



HoCare 
Interreg Europe

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

CYPRUS REGIONAL REPORT

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

Date: 31 August 2022

Report Prepared by: Dr. Eleftherios Loizou

Template prepared by: Nicosia Development Agency – ANEL (CY)



Contents

A) BACKGROUND	3
B) OBJECTIVE	4
C) METHODS / RESOURCES TO COLLECT INFORMATION FOR THE REPORT	4
D) TIPS & RECOMMENDATIONS: HOW TO PROPERLY FILL IN THE REPORT	4
1) POLICY INSTRUMENT	5
2) OTHER RELEVANT POLICY INSTRUMENTS	6
3) THE HOME CARE RESEARCH & INNOVATION ECOSYSTEM	8
4) MAIN REGIONAL ACTORS OF THE QUADRUPLE HELIX MODEL IN HOME CARE R&I	11
5) MAIN INNOVATIVE REGIONAL PROJECTS / RESEARCH INITIATIVES IN THE SECTOR OF HOME HEALTH CARE	15
6) EXPECTED RESULTS FROM THE EXCHANGE OF EXPERIENCE PROCESS WITH THE HOCARE PARTNERSHIP	18
7) OTHER INFORMATION	18
8) AUTHOR	18

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 INSTRUMENT¹

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)	Operational Program "Competitiveness and Sustainable Development" 2014-2020
Name of the Policy Instrument addressed (in regional language)	Επιχειρησιακό Πρόγραμμα 'Ανταγωνιστικότητα και Αειφόρος Ανάπτυξη 2014-2020'
Name of the relevant thematic Priority Axis (supporting R&I activities)	Priority Axis 2: "Fostering the use of ICT"
Specific objectives of the given Priority Axis	<ul style="list-style-type: none"> - Promotion of holistic, integrated, complex and multi-parameter solutions that will enhance the competitiveness of the priority sectors. - Expansion of the ability of the RTDI system to produce results of high standards and utilize them for the benefit of the competitiveness of the economy and social advancement/progress. - Development of substantial/valid links and synergies between the elements of the guardable helix.
Geographical Coverage (National, Regional, if other please explain)	National
Managing Authority	Directorate General for Development, Ministry of Finance
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)	We decided to still address the same PI as it is still in force (until the end of 2023), specific projects implemented in the framework of this PI have been delayed due to the restrictions applied because of the COVID-19 pandemic and some funds are still available to use. In addition, by the time the new Application Form for the extension of the project was submitted for approval, the Programming Documents and Policy Instruments of the new Programming Period 2021-2027 were still under discussion/preparation.
If 'No', please explain why you have chosen to change your PI? (max. 1000 characters)	N/A

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>

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)	Cyprus Recovery And Resilience Plan
Name of the Policy Instrument addressed (in regional language)	Σχέδιο Ανάκαμψης και Ανθεκτικότητας Κύπρου
Name of the relevant thematic Priority Axis (supporting R&I activities)	Pillar: Towards a resilient health system 1. Public health, civil protection and lessons learned from the pandemic
Specific objectives of the given Priority Axis	1.1 Resilient and Effective Health System, Enhanced Civil Protection
Geographical Coverage (National, Regional, if other please explain)	National
Managing Authority	Directorate General for Development, Ministry of Finance
Please explain why this Policy Instrument is relevant to Home Care R&I and/or quadruple-helix cooperation? (max. 1500 characters)	<p>The main objective is the promotion of those reforms and investments in the healthcare sector that will increase the efficiency, accessibility and overall resilience of the NHS. Emphasis is given to the enhancement of the competitiveness of the public hospitals and their readiness to effectively respond to possible future health crises, through the upgrading of infrastructure, equipment and procedures.</p> <p>The Axis also includes investments in relation to the enhancement of civil protection in terms of increased security measures to improve public safety, preparedness and resilience to imminent or developing disasters and the overall capability to handle emergencies, with the use of smart technologies.</p> <p>Hence, it is foreseen that a generic cross border e-health service system will be deployed in Cyprus.</p>

Name of the Policy Instrument addressed (in English)	Operational Program "THALIA" (ΘΑΛΕΙΑ) 2021-2027
Name of the Policy Instrument addressed (in regional language)	Επιχειρησιακό Πρόγραμμα ΘΑΛΕΙΑ 2021-2027
Name of the relevant thematic Priority Axis (supporting R&I activities)	Policy Objective 1 "A smarter Europe through the promotion of innovative and smart economic transformation"
Specific objectives of the given Priority Axis	Specific Objective 1 (ii) "Utilizing the benefits of digitization for citizens, businesses, research organizations and public authorities"
Geographical Coverage (National, Regional, if other please explain)	National
Managing Authority	Directorate General for Development, Ministry of Finance

<p>Please explain why this Policy Instrument is relevant to Home Care R&I and/or quadruple-helix cooperation? (max. 1500 characters)</p>	<p>OP "THALIA" 2021-2027's objective is the sustainable growth, by reducing social disparities, with a focus on smart entrepreneurship, green growth and job creation. Its Policy Objective 1 "A smarter Europe through the promotion of innovative and smart economic transformation" includes the Specific Objective 1 (ii) "Utilizing the benefits of digitization for citizens, businesses, research organizations and public authorities" targets (among others) the promotion and development of e-health. Specifically, one of the relevant categories of actions that will be promoted in the context of this specific objective is the "Development of information systems / applications / infrastructure to further enhance e-health and e-learning".</p>
---	--

<p>Name of the Policy Instrument addressed (in English)</p>	<p>RESTART 2016-2020</p>
<p>Name of the Policy Instrument addressed (in regional language)</p>	<p>N/A</p>
<p>Name of the relevant thematic Priority Axis (supporting R&I activities)</p>	<p>PILLAR II: SUSTAINABLE RTDI SYSTEM 5. "SOCIAL INNOVATION" PROGRAMME</p>
<p>Specific objectives of the given Priority Axis</p>	<p>Active and decisive involvement of the social target group, so that the concept / product / service / technology / model / strategy resulting from the project, is fully aligned to the group's real needs.</p>
<p>Geographical Coverage (National, Regional, if other please explain)</p>	<p>National</p>
<p>Managing Authority</p>	<p>Research and Innovation Foundation</p>
<p>Please explain why this Policy Instrument is relevant to Home Care R&I and/or quadruple-helix cooperation? (max. 1500 characters)</p>	<p>The Program supports, among others:</p> <ul style="list-style-type: none"> - the creation of new roles and relationships between organizations, in order to address a specific social problem (poverty, health care, population ageing, climate change, energy security, etc). - the formation of Consortia for the implementation of Social Innovation projects. - the facilitation of the technical knowhow in developing new instruments and capacities while enabling direct access and acceptance of the solution by the targeted social group. <p>The projects must necessarily include Experimental Development activities. They may also include Industrial Research activities.</p>

3) THE HOME CARE RESEARCH & INNOVATION ECOSYSTEM

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

Cyprus implemented the first phase of the new General Healthcare System (GHS) in June 2019, which unified a previously fragmented system that had serious problems, including an imbalance of resources between public and private providers, very high out-of-pocket (OOP) payments, large inequalities in access, long waiting lists and inefficiency of the health system overall. The new system is financed by state revenues and contributions levied through wages, incomes, and pensions. Under the new System, some responsibilities of the Ministry of Health shifted to the Health Insurance Organization, which serves as the single purchaser of services from both public and private providers. Some of the Ministry's other responsibilities moved to the new State Healthcare Services Organization, which is responsible for the development, management, control and supervision of hospitals and health centers in the public sector. Concerted reform efforts meant that, despite the pandemic, the new health system became fully operational on 1 June 2020. The Ministry of Health also played a central role in steering the country's response to the COVID-19 pandemic.

A significant challenge has been lower household incomes in 2020, leading to a steep reduction in revenues of the Health Insurance Organization during the COVID-19 pandemic despite increased demand. From 2020, the successful implementation of the General Healthcare System should further reduce OOP payments, which in 2019 accounted for over 30% of total health expenditure. In 2018 the share was almost 45%, and Cyprus had the highest level of OOP spending as a proportion of total health expenditure in the EU. Such high levels of OOP expenditure have caused access problems for low-income households, who risk incurring catastrophic health-related expenditure. While the old system covered only about three quarters of the population, the General Healthcare System covers the whole population. Cyprus spends 24 % less per capita on outpatient care, 39% less on inpatient care and 87% less on long-term care than the EU averages. This is largely due to the smaller overall health budget available; thus, as a proportion of current health spending, spending on more expensive aspects of care – such as inpatient care and pharmaceuticals – is relatively high.

The density of doctors is 4 per 1.000 population, which is slightly above the EU average, while the density of nurses is around 6 per 1.000 population, which is well below the average. This statistic does not reflect the wider imbalances in the workforce between the public and private sectors, as doctors primarily work in the private sector and nurses in the public sector. Prior to the implementation of the General Healthcare System, many doctors in the public system switched to work in the private sector. They were then contracted with the new system, either as specialists or as personal doctors, who function as primary care physicians. As a result, public hospitals tasked with ensuring surge capacity for treating COVID-19 patients entered the pandemic with a pre-existing shortage of doctors. In response, new doctors and other health professionals had to be recruited from elsewhere in the public system to respond to the needs created by the pandemic. Cyprus now has four medical schools, so it may be able to train more doctors to fill vacant posts. The system currently relies on medical graduates who studied abroad returning to practice in Cyprus.

Home care services within the GHS are provided by nurses and occupational therapists contracted with the Health Insurance Organization (HIO). Medical rehabilitation is provided by various healthcare providers contracted by HIO, to both outpatients and inpatients. More specifically, the GHS medical rehabilitation services are provided by:

- outpatient specialists
- nurses
- physiotherapists
- clinical psychologists
- hospitals

- palliative healthcare centres

In Cyprus, e-Health activities are still at the very early stages. The Ministry of Health (MoH) has started taking advantage of e-health standardization processes (to create infrastructure for electronic health records) at 2 large hospitals (Nicosia I and Famagusta General Hospitals), as well as the effective management of electronic materials and electronic prescription. MoH began to implement various projects that contribute to a better approach to cross-border healthcare. Some of the most important projects are the following:

- The development of an Integrated Health Information System, which consists of 13 subsystems that have to do with the running procedures of hospitals, such as electronic patient record, patient billing, managing e-prescription, laboratory tests, etc. The Integrated Health Information System is supposed to cover the key elements of hospital activities, to control both the quality provided to patients as well as to control the costs related to care provided. The Integrated Health Information System operates in Nicosia General Hospital and Famagusta General Hospital and some of the Health Centers in the two districts.
- Drugs Information management system. This system operates in all hospitals, pharmaceutical stores, and many health centers.

One of the future goals is the creation of Regional Health Networks (RHN) to exchange information in real time between all hospitals, Health Centers, regional clinics, and private doctors. The RHN will enable healthcare providers to have access to the right information, any time they want for better and higher quality medical care.

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)

Cyprus implemented the new, integrated General Healthcare System offering universal coverage on 1 July 2020. The income criteria of the previous system, as well as other prerequisites granting access to the public system, were abolished. Under the previous system, in 2019 only around 83% of the population were technically considered to be covered free of charge. The General Healthcare System aims to provide universal health coverage for all legal residents, including Cypriot citizens; EU citizens; third country nationals with permanent residence status and their dependents, regardless of income or payment of contributions; and refugees and asylum seekers. For the first time, migrants will have the same health care coverage as all Cypriots and EU citizens, reducing or even eliminating the disadvantages of the previous system, in which people were dependent on private health insurance. All diagnostic and therapeutic services provided as part of the COVID-19 response within the new system are provided free of charge. This also applies to undocumented migrants living in Cyprus, who are now legally entitled to health care and treatment of infectious diseases. The General Healthcare System provides a comprehensive package of benefits covering primary, outpatient, and inpatient care.

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

By law, the Department of Medical and Public Health Services of the Ministry of Health is the main body responsible for prevention and control of infectious diseases. In January 2020, the Department activated a task force at the Surveillance and Control of Communicable Diseases Unit of the Ministry. The response was led by the General Secretary and the Medical Services Directorate of the Ministry of Health, in coordination with the Scientific Advisory Committee, the Council of Ministers and the President of the Republic. The Scientific Advisory Committee consists of independent academics from universities and members of the Surveillance and Control of Communicable Diseases Unit. The Unit coordinates surveillance activities and is responsible for communications with the ECDC, WHO and EU. It also coordinates COVID-19 testing

procedures. Analysis of COVID-19 data is the responsibility of the Health Monitoring Unit of the Ministry of Health. At the highest level, the COVID-19 response is coordinated by the Council of Ministers and Ministry of Health, with the co-operation of the State Healthcare Services Organization and the Health Insurance Organization as a facilitator for working with personal doctors.

The COVID-19 pandemic had a major impact on population health and mortality in Cyprus, with 499 COVID-19 deaths recorded between March 2020 and the end of August 2021. The first wave of the pandemic in 2020 had a smaller impact on population health and mortality in Cyprus than that in most other EU countries, but the second wave that began in October 2020 was more severe. Most COVID-19 deaths in Cyprus occurred in 2021. The measures taken to contain the pandemic also had an impact on the economy, as GDP in Cyprus fell by over 5% in 2020, compared to an EU average fall of 6.2%.

Cyprus responded to the pandemic with a variety of containment measures official advice regarding the necessary personal preventive measures against COVID-19 – such as hand hygiene, respiratory etiquette, and social distancing – was issued in January 2020, before the first cases in Cyprus were recorded on 9 March 2020. After this, international travel restrictions were implemented, schools closed, and mass events cancelled. The first lockdown was announced on 23 March 2020, with restrictions on unnecessary travel and the closure of most shops, but as these rules were widely flouted, a much stricter curfew was introduced from 30 March 2020. After the first wave peaked in April 2020, a phased gradual lifting of restrictions began in May 2020, and the country reopened to tourists from low-risk countries in June 2020. Despite the implementation of new emergency measures in November 2020 (including limiting indoor gatherings to 10 people) the rise in new cases continued until early January 2021, when Cyprus went back into full lockdown. Schools and shops reopened at the beginning of February 2021. Despite the continuation of many other restrictions, the number of new cases remained consistently high, with increasing numbers of hospitalized patients pushing the health care system very close to its limits, especially in terms of availability of intensive care beds. In response, a two-week partial lockdown was introduced on 26 April 2021. This lockdown was replaced by the “safe pass” system, whereby entrance to hospitality venues was dependent on showing a pass confirming that the recipient had had a negative test in the past 72 hours, had recovered from COVID-19 in the past six months or had received at least one dose of vaccine. This system was due to be in place until 31 May 2021, but the Delta variant was also detected in Cyprus in May 2021. As infection rates continued to grow, the safe pass was made a longer-term measure and extended beyond hospitality venues – for example, it was required to use public transport.

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)
Community Volunteerism Council of Idalion (ΣΚΕ Ιδαλίου)	CVCI	The main objective is to identify and ascertain the social needs of the community and to promote and implement the necessary required community service.
Municipal Multipurpose Centre of Lakatamia (Πολυδύναμο Κέντρο Λακατάμιας)	https://www.lakatamia.org.cy/polidinamo-kentro-lakatamias/	The Center was established in 1999 as social assistance and welfare institution, in order to create social programs to provide social support to all vulnerable groups of Lakatamia Municipality.
Foundation of Municipal Multipurpose Centre of Strovolos (Ιδρυμα Πολυδύναμο Δημοτικό Κέντρο Στροβόλου)	https://www.strovolos.org.cy/archiki-selida/o-dimos/kinoniki-prosfora/idrima-polidinamo-dimotiko-kentro-strovolou/	The Center functions in the area of social assistance and welfare institution, in order to create social programs to provide social support to all vulnerable groups of Engomi Municipality.
Cyprus Nurses and Midwives Association (Παγκύπριος Συνδέσμος Νοσηλευτών και Μαιών)	https://cyna.org/home	The main purpose of the Foundation is the development of a healthy civil society, through the creation and operation of programs and activities to provide social services to those vulnerable and high-risk areas of the Municipality of Strovolos, proven research base, have this need. Social policies implemented covering a wide range of social services aimed at supply and optimum welfare of citizens of all ages participating in them.
Cyprus Social Workers Association (Σύνδεσμος Κοινωνικών Λειτουργών Κύπρου)	http://www.caswcyprus.org/	It represents the Nurses and Midwives of Cyprus in International Nursing and Obstetrics space. Capacity building and international exchange of experience.
"MedicAlert Foundation Cyprus"	http://www.medicalertcyprus.com/	To provide information and training to its members on current approaches in Social Work. Additional help and support efforts to enhance the role of

		social workers in the social life of Cyprus.
Cyprus Anti-Cancer Society (Αντικαρκινικός Σύνδεσμος Κύπρου)	https://www.anticancersociety.org.cy/en/page/who-we-are	The Foundation is functioning as a Data Bank in which, persons with any kind of medical problems or allergies can deposit all relative information. "MedicAlert" is authorized and undertakes the responsibility to make such information known to medical or paramedical personnel only in medical emergencies so that they can offer appropriate medical care and avoid risks of potential fatal developments.
Cyprus Association of Cancer Suffering People and Friends (Παγκύπριος Σύνδεσμος Καρκινοπαθών και Φιλών)	https://pasykaf.org/en	To support the patients' families and care-givers, but also inform the wider public about cancer prevention, diagnosis, treatment and relief.

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)
Materia Group	https://www.materia.com.cy/index.php?lang=en	Innovative Care and Rehabilitation Units
Leafnet LTD	https://www.leafnet.com.cy/	Production of Tele-medic-care solutions
Medigence Home Healthcare	http://www.medigencegroup.com/	Dementia and Alzheimer's Management Program Stroke Management Program

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)
University of Cyprus	www.ucy.ac.cy	Tele-rehabilitation project DITIS project
Open University of Cyprus	http://www.ouc.ac.cy/	No specific project is implemented yet. The organization promotes open discussion for research purposes in the field of e-health for home care through the quadruple helix approach.

Cyprus University of Technology	https://www.cut.ac.cy/	No specific project is implemented yet. The organization promotes open discussion for research purposes in the field of e-health for home care through the quadruple helix approach.
University of Nicosia	https://www.unic.ac.cy/	No specific project is implemented yet. The organization promotes open discussion for research purposes in the field of e-health for home care through the quadruple helix approach.
European University of Cyprus	http://www.euc.ac.cy/	No specific project is implemented yet. The organization promotes open discussion for research purposes in the field of e-health for home care through the quadruple helix approach.

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)
Directorate General Growth, Ministry of Finance (Γενική Διεύθυνση Ανάπτυξης, Υπουργείο Οικονομικών)	http://www.dgepcd.gov.cy/dgepcd/dgepcd.nsf/index_en/index_en?OpenDocument	Managing Authority of Structural Funds on national level
Ministry of Health (Υπουργείο Υγείας)	http://www.moh.gov.cy/	Intermediary Body for OP's Instruments concerning Health innovation
Ministry of Energy, Commerce, and Industry (Υπουργείο Ενέργειας, Εμπορίου και Βιομηχανίας)	https://meci.gov.cy/en/	Intermediary Body for OP's Instruments concerning innovation production from the private sector
State Health Services (Οργανισμός Κρατικών Υπηρεσιών Υγείας)	https://shso.org.cy/en/	State Health Services Organisation is the largest Healthcare provider in Cyprus, with 9 hospitals and 38 health centers in all cities and provinces. SHSO hospitals and health centers are available to citizens of all ages, 24 hours a day, with SHSO offering comprehensive health services that cover the full range of health needs of the population throughout Cyprus.
Health Insurance Organisation (Οργανισμός Ασφάλισης Υγείας)	HIO	The Health Insurance Organisation was established by virtue of the Law No 89(I) 2001 as a legal entity governed by public law for the implementation of the General Healthcare System (GHS) in the Republic. It is governed by a Board of Directors in which the government, the employers, the employees and the patients are represented. In accordance with the General Healthcare System Laws of

		2001 to 2017 the Organisation is the executive authority for the implementation of the GHS. The Law stipulates the philosophy, system-architecture and main features of the GHS.

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)

Following the restructuring of the health system In Cyprus, two main bodies were set up to allow the NHS being applied immediately. The Health Insurance Organization (HIO), known locally as GESY, tasked with reimbursing healthcare expenses including pharmaceuticals and the State Health Services Organization (SHSO) which is responsible for the management, control, supervision and development of public hospitals and primary healthcare centers.



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 / Research Initiative	eHealth4U - Integrated National eHealth Ecosystem
<p>Short description (main objectives, main actions) (max. 1000 characters)</p>	<p>The eHealth4U is a research project that undertakes the challenge of defining the structure and the content of the national integrated Electronic health Record (HER) system in Cyprus and developing a prototype of it. Its vision is that the outcome of the project will establish the foundations of the country's broader eHealth ecosystem adhering to the Electronic Health Law of Cyprus (No.59(I)/2019). The project eHealth4U, understands that materializing the full potential of an EHR, is to use a citizen centric philosophy. This is, to be designed and oriented towards the needs of the citizens and not necessarily those of health institutions.</p> <p>One of the major issues in the healthcare industry is the exchange of health data between disparate systems. To this end, the project leverages state of the art interoperability standards and profiles in line with EU recommendations and directions [1], [2]. An interoperability framework is articulated based on the Fast Healthcare Interoperability Resources (FHIR) standard by HL7 which is one of most prevalent healthcare interoperability standards. The framework also utilizes the IHE interoperability profiles proposed by the EU under the 1025/2012 directive in 2015 while adopts the provisions of the 2016 eHealth network guideline on the electronic exchange of health data under Cross-Border Directive 2011/24/EU.</p> <p>All interoperability mechanisms and eHealth services are implemented retaining a system with a holistic security enforcement and data security-by-design.</p> <p>Objectives</p> <ul style="list-style-type: none"> • Design the system architecture, specify the requirements in terms of clinical content as well as the hardware infrastructure. • Implement European and national legislation with respect to privacy and security that govern sensitive medical data manipulation. • Create a thorough EHR system which meets all the legislative obligations at a national level defined in the Electronic Health Law of Cyprus (eHealth law of Cyprus) and at a European level using the General Data Protection Regulation (GDPR). • Build an EHR which despite the abundance of medical information that can appropriately and concurrently be utilized by administrative and financial services without distracting medical personnel from their focus on patient care.

	<ul style="list-style-type: none"> • Design a Patient-Centred eHealth platform & Reference Architecture. • Design and implement an early eHealth adopters program in Cyprus Healthcare and adopt an effective change management strategy for a successful adoption of a universal EHR. • Exploit the sustainability of the eHealth4U Integrated Platform and Services.
<p>Participating Organizations</p>	<ul style="list-style-type: none"> • University of Cyprus (Coordinator) • State Health Services Organisation (SHSO) • Cyprus Telecommunications Authority CYTA • 3AeHealth LTD • UBITECH LTD • International Institute for Compassionate Care • HIPPOCRATEON Private Hospital • Iron Mountain Cyprus LTD
<p>Does the Project / Research Initiative promote the Quadruple-Helix Approach? If yes, please explain how. (max. 1000 characters)</p>	<p>Yes. eHealth4U targets to elevate the national eHealth ecosystem of Cyprus, through the enablement of the quadruple helix (Public, Academia, Industry, NGOs) and driven R&D, to derive a prototype of the national integrated EHR system which will safeguard healthcare quality considering interoperability, patient-centered healthcare, citizen-ownership of the EHR, standardization and confidentiality and security.</p>
<p>Total budget and source of funding</p>	<p>The project is funded under the Framework Programme for Research, Technological Development and Innovation "RESTART 2016– 2020" of the Research Promotion Foundation (RPF Cyprus). Total budget: 1.180.601,40 €</p>
<p>Main results of the activities (max. 1000 characters)</p>	<p>For the deployment and evaluation of eHealth4U a First and Early EHR Adopters Program (FEAP) in Cyprus healthcare will be designed and implemented. In this framework, clinical showcases will be developed, operated and supported analysing their corresponding evaluation. The clinical assessment findings will be communicated to the project's software development group for platform improvement and fine tuning to cover the required functionality.</p> <p>This action is of major importance for the successful deployment of the eHealth4U platform and services. The project team will undertake every effort to deploy the eHealth4U services to citizens more widely in the last six months of the project. A minimum number of 1000 patients currently receiving treatment at both private and public hospitals that are members of the consortium, including the Cyprus State Health Services Organization (SHSO), will be targeted to use the EHR. Feedback from end-users shall be received periodically via focus groups and relevant surveys. This will give the opportunity to the team to improve the eHealth4U platform and services as well as to better exploit and disseminate the outcomes of the project.</p>
<p>Website / Link or contact details for more information</p>	<p>http://ehealth4u.cs.ucy.ac.cy/</p> <p>Project Coordinator: Prof. Constantinos S. Pattichis, UCY (pattichi@ucy.ac.cy)</p>

Please explain the relevance of this Project / Research Initiative with the impact of the COVID-19 crisis (max. 1000 characters)

COVID-19 crisis imposed several restrictions on the smooth operations and delivery of health-care services, especially when physical presence was required. More implications were faced when cooperation with 3rd parties (either home or abroad) was required. The eHealth4U project's interoperability framework specifies the tools for achieving the exchange of EHR data between healthcare providers nationally or at a world-wide level, erasing all these setbacks. Another provision of the eHealth4U interoperability framework is the capture of citizens' health data in a structured form to facilitate its integration with various 3rd party systems in the national eHealth ecosystem (e.g. public health monitoring systems, etc.). FHIR implementations incorporate structured data allowing resources' elements to have coded values. In eHealth4U, priority is given in exploiting the fixed value sets provided by FHIR specification. The terminologies of SNOMED CT, ICD-11 and LOINC have been used to create value sets where FHIR specification did not fulfill the project's requirements. Finally, where none of the previous two solutions is applicable, a new code system is created based on the specific project's requirements. In addition, a mapping between the EHR fields and the FHIR profiles' elements was made using SNOMED CT, ICD-11 and LOINC.

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)

Being at the initial stage of the present Programming Period and having the new Operational Program running, it would be interesting for us to exchange experience with our partners and learn about the latest innovations in the field of e-health and home care ICT. From this exchange new ideas and initiatives may be produced in order to build new projects to proposed for being included and financed through the ESIF 2021-2027.

Furthermore, having the Local Authorities reform currently running in Cyprus and the new Local Authorities system to be fully operational from 2024 and on, our organization would be interested to learn from our partners what the role of municipalities might be in the sector of home care innovations delivery.

7) OTHER INFORMATION

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

N/A

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.

Country	Cyprus
Partner Organization	Nicosia Development Agency (ANEL)
Contact Person	Eleftherios Loizou
Contact Details of the Contact Person (email and telephone number)	eloizou@anel.com.cy +35722489105