo-spatial.ro/ |
| **Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis** (max. 1000 characters) | Researchers, academia and innovation in Romania, research institutes, came to the aid of society with solutions that will help stop the spread of the SARS-CoV-2 virus and also to minimize its negative effects. |

| Name of the Project | AngioNet "Development of public research and development infrastructure and creation of new infrastructures - e-Cardio-COVID19 Services |
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| **Short description (main objectives, main actions)** (max. 1000 characters) | The main objectives are:<br><br>− Establishment and operationalization of the AngioNet cluster which aims to generate and implement initiatives and activities related to health and improving health in the field of cardiovascular and oncological diseases leading to its development as a national cluster for competitiveness and innovation, to promote and encourage cooperation between companies, organizations, universities and public entities resulting in increased economic competitiveness and collaboration in interdisciplinary teams;<br><br>− Remote medical services provided by physicians to their patients during the periods when the movement of persons at high risk is restricted, as well as of those in isolation.<br><br>E-Cardio-COVID19 services are developed to cover complementary specialties: cardiology, infectious diseases, epidemiology, psychology and religious counseling by providing patients with teams of established doctors / specialists who are familiar with the pathology of patients or who have expertise for inclusion of new patients in the platform. |
| **Participating Organizations** | − Romanian Academy of Medical Sciences (coordinator);<br><br>− The University Emergency Hospital of Bucharest;<br><br>− County Clinical Emergency Hospital of Satu Mare;<br><br>− County Clinical Emergency Hospital of Suceava;<br><br>− County Clinical Emergency Hospital of Buzau;<br><br>− Heart Institute "Prof. Dr. N. Stancioiu", Cluj-Napoca;<br><br>− Institute of Cardiovascular Diseases – Timisoara;<br><br>− County Clinical Emergency Hospital of Brasov;<br><br>− County Clinical Emergency Hospital of Craiova;<br><br>− Institute of Cardiovascular Diseases „Prof. Dr. G.I.M. Georgescu"- Iasi;<br><br>− Emergency Institute for Cardiovascular Diseases and Transplantation - Targu Mures;<br><br>− County Clinical Emergency Hospital of Ploiesti. |
| **Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how.** (max. 1000 characters) | Yes.<br><br>It promotes and encourages cooperation between companies, organizations, universities and public entities.<br><br>In the first phase, the selected patients were those over the age of 65 included in the research database of the project conducted by the Academy of Medical Sciences through partner centers, undergoing treatment for cardiovascular disease and other associated chronic pathologies, with a high risk of mortality from coronavirus and who have the logistical means to connect to the telemedicine platform, including through owners who live in the same household with them. |

| Total budget and source of funding | Budget: 25 million EUR, through the European Regional Development Fund (ERDF) Priority Axis 1 / Operation: Major research and development infrastructures, Operational Program "Increasing Economic Competitiveness" and "Operational Program Competitiveness" 2014-2020. |
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| Main results of the activities (max. 1000 characters) | The infrastructure includes clinical databases and large imaging hosted by the AngioNet platform that is in line with the trends of EU-wide research on Big Data analysis and synthesis (large registers with thousands of patients and tens of variables for each patient). The developed infrastructure is used in collaboration with teams from various medical centers and specialties for conducting research on the types of interventions / treatments to reduce the risk of mortality among patients with cardiovascular disease and oncology.

The results of the research will materialize in a national strategy for the treatment of diseases, applicable throughout the country, in established specialized centers or at home and, in addition, it offers development in newer centers, with growing experience. This avoids costly, unscientific procedures. |
| Website / Link or contact details for more information | https://angionet.ro/p/e-cardio-covid19 |
| Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis (max. 1000 characters) | Telemedicine is an option for access to medical services and a real necessity in the current context, in which human movements and interactions must be minimized as much as possible to limit the spread of the coronavirus epidemic.

Remote healthcare is an important part of the global response to the COVID-19 pandemic. It can help reduce this risk by minimizing face-to-face interactions where remote medical consultations are possible.

This aims at the partial elimination of the center of gravity from hospitals by personalized treatment at home of patients with cardiovascular diseases and their scheduling of investigations depending on the severity of the disease assessed by the team of specialists.

Remote E-Cardio-Covid19 medical services are provided by physicians in the care of their patients during the period when the movement of persons at high risk is restricted, as well as those in isolation. |

| Name of the Project | **Innovation for Dementia in the Danube Region (INDEED)**

(2018-2021) |
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| Short description (main objectives, main actions) (max. 1000 characters) | **The main objective of INDEED** is to improve dementia care in the Danube region and contribute to the implementation of national dementia strategies with the scope of enhancing the quality of life of people with dementia and their carers. In a collaborative effort of partners from 10 countries, INDEED creates an information and skill-building intervention for institutions involved in dementia care and their members or employees, including health and social services, professional associations, governmental authorities, public administrations and private enterprises. |
| Participating Organizations | − Technical University of Munich, Germany;

− The Brain Company GmbH, Austria; |

|  | – Vienna University of Economics and Business, Austria; |
|  | – Bulgarian Society of Dementia, Bulgaria; |
|  | – National Institute of Mental Health, Czech Republic; |
|  | – Social Cluster Association, Hungary; |
|  | – Romanian Alzheimer Society, Romania; |
|  | – Memory Centre Bratislava, Slovakia; |
|  | – University of Ljubljana, Slovenia; |
|  | – Alzheimer Association A&R Sarajevo, Bosnia and Herzegovina; |
|  | – Federal Ministry of Health; Federation of Bosnia and Herzegovina, Bosnia and Herzegovina; |
|  | – Medical University of Sofia, Bulgaria; |
|  | – City of Zagreb, Croatia; |
|  | – Ministry of Health of the Republic of Croatia, Croatia; |
|  | – University of Zagreb, Croatia; |
|  | – MEDIWARE corp., Czech Republic; |
|  | – Bavarian Research Alliance GmbH, Germany; |
|  | – German Alzheimer Association, Germany; |
|  | – Slovak Medical Association, Slovakia; |
|  | – Bavarian State Ministry of Health and Care, Germany. |
| **Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how.** (max. 1000 characters) | Yes. The INDEED project has created an educational and skill-building intervention for multiple occupational groups involved in dementia care. Through enhancing the capacity of professionals for optimally dealing with the medical, psychological, interpersonal and organisational challenges associated with dementia the project aims to improve the quality of life of people living people with dementia and their informal (family) carers. |
| **Total budget and source of funding** | Budget in Euro: <br> – Overall: 1.963.600,02 EUR <br> – ERDF Contribution: 1.600.439,50 EUR <br> – IPA Contribution: 55.836,50 EUR <br> – ENI Contribution: 12.784,00 EUR <br><br> Source of funding: Interreg Europe/Danube Transnational Programme |
| **Main results of the activities** (max. 1000 characters) | The three components of the intervention (education, integration, innovation) are available in a traditional format (workshop materials) and as an online training platform. The online training platform comprises 3 modules: an interdisciplinary training **(CAMPUS)**, a networking tool **(CONNECT)**, and a business consulting service **(COACH)**. Through the existing multilingual educational programme, its modular structure and the convenient multimedia online format, the INDEED project is ideally suited to provide professionals with suggestions and solutions how to maintain the quality of life of people with dementia, how to intensify interaction and collaboration and how to adapt and innovate service delivery in times of social distancing and lockdown. |

| Website / Link or contact details for more information | https://www.interreg-danube.eu/approved-projects/indeed |
|---|---|
| **Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis** (max. 1000 characters) | **The ambitious aim of the project extension** is to complement, within 6 months, the existing INDEED educational intervention by a chapter on the management of dementia during the COVID-19 pandemic, particularly in times of social distancing and lockdown; it is in line with the "EU response to COVID-19" (2020) which emphasizes the need for supporting "experts training" (https://ec.europa.eu/commission/presscorner/detail/en/ip_20_604). The extension chapter focuses on: <br> – Specific needs of people with dementia brought about by the COVID-19 pandemic and how to meet them; <br> – Specific needs of family carers; <br> – Requirement of more intensive interprofessional communication, collaboration and coordination; the creation of alternative ways of service delivery in times of restricted face-to-face contact and consultation including good-practice examples. |

| Name of the Project | **Spectro.Life, a COVID-19 remote monitoring solution** (2020) |
|---|---|
| **Short description (main objectives, main actions)** (max. 1000 characters) | The Spectro.Life Application aims to monitor patients with COVID-19 in home care. The use of the application is free for both doctors and patients during the pandemic. |
| **Participating Organizations** | – Spectro.AI; <br> – Zaraz Digital; <br> – Cluj Family Physicians Association; <br> – Beard Brothers Association; <br> – Garmin Health. |
| **Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how.** (max. 1000 characters) | Yes <br><br> It promotes the link between citizens, doctors and business. |
| **Total budget and source of funding** | N/A |
| **Main results of the activities** (max. 1000 characters) | After confirming the diagnosis with COVID-19 patients can establish a direct communication with the doctor through the Spectro.Life application for patients. In some hospitals, patients will be equipped with smart devices and will be required to install the Spectro.Life Patient Application. <br><br> The Garmin Connect-connected app will provide the current physician with vital patient parameters, such as oxygen saturation, heart rate, respiration, and other health data. Some parameters, such as body temperature, need to be added manually. |

| | Patient data will be visible to the physician in real time via the Spectro.Life Dashboard for Physicians. |
|---|---|
| | In case of decompensation, the doctor will be able to react in a timely manner. |
| **Website / Link or contact details for more information** | https://www.spectro.life/ |
| **Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis** (max. 1000 characters) | People with chronic problems need to make sure that their vital signs are in proper condition every day, especially when they are not supervised by medical staff.<br><br>Spectro.Life makes it easy to monitor their health status, helps reduce the time to get a proper treatment, reduces the cost and pressure on the medical system, especially in the conditions imposed by the COVID-19 pandemic when access to certain medical services is restricted.<br><br>The application also calculates an Early Warning Score. If he is over 3, the patient must contact the personal doctor, and if he is at 5 or over, he must call an ambulance. |

| **Name of the Project** | **Virtual Coaching Activities for Rehabilitation in Elderly (vCare)**<br>(2017-2022) |
|---|---|
| **Short description (main objectives, main actions)** (max. 1000 characters) | The overall objective of vCare is to support the Recovery of an Active and Independent Life at Home (Main Objective 1) for patients recovering from impairments/disabilities. This shall be realized by a Smart Virtual Coaching System (Main Objective 2), providing rehabilitation guidance and guaranteeing the continuity of care in the home environment and daily life.<br><br>The project's ambition is to develop and validate a new ICT based virtual coaching approach for empowering and motivating people while rehabilitation in the home environment. |
| **Participating Organizations** | – Technische Universität Dresden, Chair of Wirtschaftsinformatik, esp. Systems Development (TUD), Germany (coordinator );<br><br>– Stiftung FZI, Forschungszentrum Informatik am Karlsruher Institut für Technologie (FZI), Germany;<br><br>– Casa di Cura Privata del Policlinico Spa (CCP), Milano, Italy;<br><br>– Imaginary SRL (IMA), Milano, Italy;<br><br>– AIT Austrian Institute of Technology GmbH (AIT), Viena, Austria;<br><br>– TSB Real Time Location Systems SL (MYS), Valencia, Spain;<br><br>– Servicio Vasco de Salud Osakidetza (OSA), Vitoria-Gasteiz, Spain;<br><br>– Siveco România SA (SIV), Bucharest, Romania;<br><br>– Universitatea de Medicină şi Farmacie "Carol Davila" of Bucharest (UMFCD), Bucharest, Romania;<br><br>– Aarhus Universitet (AU), Aarhus, Denmark; |

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| | – Innovation Sprint (iSPRINT), Bruxelles, Belgium;<br><br>– European Health Telematics Association (EHTEL), Bruxelles, Belgium. |
| **Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how.** (max. 1000 characters) | Yes.<br>The multidisciplinary consortium consists of researchers, healthcare providers and industry experts.<br><br>From the clinical perspective, vCare:<br>– Provides a solution that runs a personalized care pathway in smart motivational manner;<br>– Uses of a suitable mix of communication and coaching activities that supports a better therapy adherence;<br>– Allows the generation of an evidence base to allow empirically justified continuous improvements.<br><br>From the business perspective, vCare:<br>– Targets both rehabilitation centers and patients performing a rehabilitation programme independently;<br>– Determines the dependence of rehabilitation activities on the clinical setting.<br><br>From the patient's perspective, vCare:<br><br>– Provides a valuable tool to support caregivers and relatives in matters related to education on risk-factors management and problem-solving of specific situations. |
| **Total budget and source of funding** | Total Budget: 4.044 million EUR<br><br>Source of funding: European Union's Horizon 2020 research and innovation programme |
| **Main results of the activities** (max. 1000 characters) | In the vCare project, the team aims to build, through machine learning, software which will allow patients to perform cardiac rehabilitation in the comfort of their own homes.<br><br>vCare provides a virtual coach system for personalized rehabilitation programmes and care pathways at home. It will be demonstrated in the context of neurological and cardiological diseases.<br><br>In Romania, the testing of the integrated system is taking place at the Bagdasar-Arseni Emergency Clinical Hospital in Bucharest. |
| **Website / Link or contact details for more information** | https://vcare-project.eu/ |
| **Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis** (max. 1000 characters) | The vCare model focuses on covering the gaps of the currently available discontinuous institutional care to provide a continuous home-based care pathway that combine the disease risk factor monitoring and physical and cognitive rehabilitation. The pathway allows a high degree of personalization of care matching the specific expectations and requests of patients, caregivers, and relatives. vCare integrates in the path of developing cardiac rehabilitation programmes which will dramatically decrease the rates of hospital readmission and mortality of patients.<br><br>Patients are positive about the vCare system, and have shown an interest in, and readiness, to change in order to make use of vCare technology, including |

the vCoach avatar. They feel reassured knowing that will not be 'left alone' when they return home after their discharge from the hospital.

vCare is also a very cost-effective solution as it reduces the number of visits, provides objective and detailed information and options to the caregivers who can thus improve his time-management and the quality of care of the patient.

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

Please provide information about potential improvements you would suggest for your Policy Instrument. What kind of information (Management of the Policy Instrument methods, Strategic Focus of the Policy Instrument or New Projects to be implemented through financing from the Policy Instrument) would you be interested to learn from the other HoCare participating regions? (max. 5000)

COVID-19 pandemic had a strong impact on the Romanian health and social systems, including the home care domain and every aspect related to it: legal framework, medical and social services, human and financial resources, business, R&I, and last, but not least, the citizens. The pandemic hasn't ended and its lasting effects are still imposing dynamic and iterative changes in organization and operation of health services, together with improvements in associated policy instruments, in order to allow them to better support the actors from the quadruple-helix approach to better mitigate the negative consequences and dysfunctionalities. Although a Priority Axis 4 was created to address the COVID-19 crisis and was included in Sept. 2021 in our targeted COP 2014-2020, and although new smart specialization regarding health and ICT solutions were approached in other Priority Axis, more specific provisions should be implemented.

Potential improvements that might be proposed for COP are:
- Explicit introduction of home care domain in COP as a Priority Axis.

- Transforming the health crisis induced by the COVID-19 pandemic for defining new strategic directions in health, implementation of telemedicine services with a strong focus on home care.

- Increased facilities for R&I in the health and digital health domains.

- Inclusion of R&I together with SMEs in several specific COP calls to increase the degree of innovation of the achieved solutions.

- Ensuring investments for the purchase of specific equipment for home care.

- Reducing the analysis time of the submitted proposals, the rhythmic financing of the projects, together with a decreased associated bureaucracy.

In this context, among the most important potential improvements identified by the Romanian HoCare team that can be sustained by new provision of COP are:

- A more concentrate support for enhancing the primary health care for identifying the outbreaks as early as possible, including through a remote health monitoring based on digital technologies.

- Ensuring preventative, efficient patient-centric measures and strategies for increasing the access to new and modern home care solutions able also to sustain health at the community level.

- Increasing the health and ICT literacy level both for citizens and medical staff.

- Identifying alternative solutions for ensuring a continuous and total access to health care services, even in case of a pandemic resurgence.

- An enlarged multidisciplinary and multilevel cooperation for strengthening the global health as a response to the dysfunctionalities encountered in the last two years.

- Better legal framework for facilitating the broader adoption of standards aiming to provide the optimum interoperability for cross-border health solutions and applications.

- Enlarged access to a grown amount of health data for the public and private research actors.

- Raised awareness and empowerment of the population for their increased participation (including as smart citizens) for defining and adherence to the health policies.

- A shift from the in-patient health care to the out-patient health care so that the provision of health services is balanced at the national level in terms of quality and accessibility, and also in order to reduce the burden of the expenses related to institutializations.

- Increased facilities and urgency in adopting legal measures for a faster implementation of telemedicine services, even if many of them have been introduced in the health insurance system from the first months of the pandemic.

- A raised awareness and implication of local authorities in order to allocate the budgets for home care and social services according to the needs assessment in the field, the process identification of dependent cases. There must be a safety net for the citizen in need who is poor, with little pension and lives in the country in conditions similar to those in municipalities or cities.

A major interest for the Romanian partner in HoCare project is to gather information from the other partners about:
- The priorities that were identified in the last two years for the effective implementation of smart solution for a personalized home care.

- The provided facilities and programs developed for increasing the accessibility and acceptability of home care solutions, including remote health monitoring ones.

- Various initiatives aimed at alleviating the social difficulties faced by the various categories of citizens.

- Good practices at the level of local authorities perceived as a key pillar in supporting care services, including the home care and long-term ones.

- Programs and methods for sustaining a proper home care and caregivers for patients in rural areas.

- How they surpassed the difficulties regarding the bureaucracy which is perceived, along with funding, in the foreground of issues related to the development of home care solutions.

# 7) OTHER INFORMATION

Please provide any further information you consider relevant to this report (max. 5000 characters)

# 8) AUTHOR

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

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