READi for Health

Regional Digital Agendas for Healthcare

D1.1. Final report

November 2016

Contents

The READi for Health Project is supported by the European Commission within the scope of the 7th Framework programme "Regions of Knowledge and Research Potential

1 FINAL PUBLISHABLE SUMMARY REPORT

1.1 An executive summary

READi for Health aims to **strengthen the research potential of four leading eHealth regions** (Murcia, Skåne, Oulu and Midi-Pyrénées) by supporting their triple helix clusters to become world-class players in domains related to the EU Digital Agenda for the Healthcare market.

- To this end, we have **mapped our current research, business and policy environments** to investigate our real potential and engaged a wide variety of stakeholders in our efforts to move beyond the obvious and explore the key challenges associated with the widespread implementation of an eHealth system. The work has been oriented to **achieve a better understanding each regional ecosystem and the possible synergies** within the consortium with particular focus on the development and the applicability of the three ICT priorities: Semantic interoperability and standards, Cloud computing, and Secure information access from any device (with focus on mobile access), as well as Internationalization, and Pre-commercial procurement.

- Based on the information gathered, READi partners have done the **identification of the key regional health stakeholders** as they are the best informants on the topic, in order to gather ideas and proposals to improve the delivery of the Health service with the support of ICT (in particular making use of the 3 READi from Health priority areas), but also to identify gap in skills, needs, services and to spot opportunities and provide use cases with a clear business value that the three ICT areas can contribute to. According to the results achieved, for the 'implementation of ICT in health systems it is fundamental to respond to 32 NEEDS that have been PRIORITIZED to adopt the more realistic initiatives with greater chances of success and to guide decision making in the process of implementation of eHealth.

- Then, we have **discovered the needs** that healthcare leaders, politicians, and policy makers shared a common view on the main drivers for implementation of eHealth solutions to improve healthcare services for patients and citizens; to improve patient safety (i.e. access right health information at the right time across whole care chain) and to work smarter (for instance, by finding new ways of working, improving healthcare sustainability);But our work also confirmed the key **challenges and barriers** that need to be addressed to promote eHealth innovation, product development and uptake.

- Finally, nine actions were identified, and integrated the **Joint Action Plan**, that achieves READi for Health common aims by working on a range of actions that are executed on consortium level and/or are regional actions that can be scaled into the other regions within the project, realisable with the resources available the project or lead able to be implemented by accessing funding opportunities, implemented within a specific timeframe and based on the strengths and capabilities of at least one region.

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1.2 A summary description of project context and objectives

Health systems in developed countries face a twofold challenge: ensuring financial sustainability and improving quality. Setting up a Digital agenda for Healthcare can help health systems achieve both these objectives and unlock substantial value through lower spending and superior healthcare delivery, improving quality through measures such as monitoring chronic conditions more effectively to avoid acute events, increasing adherence to best practices, improving clinical decisions, and promoting healthier behaviours.

The development of an eHealth market today is not lagging because the technology is unavailable, but rather that the take-up of innovation is substantially slower than in other sectors that are not dependant on the Public Sector. Both ICT companies working in the field of Health and Healthcare Services, would have to collaborate closely with regulators, understand healthcare delivery, appreciate the need to protect sensitive patient data, and be trusted by patients. If a Healthcare Systems, at regional or national level, in each country were to take on this role, a step-change in mind-set and capabilities would be needed, as it involves acting as an ecosystem.

The four partner regions of the READi for Health project constitute an excellent foundation for cross-regional collaboration to promote eHealth. Together the consortium has access many of the important capabilities and frameworks required for internationally competitive eHealth development. With joint actions, the consortium's capabilities and shared best practice have provided an eHealth innovation platform that has the scale that is needed to attract the best joint research and innovation activities. Due to circumstances outside the consortium's control, the number of regions involved in the project was reduced to three.

To further spread the results and experiences gained through the READi for Health project, two additional eHealth clusters (Estonia and Extremadura) are being mentored. These clusters have been invited to partake and contribute, exclusively as non-READi for Health partner regions, in the actions outlined below.

One of the main achievements has been the definition of a **Joint Action Plan (JAP)** were nine actions have been identified, and integrated to achieve READi for Health common aims by working on a range of actions that are executed on consortium level and/or are regional actions that can be scaled into the other regions within the project, realisable with the resources available the project or lead able to be implemented by accessing funding opportunities, implemented within a specific timeframe and based on the strengths and capabilities of at least one region. It is also worth stressing that the contents of this JAP mirror the key challenges of the four ecosystems, identified by canvassing the needs and prerequisites of the stakeholders: patients/citizens, healthcare leaders and professionals, academia, businesses (particularly SME's), innovation support structures, as well as politicians and policy makers.

Over READi's 3-year life-span, objectives we set ourselves have been met and the impact of what has been achieved will continue to be apparent in the years to come. READí's has clearly contributed to advancing the EU's Digital Agenda in the Healthcare market, supporting policy makers, healthcare professionals and SMEs in finding common, mutually beneficial ground.

O1: Develop smart specialization strategies for quick eHealth innovation up-take

The first task within READi was to analyse the strengths and weaknesses of the Digital Healthcare ecosystem in each of the partner regions. Over 700 people participated in a joint

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survey across the regions to pinpoint some of the challenges facing digital health. These challenges were further explored in working groups held regionally, with each region hosting between 3-5 groups. Each of the 4 regions performed a local analysis, which then fed into a common global SWOT which would guide the work to come.

Two of the three regions were able to develop specific Digital Agendas for Healthcare: in Oulu, the Digital Agendas are developed by municipalities and follow the broad guidelines set out in the Oulu Digital Agenda for Healthcare; in Region Skåne, the READi team contributed to the eHealth strategy, the International innovation strategy (including three areas for smart specialization e.g. personal health), developed a Personal health - position paper for policy and also contributed to the creation of the Smart Specialisation Platform for mHealth led by European Commission, and participated in the eHealth stakeholder group held under the auspices of the smart specialisation strategy EUREGA. The political scenario in the Region of Murcia meant that progress was slightly slower but it should be noted that READi contributed to the region's plan, currently being developed, focused on the use of technology to combat chronic illness.

All this work has led to several new collaborations focused on eHealth. TICBioMed participated actively in the regional S3 and held a number of meeting with the Authority responsible for drafting the S3 for the Region of Murcia. Other initiatives include the Oulu Health Labs which brings together the hospital, 2 Universities, business and end users (patients and citizens) and Region Skåne Nordic Test Bed.

INDICATORS	TARGET	ACTUAL	% ACHIEVED
Creation of the SWOT analysis	1	5	500%
Delivery of regional Digital Agendas for Healthcare	4	2	50%
New cooperative collaborations	6	23	383%
(Funded) collaborative research projects	2	9	450%

O2: Development of and measures towards implementation of a JAP.

Developing the JAP in an environment of general restrictions on public spending and a focus on austerity. Despite these adverse conditions, the READi partners were able to find common ground and design a total of 9 common action to promote digital health.

In the case of Murcia, Meetings were held with the Regional Government representatives responsible for the regional heath and innovation budgets as well as with those responsible for public sector training. This last contact was important to ensure proper training for regional managers in launching effective PCP procedures, one of the focus areas of READi for Health.

In the case of Oulu, the JAP work led to a Proof of Concept project focused on how to create business from research in eHealth, and was a contributory factor in taking part the Nordic Test Beds programme to develop a collaborative network of Hospital Test Beds. In Region Skåne, the existence of the JAP led to a number of research projects applications that included "My Life- My Health patient empowerment platform 1.000.000 SEK 50% funded by Vinnova and the MyFutureHealth - 3,9 million Euro. The figures included in the table in relation to triggered research projects are conservative given the difficulty of proving the relationship between the JAP and the projects:

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INDICATORS	TARGET	ACTUAL	% ACHIEVED
Creation of the JAP	1	1	100%
Creation of a Financial Plan.	1	1	100%
Triggered research projects.	€4M	€4M	100%
Researchers working in regional Digital Agendas priorities.	20	80	400%

O3: Boost the competitiveness of the clusters and their members.

The JAP defined included a variety of action to disclosure market opportunities via a demand-driven approach, to unlock new business opportunities, especially for SMEs. Companies will continue to be supported in their implementation of innovations and the associated cost-benefit analysis, through the services defined in the JAP. In Murcia and in Oulu, SMEs have tested their solution in the Living Labs. In Region Skåne, the Nordic Connected Health Star Track is a project has been set up to accelerate the success and international scaling of Nordic start-ups that aim to claim one percent of the potential global market.

INDICATORS	TARGET	ACTUAL	% ACHIEVED
SMEs developing new products and services	8	10	125%
Innovative solutions incorporated in healthcare organizations	8	15	188%
New start-ups and spin-offs created.	2	10	500%

O4: Pre-Commercial Procurement and other Public-Private Partnerships.

During WP3, the READi for Health Partners, in collaboration with the regional working group on Pre-Commercial Procurement set in WP2, have collected resources, assess country-specific legal requirements, identify the regional procurement chain, detect barriers and exchange relevant best practices.

The use of instruments like Pre-Commercial Procurement (PCP) and other Public-Private Partnerships (PPP) has also been included in the JAP in order to facilitate the take up of ICT innovations but has taken much longer to take root as a public policy tool. Despite the difficulties, there has been some success: under H2020, ProEmpower addresses the delivery of care services for and with Diabetes Type 2 patients, putting special emphasis on patient empowerment and self-management. TICBioMed is partner of this consortium. Oulu was part of the MAGIC PCP process for people who had suffered from stroke THALEA, Solutions for Mobile Intensive Care Units (Oulu University Hospital) and SILVER Robotics for home healthcare.

INDICATORS	TARGET	ACTUAL	% ACHIEVED
Regional PCP purchases launched.	4	0	0%
European PCP proposals (1 partner from READi for Health.)	4	4	100%
Other regional PPP initiatives launched.	2	2	100%

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O5: Internationalization and Mentoring.

With regards to the mentoring activity, READi for Health partners have mentored two regions, Estonia and Extremadura (Spain) to support their capacity in setting up and developing regional research-driven clusters. Further internationalisation has been supported by forming solid relationships with other international health clusters

In Murcia, the partners organised a workshop at the FIE2015: Foro Internacionalización de la Empresa (11-13 march 2015) in which three eHealth SMEs showcased their experience in opening the South American market.

In Oulu, the internationalisation strategy has been linked to the Oulu Health. The aim is to attract companies to the region and offer them access to the resources they need to develop digital health solutions. The internationalisation workshop held through READi with 50 stakeholders attending were complemented with a further 2 workshops focused on H2020-SME instrument.

In addition to this, READi partners have liaised with the Skåne International Innovation Strategy and have participated in meetings to ensure a coherent approach to the internationalisation of eHealth. Workshops have been organised by Mobile Heights and Region Skåne (Invest in Skåne) for approx. 60 delegates

INDICATORS	TARGET	ACTUAL	% ACHIEVED
Delivery of regional internationalization strategies.	4	2	50%
Training courses on inter-nationalization.	4	7	175%
Nodes in the network.	16	28	175%
Contacts and business support provided within the network.	32	192	600%
International exchanges of R&D personnel between clusters.	4	2	50%
International customers.	8	10	125%
Clusters mentored.	2	2	100%

O6. Dissemination and Exploitation.

INDICATORS	TARGET	ACTUAL	% ACHIEVED
Delivery of dissemination strategy and plan.	1	1	100%
Creation and use of a project visual identity.	1	1	
Project websire	1	1	100%
Number of thematic seminars arranged.	8	6	100%
Final concluding conference	1	1	100%

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1.3 A description of the main S&T results/foregrounds

1.3.1 Analysis of research agendas

Analysis of research agendas was successfully completed and the results provided a solid foundation for the development and implementation of the JAP.

The eHealth research and business environments within the READi for Health consortium comprise many of the important capabilities and frameworks required for internationally competitive eHealth development. The regions have access to highly skilled and experienced human capital with training from academia and healthcare, as well as successful international companies within various sectors including ICT, life science and aerospace. However, the present situation within the consortium does not use all these good prerequisites for the promotion and development of eHealth innovation. The traditional silos of research and business areas are apparent.

Politicians and policy makers, healthcare leaders and patient organizations recognize eHealth as an opportunity to improve healthcare and provide better service to patients and citizens. However, the multidisciplinary approach of eHealth and lack of communication between sectors makes it difficult to define common regional eHealth strategies with a holistic approach. Current reimbursement models, lack of sustainable business models, and the IT/IS infrastructure all constitutes barriers for eHealth innovation and innovation uptake into the healthcare sector. Lack of knowledge in regulatory and standardization requirements for healthcare is also building barriers. Supportive test environments within the healthcare sector are required for product development and verification. eHealth is mostly a diversification area for companies either involved in ICT or in the medical technology/ embedded systems field. Innovation and product development requires access to a wide range of expertise i.e. medical, technical, human behaviour, ICT (e.g. security, interoperability), regulatory science as well as knowledge of healthcare and patient needs).

The regional public healthcare systems have need for modern, modular and flexible ICT platforms, which enable product- and care development, secure information exchange within the whole care chain, and connection of mobile eHealth solutions. Mobile solutions can move healthcare closer to patients and improve healthcare services and patient empowerment. Interoperability will facilitate free movement of patients between care givers, regions and nations.

Most companies involved in eHealth see it as a global market. However, the healthcare sector is a fragmented market and regional and national agendas do not always prioritize a global view, which may limit market opportunities for SMEs. Also different markets have different regulations, which affect market strategies. Another issue that needs to be considered in this context is the time to market. Many entrepreneurs and SMEs do not have the financial strengths to be able to endure long product development, regulatory approval phases, and public procurement processes. There is also a risk that the technology is old when it finally gets implemented. Thus, more flexible and iterative processes are needed.

The main challenge is the knowledge of unmet healthcare needs (customer-focused) and this is one of the biggest hurdles in the eHealth sector, as there is a lot of technology developed that is not used and does not succeed in the market because it does not meet real needs.

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Patient organizations have a great interest in eHealth as tools to improve communication with caregivers, get access to and share healthcare information, and to take part in their health and treatments. Thus, to empower patients and citizens and ensure development of eHealth products meeting customer needs, the triple helix clusters involved in eHealth should be evolved to quadruple helix clusters.

Finally, the established regional public procurement organisations have limited experience in procurement of innovation and current processes are resource and time consuming and does not fit SMEs. The healthcare sector/public sector should take an active role as partner and payer in innovative eHealth product development projects.

1.3.2 Mapping the needs in the regional Health ecosystems

Knowledge and dissemination of eHealth innovations are critical if we are to address the challenges posed by an ageing population and increasing prevalence of chronic disease. Despite multiple initiatives for the implementation of Information and Communications Technology (ICT) in the health sector undertaken at national and international level, there are still gaps to overcome and significant barriers with its implementation and generalization.

Players in the healthcare sector struggled to successfully manage the myriad stakeholders, regulations, and privacy concerns required to build a fully integrated healthcare IT system. This is partly because IT adoption focused more on patient needs than processes. Mobile health for example, is a technical reality; but work is needed to shape policies to implement it at scale and coordinate mobile health systems with the existing fixed infrastructure and care pathways. There could be more emphasis on "citizen tools" that support self-management of long term conditions and put people in charge of their own data

Therefore, an action plan must be grounded in the real resource and knowledge base available in each of the partner regions. To this end, we mapped our current research, business and policy environments to investigate our real potential and engaged a wide variety of stakeholders in our efforts to move beyond the obvious and explore the key challenges associated with the widespread implementation of an eHealth system.

Our work has confirmed the key challenges and barriers that need to be addressed to promote eHealth innovation, product development and uptake. From this work we were able to discover that healthcare leaders, politicians, and policy makers shared a common view on the main drivers for implementation of eHealth solutions:

- to improve healthcare services for patients and citizens;
- to improve patient safety (i.e. access right health information at the right time across whole care chain);
- to work smarter (for instance, by finding new ways of working, improving healthcare sustainability);

The principal findings of needs identified have been organised into 5 major thematic clusters and 32 categories (each category = specific need identified), and a concept map of identified needs have been created:

- Theme 1: Healthcare system /organization groups 6 needs
- Theme 2: Healthcare professionals groups 5 needs

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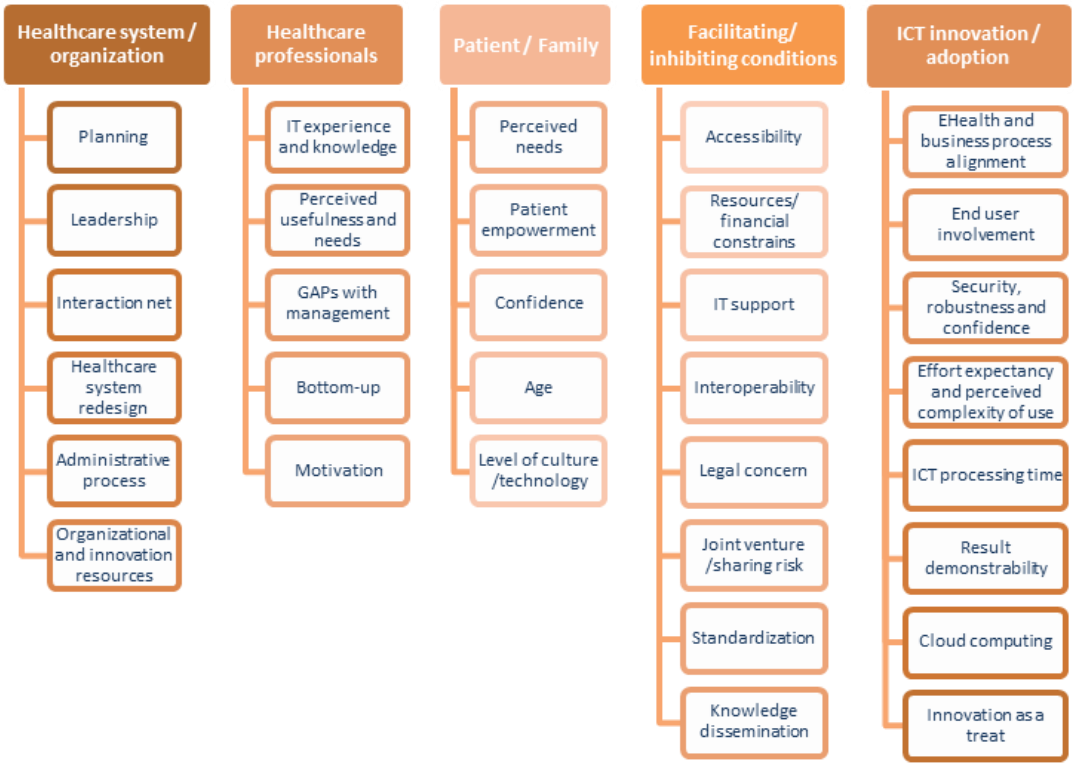
- Theme 3: Patient / Patient organizations groups 5 needs
- Theme 4: Facilitating / inhibiting conditions groups 8 needs
- Theme 5: ICT innovation / adoption groups 8 needs

Figure 1. CONCEPT MAP of data analysis framework



In order to reinforce the priorities identified and the implementation of interventions for advancing eHealth, we have performed a complementary level of analysis based on qualitative prioritization exercise. The PRIORITISED ACTIONS to address identified needs are:

- To encourage the implementation of strategic planning with a progressive redesign with those responsible for the health systems
- To identify as a technical priority the interoperability of information systems • Target patient intervention with methodologies that facilitates self-empowerment to improve their health
- To promote the participation and integration of all stakeholders and end users involved in eHealth, through an effective eHealth ecosystem
- To include planned actions for training and dissemination of knowledge
- To ensure that technological development ensures safety, robustness and reliability of systems

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- To address the needs of the stakeholders in the strategic actions
- To promote structures and resources that facilitate the innovative and entrepreneurial initiatives from the bottom up
- To design projects in response to an alignment of interests between companies and health systems strategies
- To promote the creation/development of specific innovation units in eHealth (new organizational and management models)

1.3.3 Design and implementation of eHealth Strategies at a regional level

Most health systems across the globe are facing tough economic challenges, that require balancing the demand for efficiency with high expectations in terms of cover and quality of care from citizens. For the READi for Health partners, both these objectives can be achieved by increasing the use of eHealth solutions and strategies. In doing so, the partners have applied a user-centric approach, sourcing the needs of healthcare professionals and patients and providing practical information and guides on eHealth strategies that can be followed when implementing the eHealth solutions and services. Where possible, this work has also fed into the channels that inform national health strategies, as well as other policy areas that directly or indirectly impact upon ehealth delivery.

eHealth strategies are neither developed nor implemented in a vacuum. They must fit into existing policy and regulatory frameworks, highlighting the changes that need to be implemented for new solutions to be successful. In this sense, each of the partners has had to deal with different national frameworks that guide regional strategies

- In Spain, the Prevention and Health Promotion Strategy of the Spanish Health System [link] proposes the progressive development of interventions aimed at improving health and preventing diseases, injuries and disability. It is an initiative developed within the framework of the Plan for the Implementation of the Strategy for Addressing Chronicity in the Spanish National Health System. This Strategy is focused on a three-dimensional course of action: by populations, environments and key issues to address.
- In Finland, the ongoing health, social services and regional government reform [link] is one of the biggest administrative and operational overhauls ever done. The aim is to use new, uniform practices to provide services that are more effective, efficient and cost-effective than today. The national health and welfare service reform has influenced the targets of READi action 1, as the laws setting was delayed during the READi program. The reform impacts the jobs of hundreds of thousands of people and affects the services of every citizen in the country. It also has an impact on the financial resources, steering and taxation of health and social care services. The aim is to transfer the organisation and management of health and social care services and other regional services to autonomous regions starting on the 1st of January 2019. The government of Finland will steer the autonomous reformation of the social and welfare regions in Finland. Alongside the reform, there are also ongoing projects aiming to strengthen the eHealth strategy at the national and regional levels.
- In March 2016 the Swedish government and the Swedish Association of Local Authorities and Regions agreed upon the new vision for eHealth for 2025 [link].”In 2025, Sweden will be world leading at using the opportunities offered by digitalization and eHealth to make it easier for people to achieve good and equal health and welfare, and to develop and strengthen their own resources for increased

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independence and participation in society. “An increased digitisation provides practical business support to secure a social service, health and dental care of good quality. As a basis for the work, stakeholders need to create the conditions necessary for businesses to use the opportunities provided by digital development in both the day-to-day work and in the long-term improvement and development.

eHealth innovation and development of successful sustainable products needs clinical research, innovation activities, healthcare development and entrepreneurship in close collaboration with end-users. Thus, development and implementation of successful eHealth strategies requires commitment from political decision makers, healthcare leaders and cross-functional and multi-disciplinary stakeholders sharing vision and objectives.

The regional collaboration within the READi for Health project has given additional opportunities to communicate and raise awareness regarding important aspects on eHealth strategies and prioritized actions as well as opportunities to showcase regions.

It is essential to follow the EU level strategy targets to get the funding directed for the needed national level implementations, and in similar way the regional strategy work needs to support the national strategy targets. Funding in the region is to be directed according to the strategy.

The national and regional service architecture strategy of the eHealth solutions and services has a crucial role in the interoperability. In addition, the regional and national service structure is needed to achieve seamless functionality between the different systems. However, besides the national and regional eHealth service structure, the interoperability requires equal collaboration between national and regional organisation.

1.3.4 Improve the competitiveness of Healthcare through the delivery of advance services

To improve the competitiveness of Healthcare it is important to set a health Hub. to support research, development, innovation and uptake of digital solutions for the management of health and care. The hub aims at providing a tailored support for eHealth innovation and product development to eHealth entrepreneurs and SMEs, bringing together key competencies and access to customers/end-users (e.g. patients/citizens, health care professionals).

The hub will simplify eHealth innovation by lowering the barriers to access the eHealth market and connecting innovators to existing capabilities (incubators, business developers, test beds in a live setting, etc.) as well as end-users (including patients) and healthcare organisations. It will also facilitate the process from identification of health care needs (end-users), innovation of solutions, and product development, validation and testing in a live setting. This requires access to a wide range of specific infrastructure and skills such as living labs, test beds, legal and regulatory science, as well as capabilities to perform clinical and health economic studies.

This new approach will connect the traditional silos, in which the different support mechanisms from the regional innovation system is divided, and activate the different elements that can make eHealth business potential be fully realised. The approach is bottom-up: the implementation of any eHealth service starts from needs in health care or customer needs related with health, wellness, and care. Thus, pathways starting from

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customer needs through research projects and pilots to successful products development should be facilitated.

It is important for entrepreneurs that implementation of the eHealth services can be made effective, fast and as easy as possible. The advantages of the service development models for maximizing the business and success rate are evident. SMEs need effective ways for go-to-market strategies, regionally, nationally and internationally.

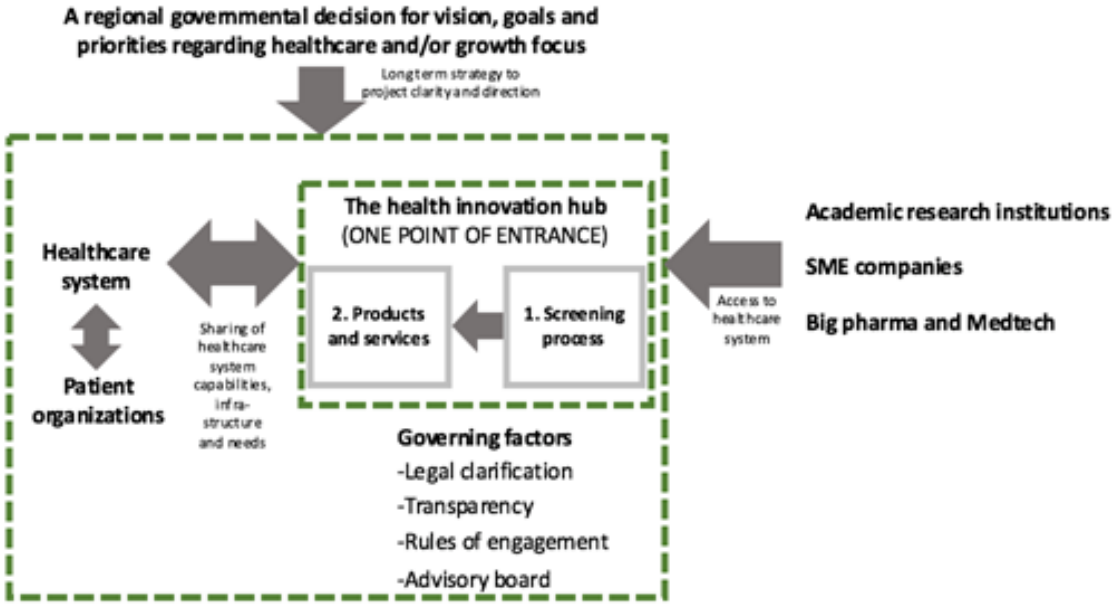

Figure 1. Health innovation hub business model concept

The healthcare requirements and regulatory information is also an important part of product development, and thus access to this expertise needs to be available and supported. Similarly, the integration pathways of new eHealth products or services are not always well-known and firms may require support in this field.

The operations of the hubs are often combined together as network organisations or ecosystems that often are more effective compared to traditional business creation organisations. These ecosystems can be either unofficial or official by nature, and they involve parts from different business creation services, business organisations, invest-in and innovation stakeholders, entrepreneurs, research and innovation organisations of SMEs and academia, and also important healthcare organisations (from public as well as from private side) as well as patient/patient organizations. This kind of ecosystem's operations and processes are combined to support the eHealth companies' solutions; all targeting for better and more efficient healthcare. Regional Ecosystems, linked to the ECHAlliance Ecosystem Network, are in operation in READi partner regions Oulu, Nice and Estonia and are being progressed in Murcia and Skåne regions. There are established ecosystems in some of the READi regions e.g. ECHAlliance [link], OuluHealth [link], TICBioMed [link]The regions are all collaborating strongly with eHealth research, development and innovation, and there are several organisations with an interest in eHealth. Cross-disciplinary networking arenas and collaborations are emerging. Regional innovation hubs together with ecosystems are getting

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more efficient and they have international collaboration that support research, development and uptake of digital healthcare solutions.

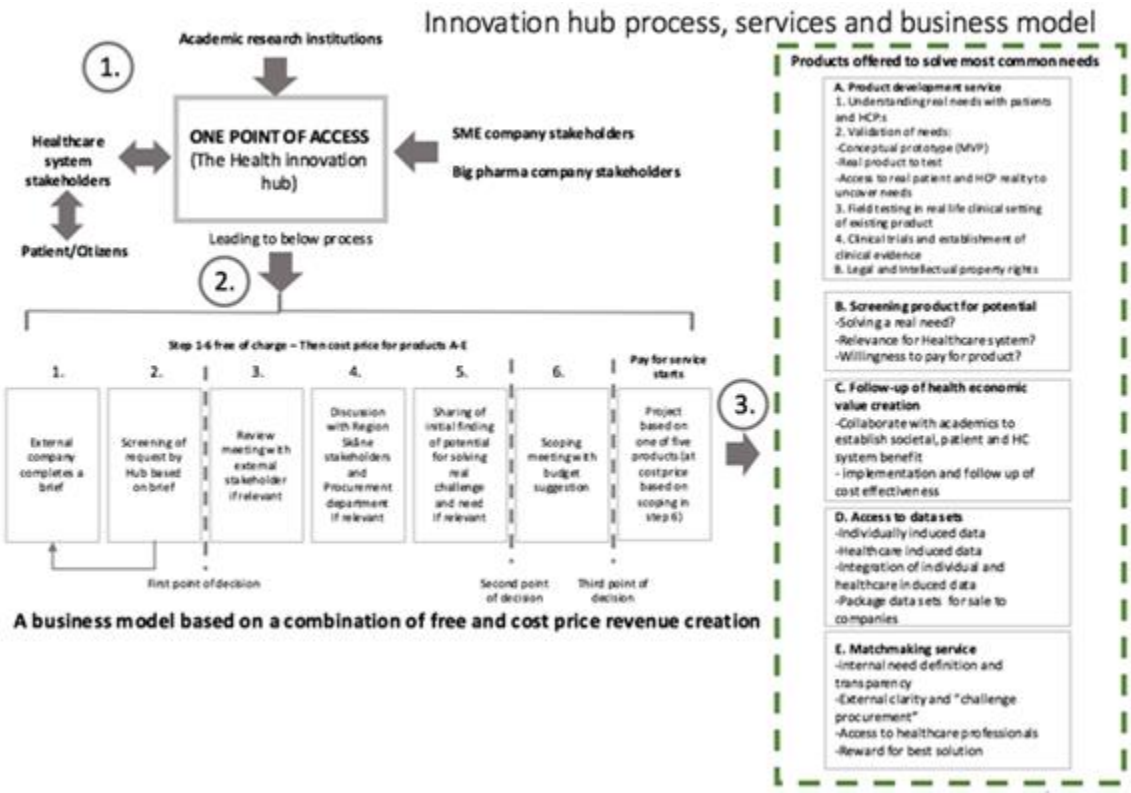

Figure 2. Innovation hub business model, process and services/products offered to serve most common needs.

Some issues have to be considered for the successful definition and implementation of a Health Hub:

- Overall health innovation hub vision and objective must be decided by the healthcare organization/political decision makers. There are opportunities to support business and regional growth as well as healthcare system improvements, however, there needs to be clarity around which priorities to make.
- The healthcare professionals have a very important role to ensure success of the health innovation hub concept. They will take part in identification of needs, product development and evaluation, clinical trials, testing and implementation of new and improved products and services. Thus, it is very important that the health innovation hub establish organizational buy-in to be able to function and offer the service and support needed by SMEs and big pharma/medtech companies.
- There has been close collaboration between OuluHealth Labs organizations and stakeholders has been very beneficial. Key stakeholders in addition to Oulu University hospital have been Business Oulu and the University of Oulu. When resources are combined, large scale events and pilots are possible to arrange. E.g. International OuluHealth Labs launching seminar (Test Bed Facilities for Health Innovation),

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eHealth seminar together with the Faculty of Medicine, Matchmaking events, Proof of Concept funding for health tech innovations etc.

1.3.5 Definition of interoperability standards

The READi for Health has been aiming to improve the interoperability of eHealth which will benefit the ICT infrastructure as well as to improve the access to data among patients and healthcare professional. Interoperable ICT infrastructure plays a key role in enabling business development, especially for new innovative services. It will also enhance the integration of healthcare system's ICT solutions and lead to the sustainability of healthcare system.

An interoperable ICT infrastructure will allow data exchange between healthcare professionals and organisations, but also between citizen and healthcare professionals, and enable real time and up-to-date health monitoring. The current lack of interoperability, which also has an impact on patient safety, has a negative impact on the expense, speed and effectiveness of the development of an eHealth service. READi for Health will strive for a future in which public and private services can share information standards and use the same platforms, thus ensuring interoperability across the whole care chain. The approach will be iterative, underpinned by other activities that will work on developing an ecosystem that is based on more open and standardised systems and working processes.

Interoperability is seen by the stakeholders as one of the most important issues to be solved. Interoperability is crucial for the health in terms of both organizational and information system level. Successful interoperability will facilitate patient safety by accessing the right information at the right time. Furthermore, it will empower patient and healthcare professionals by increasing the usability of ICT solutions in productive healthcare context through optimised information management, and improve patient and healthcare professionals trust in data. In addition, successful interoperability will enhance higher level of integration across the healthcare system's ICT solutions.

Interoperability is only partly a technical question. Interoperability is much more than interfaces of different systems and registers. Interoperability and service production are inseparable. Whole interoperability contains distribution and grouping of services. Services are available in certain platform, offered services have to be interoperable for platform. When creating a single service, technical specifications, of course, have to be clear.

Interoperability is high on European agenda. Top-down approach is used when solving European interoperability challenges. epSOS-project has been a key player in interoperability from 2008 to 2015. Project has defined eHealth standards and procedures in interoperability at the European and national level.

EPSOS and projects after it have created European standards mostly with national organizations. Horizon 2020 funding is relatively well available, although content of the calls is turning more and more technical testing of interoperability of applications and data. This contradicts founding in READi for Health project. Interoperability is much more than interoperability of data and registers. Interoperability covers measures from data collection to data analysis. Most important feature in interoperability is usability applications and services.

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Regions have only limited possibilities to have an impact on interoperability. Still regions have a role when developing interoperability. Services developed in the epSOS and other EU- projects are usually tested and deployed in municipalities in the regional level. Regional stakeholders can co-operate and put pressure on national authorities.

Service providers outside "official" healthcare system are facing interoperability related challenges. Companies and associations cannot offer their services through national and regional platforms if the services are not interoperable. In this case, interoperability is not just an exchange of core healthcare information, it contains also authentication and identification of services provider and user. With interactive solutions for learning, treatment and decision support, the individual's' involvement in their own care and health is promoted with potential to result in better patient outcomes and patient safety.

Regional stakeholders considered interoperability the most important objective in healthcare. Interoperability of registers and systems is a requirement for success of healthcare reforms. In order to improve interoperability in healthcare, companies and users of data should be more involved in process and interoperability should be considered wider than development of technical standards and protocols. In addition, equal collaboration between national and regional organisations in required in order to develop functional service platform and interoperability.

Besides the interoperability of systems, the user centered approach in interoperability is still a big concern and improvements and work need to be done in order to enable interoperable services for users. In addition, standardisation and regulation, which is happening in many levels, have a significant role in developing eHealth services and innovations, for example, but this requires a lot of work. Challenge working at the regional level is that standards are defined and decided at the European or national level. However, interoperability is implemented at the regional level. During the READi for Health, it was also noticed that there is competition ongoing regarding the standards which affect the development of regulation and common standards. All this requires a lot of knowledge, know-how, and new research programs, and step-by-step work, in order to achieve better interoperability between users, services, and organisations, including well working and common regulation and standardisation.

1.3.6 Big data and the cloud: applications on health

Big data initiatives have the potential to innovate and transform healthcare, starting with the vastly increased supply of information. In parallel, recent technical advances have made it easier to collect and analyse information from multiple sources, a major benefit in healthcare since data for a single patient may come from various purchasers, hospitals, laboratories, clinics, as well as patient-captured health data.

- In Finland, My Kanta pages is part of the Kanta services (The National Archive of Health Information), that are provided by the Ministry of Social Affairs and Health (STM), the National Institute for Health and Welfare (THL) and the Social Insurance Institution of Finland (Kela). My Kanta pages allow citizens to view and print all electronic prescriptions and summary of prescriptions.
- For Sweden there is also planned a nationwide service for managing a personal health account - "HälsaFörMig" (HealthForMe) Through this service you can as a private individual view, save and manage details about your health. You can enter data yourself, subscribe for hospital/health care generated data as well as generate data through available health-care apps. There are also more nationwide

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projects for next generations healthcare information systems within the healthcare. (E.g. In Sweden the 3R FVM "Framtidens Vårdinformationsmodell"."The healthcare information model of the future" project involving Region Skåne,(link)

- In the region of Murcia, the Strategy to introduce the Electronic Health Record (eHR) was launched in march 2013, within the Health Strategy 2015. This means that all professionals with access to the ER, hospitals and primary care can now access data from any patient. For this reason, it has initiated a process of internal training for professionals to learn how to properly use the tool of electronic health records. This implementation has been the most important qualitative advance in the management of patient information, that can be consulted in the regional Electronic Health Record care regardless of the point where the patient is. The Electronic Health Record is not just a compendium of information concerning the patient: tests, appointments, diagnoses, treatment, stored electronically, facilitating professional provide adequate health care to the user, but also allows exploit information assistance, economic and human resources, which will help in management.

There are many IT as well as non-IT barriers that need to be addressed in the roll-out of new innovative eHealth services for patients and citizens as well as providing data to Research for "Big Data" analysis also taking patient generated data into consideration.

- Legislation is lagging, and there is no shared legal framework for storing the health data in the cloud, and EU General Data Protection Regulation (GDPR) will apply May the 28th 2018. That will be a key enabler of the European Digital Single Market plan.
- At the moment the big data and health data use is not seen as an integrated solution for health care services but more as an ICT tool for development. Also there is a need for new infrastructures in future that can help healthcare solutions to be developed.
- It is required coordination on both national as well as EU level when defining and implementing next generation healthcare data information systems and to achieve the goal of equal and high-qualitative health care.
- The Health Care providers are stuck with old-fashioned Electronic Health Records and fragmented IT-environment resulting in interoperability problems. Standardization is needed. It is taking time until national-wide systems like e.g. 3RFVM in Sweden are rolled-out.
- The Big Data topic is broad and multifaceted. The project team has worked on creating awareness as well as raising the questions and issues when it comes to implementation of Cloud and Big Data related services within Healthcare.
- In general, there are huge cultural differences between the Health Care Providers and SMEs when it comes to ways of working, language, innovation drive, speed etc. creating barriers in the dialogue. Often it could even be problematic for an SME to find and establish right interfaces with Health Care Providers. Many solutions also lack clinical involvement and integration with Healthcare systems resulting in poor solutions.
- There is a general scepticism among citizens and patients when it comes to share health data to be used for research and for healthcare improvements. Many mHealth apps out on the market are lacking privacy policies and many apps are sharing health data with third parties without the user's awareness and consent.

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1.3.7 Internationalisation challenges and how to overcome them

The READi for Health project has been driving internationalisation activities aimed at accelerating global market access and profile raising for the EU regions of Oulu, Skåne and Murcia. This support has been targeted at the eHealth clusters, Regional Health Authorities and mature SMEs in order to maximise their international visibility and provide a platform for showcasing their work across regions.

The READi project has been a learning curve in terms of identifying how to best support the regions and SMEs to internationalise. This section summarises the lessons learnt from WP6 Internationalisation:

- Mobilizing SMEs is a challenge

  The relatively modest number of SMEs participating in the project is not indicative of the overall number of SMEs requiring internationalisation support in the regions. Rather it reflects the difficulties in mobilising SMEs through the networks of the consortium partners, who are mostly public organisations with limited direct links to SMEs.

- Internationalization takes time

  Internationalisation requires a considerable time investment on the part of the READi project and the SMEs themselves, and it has been challenging to provide the level of internationalisation support required within the time frame of the project.

  Similarly, while SMEs were often very clear on the profile of their target partners in international markets, making introductions and facilitating the connections require longer and building relationships and securing partnerships takes much longer again.

- Joining up with other internationalization actors in the region to avoid reinventing the wheel

  There are many actors within each region already providing internationalisation support to SMEs, including regional development bodies and investment agencies. When the READi project reached out to these organisations to collaborate in the organisation of workshops and events, it proved to be an effective way of accessing SMEs and engaging them in the project, something it would have been more difficult to do to a smaller 'READi' only event.

- Internationalization requires investment

  Accessing international markets requires a large time and money investment from regions and SMEs. This posed a particular challenge for the SMEs in particular, as with limited budgets for travel they tended to be very selective in the showcasing/ presenting opportunities that they accepted, opting for those that would coordinate with existing scheduled meetings. As a result, SMEs were not always willing or in a position to be able to accept all of the international opportunities offered to them.

- SMEs need support to understand international markets

  Feedback from SMEs in the 1-2-1 telephone calls suggests that SMEs require support and expertise in the form of market insights, so that they can refine the marketing of their solutions and their internationalisation plans to take account of local requirements in other markets. Informal feedback suggests that SMEs found the

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resources section on the READi website very useful from this perspective, as well as participating in the webinar on ehealth business models.

- SMEs need support to find the suitable channel towards the international markets

  There are many opportunities for SMEs to get involved in international activities and grants provided for them (e.g. accelerator projects or Innovation processes such as PCPs) but they need support in choosing the right one for them, and to understand the requirements. The READi for Health partners promoted such activities and encouraged participation, creating some successful cases, but a more systematic approach is needed.

- Follow up and ongoing contact with SMEs is necessary to be able to support them in securing potential partners and buyers

  Follow up and ongoing contact with SMEs is necessary to track their progress with potential partners and buyers and to identify where and when they require additional support to secure partnerships. Ongoing services like further introductions to potential partners/ buyers, insights into international markets, speaking/ exhibition opportunities, regular mailings on other internationalisation opportunities/ events of interest, are necessary to help them maintain a focus on internationalisation and continue their exposure to international markets.

1.3.8 Key issues to foster public procurement in Health

Public procurement is increasingly viewed as having important potential to drive innovation as it is aimed to steer the development of solutions towards concrete public sector needs and involves different suppliers competing through different phases of development.

Nevertheless, despite a generalised optimism regarding the potential of procurement to stimulate commercial innovation, the challenges are considerable. It is clear the impact on innovation of public procurement versus traditional innovation policy instruments but it is not clear yet the specific conditions or mechanisms within public procurement that actually lead to, or hinder, innovation. Given the multitude of practices and procedures involved in the procurement process, what matters, in order to inform policy design and implementation, is not so much whether it can influence innovation but how and under what conditions that impact takes place. This is an important issue because, despite the perception of procurement as an important tool and repeated efforts to put procurement budgets to work to drive innovation, efforts have been met with limited success.

Numerous barriers prevent the public sector from acting as an intelligent and informed customer. Barriers to effective implementation include **cultural organisational, regulatory, skills** and the inherent risk aversion of the public sector, reluctant to change process, lack of interaction with procuring organisations, the challenge to use outcome based specifications tenders as opposed to over-specified tenders, low competences/skills of procurers and a poor management of risk during the procurement process.

But among all barriers, one of the most important relates to the **lack of innovative culture** in the public administration. The public administration has to assume the potential key role of the public sector as ‘intelligent’ or ‘demanding’ client or customer. Suppliers will adapt to the signals of public demand and respond with innovative solutions if they see the public sector as a demanding customer. It is important that the procurement policy leads to a clear, consistent set of needs towards which innovative efforts can be directed. The lack of

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a needs identification process is a key obstacle for innovation, since early demand encourages investment to enable such outcomes. In this framework, READi for Health has identified the concrete public sector needs, based on the findings of the WP3.

Regarding **skills**, in comparison with the procurement of off-the-shelf goods for the lowest possible price, the procurement of innovation requires a greater degree of in-house competence and a shortage of commercial skills among procurers limit the engagement with the marketplace and the development of closer supply relations. READi for Health has organised concrete workshops and knowledge sharing meetings to lower these barriers and provide a better knowledge of what procurement of innovation involves.

There are also other important issues behind, such as risks in investing, innovations do not always bring long lasting solutions that what are the expectations, and funding in PCP is also challenging due to own costs as well, although, nowadays the PCP has "better funding rates" for buyers than earlier in EU's PCP programs.

It is important to consider the influence of structural, market and innovation regional determinants on the perception of procurement of innovation. There are some barriers related to strategic approach, competences and relationships among stakeholders in public procurement that influence Healthcare Systems' ability to innovate and to reap the benefits of innovation through procurement of innovation. E.g. There were 2 great opportunities for regional stakeholders of Oulu, but the procurement situation is unclear in reformation of health and welfare regions (SOTE), and municipalities saw no interest to invest into PCP before all matters are more clear in reformation.

From the suppliers' side, particularly smaller firms and not-for profit organisations, encounter greater difficulties with innovation arising from the procurement process, for instance in relation to contract size, lack of useful feedback and communication of opportunities, cumbersome processes and issues regarding protection of IP rights, and risk of losing final procurement competition - thus losing market opportunity, among others.

1.3.9 Capacity building: patients and professionals

The information obtained in the READi for Health identification of the healthcare needs (WP3) showed that building digital and health literacy is important not only for professionals and students in health fields but for all individuals.

The objectives of the READi for Health consortium was to support patient empowerment in two different but complementary dimensions, on one hand the improvement of a person's ability to effectively self-manage chronic disease and to enhance patient groups' capacity to participate efficiently in health policy development. In both cases, civic organisations, which include self-help groups, associations of patients with a chronic disease, networks and umbrella organisations, play an essential role.

From the point of view of the business, most of the eHealth innovators consider eHealth as "diversification" and thus lack specific knowledge related to this area, as well as professionals that usually refer to the complexity of the domain and the fact that they lack knowledge in specific areas. Linked to this, the consortium focused on consulting leaders/experts with as much interdisciplinary knowledge as possible, asking what are the required skills to mobilise to produce efficient and useful eHealth tools.

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In the WHO report "From innovation to implementation – eHealth in the WHO European Region (2016)" capacity-building is defined as "the development of knowledge, skills, commitment, structures, systems and leadership to enable effective health promotion. It involves actions to improve health at three levels: the advancement of knowledge and skills among practitioners; the expansion of support and infrastructure for health promotion in organizations, and; the development of cohesiveness and partnerships for health in communities".

Around the world, health literacy is increasingly being recognised as a crucial determinant of health, and is attracting more and more attention from researchers, politicians, and health care organisations. This also has emerged from a study conducted for the European Commission by the EPHORT consortium, led by the Netherlands Institute for Health Services Research (NIVEL)

- The operational environment in Finnish society is undergoing an intense transition. The Ministry of Education and Culture has outlined the direction of development and reconfigured its operations to support the comprehensive transitions with its Strategy 2020 to support the Finnish education system. The Government Programme has an action plan where e.g. the action for cooperation between higher education institutions and business life will be strengthened to bring innovations to the market. The government co-finances the cost of education and cultural services by means of transfers to local authorities. More information in Objectives and programmes.
- In Sweden, the eHealth vision for 2025 state "In 2025, Sweden will be world leading at using the opportunities offered by digitalization and eHealth to make it easier for people to achieve good and equal health and welfare, and to develop and strengthen their own resources for increased independence and participation in society." Several e-services for citizens are available, i.e. access to electronic health records online, e-prescriptions, online appointment booking, "Health for Me"(the personal health account), "Medicine check", and healthcare advice and knowledge portal "1177 Vårdguiden" to help citizens develop and strengthen their own resources to participate in health and care.
- In Spain, health competences correspond to both the Ministry of Health, and the different autonomous regions / regional organizations. Each regional ministry develops its own policies and strategies of training for health professionals and regional education programs for patients through different online platforms, Health Schools Network for Citizenship, but governed according to the national strategies. This network gathers experience and knowledge of national health schools. Health education oriented health promotion has a capacity building approach; it is improving life skills and critical analysis of health problems. Its purpose is not to instill knowledge and precise habits but positive experiences and develop cognitive, emotional and social skills to address health problems of the present and future.

Currently there are differences between European countries in addressing this issue. Finland was, to our knowledge, the first country to establish since 2012 a special competence for healthcare information technology to physicians and since 2015 to dentists. The special competence requires two years full time service and theoretical studies after a qualified medical specialist consultant status. The competence build knowledge about healthcare processes for the benefit of the new eHealth and mHealth services. The training has been enrolled to the program which is a joint effort of Finnish Society of Telemedicine and eHealth, Finnish Medical Association and Finnish Dental Association [14, 15, 16]. Is not the case in Spain where training on how to use ICT and eHealth is not a part of standard medical curricula. In

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Sweden, regions have different approaches to this action based on regional prioritized needs and conditions/prerequisites.

Moreover, the European Commission and the Member States should take steps to ensure that eHealth is part of the curricula of health care professionals, notably making use of the new possibilities provided by the updated Directive 2005/36 on regulated professions. One of the key recommendations made by the eHealth Stakeholder Group, an European Commission of advisory body, in their report of the eSkills workforce. According to the group, the healthcare workforce is crucial in the wider deployment of eHealth. The Supporting digital skills of the health workforce, is what is mainly needed in the constant changing nature of the healthcare systems and healthcare delivery.

The "Digital Skills for Health Professionals" is also one of the recent recommendations of the European Health Parliament, adopted last day June 29, 2016. To equip health professionals for the digital health future The greater emphasis placed on the needs and abilities of the end-users, the health professionals, is recommended. This should be done through better incentives and continuous education of health professionals in the knowledge, use and application of digital health technology as a central to the European agenda for digitizing healthcare. The following actions are recommended:

- Establish mandatory tailored training programs on digital skills for health professionals from early education to professional development programs.
- Launch a joint action on digital skills for health professionals to agree among the Commission and Member States on the key issues and determine a common approach.
- Update clinical guidelines to include mHealth and eHealth solutions that enable healthcare professionals to deliver mHealth and eHealth solutions to their patients.
- Make healthcare professionals co-developers of mHealth and eHealth solutions.

The interaction with other strategic people from other regional healthcare systems has given to READi for Health team the possibility of identifying those good practices and models of group and patient education which could be replicated locally.

- In order to ensure that eHealth is successfully adopted and that health inequalities are reduced with the digitization of services it is important to develop specific programmes focused on educating both health professionals and individuals on how to use health technologies for better management of the health.
- Group learning programmes which includes patients, healthcare professionals and experienced peers / patient organizations offers the opportunity to find new strategies for managing daily life of the patients and to share experiences with others in similar situation.
- Training and education of ICT health solutions is important aspect in addition to traditional health education methods. Also understanding of eHealth services among health workers and students of health sciences are in important role in order to strengthen workforce capacity, and to stimulate innovation within the health sector.
- Using eLearning as part of a national health strategy can improve the skills and knowledge of health workers. eHealth training integrated into different subjects across clinical disciplines, is more effective in consolidating and extending in-depth eHealth skills in students.
- In order to lower the barriers for uptake and up-scaling of eHealth solutions in healthcare, it is important to provide healthcare professionals with efficient tools

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that display available validated, evidence-based, and secure ehealth solutions that can be "prescribed" to their patients. This kind of tools is also a powerful marketplace for eHealth suppliers and can promote broad implementation and sharing of clinical experience.

- Involvement of the end-users in different levels (e.g. from care professionals through patients in care and into family members and individuals) are the key for successful development of sustainable patient empowerment solutions.

1.3.10 Raise awareness

The presence of the READi for Health project, project events, and dissemination of results from the project in the regions have served to raise awareness of eHealth and as a ripple-effect initiated or promoted discussions and activities in the regions as well as attracted new actors to the eHealth field.

1.4 The potential impact and the main dissemination activities and exploitation of results

This section describes the higher level summary of the JAP impacts. Certain impacts are seen immediately or soon after the implementation, but more frequently, the impact of the actions undertaken under the Joint Action Plan will be seen in the longer term. This poses a challenge in estimating and measuring the effects of implementation. The paragraphs below provide an overview of impacts that can be reasonably be attributed (at least in some degree) to the actions performed under READi for Health project.

1.4.1 Definition of Regional eHealth Strategies

The process of developing the "Action 1: Regional eHealth Strategies" has had a considerable impact on each of the regional health systems. By identifying and involving key players, the partners have been able to forge strong links between policy makers, health professionals and the business community.

The strategies have also provided a focal point for stakeholders to provide input to broader Digital Agendas, as well as Smart Specialisation Strategies and shape the regional health priorities based on the ecosystem needs. The relationships built within and between these ecosystems have resulted in collaborative research and innovation projects in the field of eHealth. These relationships are set to last beyond the timeframe of READi for Health.

At regional level, the longer impact of the strategies themselves is still to be seen but there are already some clear impacts crystallising.

Murcia region

- One of the key tenets of the Chronicity Strategy is continuity in health care, so the implementation of integrated care processes of most prevalent pathologies and diseases with the greater impact on the population of the Region of Murcia has led to a reduction of the fragmentation in health care. This has facilitated greater patient counselling by the regional health system where the patient does not feel lost. Good practice is identified and expanded to all regional health map, making efficient use

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of all the opportunities offered by new technologies to deliver care more adapted to the needs of the patient, placing the patient at the centre of all interventions.

- The engagement of 23 healthcare decision-makers and leaders in the identification of needs in the regional health system and the results of this research has advanced several lines of action, as the development process of the School of Health (link to Action 8 Capacity building), boosting innovative public procurement (PCP / PPI) (link to Action 7), specific workshops and knowledge exchange meetings with participation of professionals from the regional health system the and the proposal of new approaches to facilitate greater participation of SMEs in these processes.
- Being an active part of the ECHAlliance eHealth Strategy Group has allowed to know from first hand different approaches and experiences from other countries and regions related to eHealth strategy and apply knowledge acquired in awareness raising and lobbying for the regional eHealth strategy and designing actions at regional level.
- Lastly, the READi for Health team stimulated a debate around ehealth and its role in the regional Smart Specialisation Strategy (RIS3Mur). Concrete actions are already providing responses to the major challenges identified, including the promotion of cooperative and multidisciplinary R & D + i between all public and private agents in the regional system, favouring the creation and participation in networks with the consequent promotion innovative culture.

Oulu region

- The strategy for the National Architecture for Digital Services (KaPA) and for eHealth services has been adopted from the region of Oulu (these were results in earlier project called ONION). It has been an important enabler for compatible infrastructure facilitating information transfer between public organisations and services, and influencing the funding for the municipalities via regional and national funding instruments.
- The mHealth architecture strategy from SAMPO program presented by City of Oulu in the eHSG event in Tallinn really showed the importance of the findings in different architecture solutions, and it is pretty much strategy decisions that are still needed to be made to get mHealth into real flight with healthcare.
- Regional eHealth companies are gaining on the support that they are receiving from the OuluHealth ecosystem, as its functions are open, and OuluHealth persons from Business Oulu organisation offer support for SMEs in many levels.
- Information to support well-being and service renewal, eHealth and eSocial Strategy 2020 (Sote-tieto hyötykäyttöön) [link] offers important support and information regarding the objectives and needed procedures when developing the eHealth and eSocial service structure at the national and regional level in Finland. The eHealth and eSocial strategy 2020 is affecting the planning, development and implementation of eHealth and eSocial services as a part of the national and regional health and social service reform, and therefore, it has a significant impact on the national and regional eHealth strategy.

Region Skåne

- In May 2016, Region Skåne adopted an eHealth strategy for 2016-2020 which is based on the priorities highlighted by the READi for Health team.
- Region Skåne has also recruited Mats Ekstrand, a former head of Mobile Heights, as a strategic advisor for eHealth and mHealth.eHela

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- The Region is also a member of the ECHAlliance network of international ecosystems is considered among regional eHealth stakeholders.
- The READi for Health partners Region Skåne and Mobile Heights have contributed to a regional Whitepaper *"En nationell nod för m-hälsa och digitalisering i Skåne"* that aims at getting national and regional funding for further strengthening Skåne as a national hub for connected Health/eHealth/mHealth through an establishment of a new research institute, an eHealth testbed as well as an international development environment in Skåne. The Whitepaper was supported by the regional council in June 2016 and will be further addressed at a seminar July, 3, 2016 at the Almedal Week in Visby, Sweden, a yearly nationwide event for politicians and other stakeholders in July 2016. (See also Action 2/3 and 5).
- Finally, it is worth noting that the eHealth research and business environments in Skåne comprise many of the important capabilities and frameworks required for internationally competitive eHealth development. The region has access to highly skilled and experienced human capital with training from academia, healthcare, and successful international companies within ICT and Life Science. However, the present situation within the region does not utilize all these good conditions for promotion of eHealth innovation and development. The traditional silos of business areas are apparent.

1.4.2 Boosting the competitiveness of research-driven clusters by creating innovation-friendly ecosystems and regional sustainable partnerships

The READi for Health innovation hub concept, providing support to ensure the development of successful and sustainable eHealth products meets the needs of end-users, has the potential to boost the competitiveness of the regional eHealth clusters. The development of eHealth solutions requires clinical research, care development and entrepreneurship in collaboration. Establishment of regional health innovation hubs may stimulate this cross-disciplinary collaboration, improve networking and business collaborations and lower the barriers for implementation of eHealth solutions in healthcare.

The healthcare professionals have a very important role to ensure success of the health innovation hub concept. They will take part in identification of needs, product development and evaluation, clinical trials, testing and implementation of new and improved products and services. If the health innovation hub is successful in establishing organizational buy-in tailored services support and support including end-users can be provided to SMEs and big pharma/medtech companies. In addition, the health innovation hub will promote healthcare re-thinking and innovation as well as involve end-users (professionals and patients/citizens) in the development of future eHealth solutions.

The health innovation hub concept has the potential to identify lead-user innovators in the healthcare system, early adopters of eHealth playing important roles as ambassadors for implementation of new technology and new ways of working in day-to day healthcare.

Furthermore, the health innovation hub may serve as a platform for communication of successful projects, best practices and lessons learned promoting implementation of eHealth solutions.

Innovation and test labs are highly interested in utilizing the labs at the moment for new solutions as they are boosting competitiveness through piloting and testing cases of innovations from companies. READi for Health regions organized international conferences

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like “Test Beds Facilities for Health innovation” to seed and foster the ecosystem collaboration and to support research and innovations from research activities.

There are benefits of the innovation and testing labs of each region. The testing and development environment will support the healthcare and social welfare in the regions as they provide an access to the latest medical technology products and systems. This in turn will increase the quality of healthcare and social welfare services, as well as make the services more affordable.

The ECHAlliance definition of an Ecosystem: An ecosystem is run on a geographical area (region or country), a permanent multi-stakeholders group committed to work together on a regular basis (4 meetings per year), in order to implement, within the health & social care system, innovative solutions targeting an improvement of the quality of health status and well-being of citizens, of the efficiency and the sustainability of the system and generating business activities growth and jobs creation. Since 2011, the ECHAlliance has developed, with the support of the European Commission, a methodology and approach on how to setup and manage ecosystems in more than 25 locations.

1.4.3 New private and public investments in RTD and Innovation

Several stakeholders in the READi for Health regions have been investing and are planning for investments in the infrastructure and development of innovation and services hubs.

- With the ambition to become Sweden’s leading region regarding development, provision and use of digital services within healthcare, the Region Skåne council has made the decision to financially support smart specialization of the region eHealth, e.g. research projects, establishment of test beds and innovation infrastructure for eHealth. Discussions are ongoing with national stakeholders.
- It has been noticed in practice that eHealth innovations and new eHealth services bring value for healthcare, so the healthcare and funding organisations are increasingly funding new innovation facilities and supportive activities for innovations. It is not only the healthcare processes but the infrastructure related to innovations that bring value e.g. in new hospital facilities and buildings.
- All kinds of data from different sources is being utilised more and more. The data and innovation can be combined together for creating new business e.g. concentrating on the big data and open API utilisation. Taken together this can support people who are the living in sheltered homes or in elderly residences.

1.4.4 Improvemnet of interoperability architecture and standards

Architecture and standards are defined mostly in European level and European interoperability ecosystem is very solid and effective. Ecosystem consists mainly of national governments´ officials. Regions’ possibility to influence in standards is very limited. Also development of cross-border services will be defined by national government, regions’ role at its best will be testing and implementation.

FHIR (Fast Healthcare Interoperability Resources) standards are based on open interfaces. FHIR process is managed by HL7 association in Finland. FHIR specifications and HL7 standards are basis for interoperability of registers and systems. In Finland this service layer is x-Road which has been developed in Estonia. First regional piloting has been made in Espoo and Lahti.

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Some other initiatives started within the framework of the READi for Health project are:

- Smart Specialisation Strategy platform (RIS3) meetings in Stockholm and Riga in autumn 2015 and there has been preliminary discussions of Baltic Sea eHealth interoperability project creation.
- Digital Single Market in Europe, Tallinn on 12 December 2015. Meeting was a starting point for Finnish-Estonian collaboration in CEF- programme. Estonia and Finland have both applied for two cross-border eHealth services: patient summary and e-recipe. Helsinki meeting was followed by Tallinn meeting in November 2015.
- Cross Border eHealth Architecture Meeting in Helsinki on 13 January 2016. Event was organized in collaboration with READi for Health project and Tallinn Tehnopol as a continuation for workshops held on 12-13 November 2015 way forwards in eHealth innovations and in digital single market creation. The event was a preliminary discussions of the development of cross-border services with Finland, Estonia, Sweden and Denmark. The target was to investigate the options and to speed up the transfer of electronic health data between the countries. As a result, Estonia and Finland applied for two cross-border eHealth services: patient summary and e-recipe.

Besides the action 4 Interoperability, also the other READi actions have worked indirectly towards the improvement of interoperability. Improvements in ICT are fundamental for interoperability. Weakly working and communicating technologies in care setting often result as loss of productivity or even harm to patients. Well working healthcare ICT will improve the care delivery ecosystem. Therefore, there is a need to improve the ICT which is a key enabler for better and interoperable care services.

Several READi for Health projects have aimed to improve the ICT in order to improve the interoperability, as well as the improve the chain of care services. For example, Kaista Käyttöön project, managed by Council of Oulu region, is aiming to develop and implement digital services. In addition, the READI Action 5 Big Data and Cloud related projects have aimed to improve the secure information access which in turn will benefit the interoperability. READi has worked to boost the ICT technology innovations. In addition, during the READi for Health, there has been ongoing national and regional eHealth and eSocial strategy projects, aiming to improve the interoperability and aiming to utilize the ICT in healthcare setting more efficiently.

READi has had role as a contact point between European processes' and regional stakeholders. READi has transferred information from most important European projects to municipalities and other public organizations and companies. Concrete procedure is implementation of National Service Architecture- process in Oulu Region. City of Oulu carried out Onion project [link] which has been influenced the national service architecture.

Societal impacts

Interoperability in eHealth has several societal impacts, including economic and social benefits. READi for Health has supported the idea that interoperable eHealth services will improve the patient safety and help with the risk management. READi for Health has emphasised that interoperable eHealth solutions support the patient centered approach and improve patient care. During the READi for Health, there has been projects such as Digital Health Revolution (DHR) aiming to improve MyData architecture which will allow citizens to control and use their own personal health data. Project like these, including "Health for Me" and "Medicine check", help citizens to develop and strengthen their own resources to participate in health and care. In addition, the ongoing national and regional project [7,16] will work towards a more patient centered approach in healthcare. Furthermore,

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interoperable eHealth services will help to utilize the health records and offer more personalized management of diseases, as well as improve the access to online health services, like the Vision eHealth 2025 in Sweden aims.

Interoperable eHealth solutions can keep care related costs manageable or even reduce costs, as well as create more market opportunities with a quicker go-to-market and lower integrations costs. However, well working eHealth architecture is needed in order to improve the interoperability. During the READi for Health, there has been projects in Sweden ja Finland working with the national eHealth strategy and architecture. Interoperability plays a role in the KaPA project which aims to create an interoperable digital service architecture. In addition, eHealth and eSocial strategy 2020 in Finland is offering information and support regarding well-functioning and interoperable eHealth structure. Furthermore, the cross-border projects between Finland and Estonia, for example, have worked as a starting point in developing the interoperability of eHealth services at the cross-border level.

1.4.5 Use of Big data in health

The research made around MyData gives guidance for companies that look for new business models and ways to comply with the tightening European level data protection regulations that will come into force in 2018 and that highlights giving more control over personal data to individuals themselves and create a high level data protection across Europe. (EUR-Lex 2016)

Furthermore, the research in DHR project on human-centered model in personal data management (e.g. Kemppainen, Koivuniemi & Saraniemi 2016) is expected to have an impact to companies' decision making in Oulu and guide the businesses towards human-centered model when developing new services based on individuals' data.

Health information security solution for individual-generated data - information exchange between external parties and healthcare. Project application to VINNOVA, "challenge-driven innovation program" planned to be submitted in August 2016, see Action 4 for details. Will provide opportunities for integration of patient-generated data in healthcare for research and the development of treatments and care.

Societal impact

The MIDAS project will deliver a big data based platform to assist healthcare policy makers with their processes of decision making and evaluation analysis of different options that shall maximise value creation in health care services and optimise processes. Data accuracy helps the decision makers to see the impact of their decisions from different perspective. The target of MIDAS project is to support decision makers to make the right decisions easier and more efficiently. Therefore, there is need to couple the real time data, with speed and with the right statistical tools and visualizations.

MyData principles have been successfully included in one of the spearheads (Digitalization of public services) of the Finnish Government Programme 2015.

The Digital Health Revolution -initiative promotes solution that future healthcare will allow citizens to control and make use of his or her personal data. The outcomes in the DHR program has affected a lot to Big Data and MyData architecture and discussions on how the data is used for services. The integration of the data has been started from DHR in its pilot

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programs with FIMM to have new fundamental understanding of the molecular, cellular and etiological basis of human diseases.

The MyData white paper [4] has been published from DHR program and READi has promoted the findings to have personal data management and processing in a human centric system, where the individual can access and control the data and future health care will allow citizens to control and make use of his or her personal data. New funding for innovation project "DOB" has been applied to support innovations from SMEs that shall utilise MyData in health care related solutions and services.

READi for Health partners' participation in MVD and the "connected scale" for heart failure patients has been used a successful eHealth example of what can be achieved through connectivity and cloud-based solutions in a Whitepaper written for the Swedish Government/Ministry of Enterprise and Innovation. The Whitepaper aims at getting national and regional funding for further strengthening Skåne as a national hub for connected Health/eHealth/mHealth through an establishment of a new R&D institute, an eHealth testbed as well as an international development environment in Skåne. Both READi for Health partners Region Skåne and Mobile Heights have contributed to this Whitepaper. This Whitepaper will be further addressed at a seminar at the Almedal Week in Visby, Sweden, a yearly nationwide event for politicians in July 2016.

Big data analysis of the data collected through the BIG3 project is expected to give valuable input to the research, prevention, treatment methods and care of patients suffering from COPD (Chronic Obstructive Pulmonary Disease), cardiovascular diseases and lung cancer.

The objective of Tag-On is to give Region Skåne means to increase flow efficiency and utilization of resources, further to decrease waiting time, optimize value creating time for patients and staff, and optimize reception and care.

1.4.6 Boosting the competitiveness of research-driven clusters through internationalisation

WP6 Internationalisation activities, in close conjunction with WP7 Communication, have promoted the regions as world-class clusters, providing prominent speaking and showcasing opportunities to an international audience, as well as disseminating outcomes and best practice throughout the consortium network and internationally.

These efforts, along with the signing of a number of Memoranda of Understanding between key partners abroad (CHT & Estonian Health Cluster, CHT & Oulu region & Medical Mountains Baden-Würtemberg) have led to the development of the regions as hubs in the international eHealth networks.

This higher visibility has contributed to the regions being invited to participate in other projects, conferences, academic research studies and fact findings. For example:

- Skåne partner, FoU-centrum Skåne, is the coordinator of the project proposal 'Developing effective personalised therapies for CKD through new patient-based approaches (TraCKD)'. The consortium involves partners from academia, healthcare, clinical trial management, business and innovation support in Sweden, UK, Spain and Ireland.

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- One of the READi SMEs, Engaging Care from Skåne region, was invited to Barcelona's largest primary care unit to demonstrate their patient empowerment platform 'My Life – My Health' [link]
- Representatives from Skåne and Oulu regions were invited to speak at the Digital Health Congress in London, November 30-1 December 2015 [link]
- As a cross-disciplinary actor in digital health innovation, the READi for Health partners were invited to participate in an innovation study/research visit at MIT Boston, May 27-29, 2015 organized by Lund University (LTH) and VINNOVA.
- Oulu was invited to join forces with the partners from Murcia in the FI-PPP project FICHe, an accelerator eHealth project. This resulted in Finnish companies participating and receiving grants for developing their solutions and business models. The project successfully concluded in June 2016 and as a result, an analysis on how to support companies towards internationalisation has been done and will be used to create further opportunities for the internationalisation of the companies.
- CHT (Oulu) was invited to be a partner in the MAGIC PCP project, which will seek solutions for post stroke treatment at home and will support Finnish companies to become involved in the bidding procedure.

Furthermore, the increased visibility provided by the READi project has had an impact more locally in each of the regions, with the local Administrations, Healthcare authorities and business stakeholders paying even more attention to the eHealth market and its potential. This is evidenced in higher turnover in the form of direct funding, regional RTD projects and better promotion of events.

For example, Business Oulu and the city of Oulu brought the OuluHealth ecosystem to the eHealth week 2016 in Amsterdam. At the OuluHealth stand, all ecosystem members had representatives, including eHealth companies and they had the opportunity to promote their solutions in an international audience and discuss future collaborations.

Also a DemoDate and the Innovation World Cup 2016 events were held at Oulu´s City Theatre on 4 May 2016. The DemoDate was a networking event that gathered about 50 exhibitors and 200 guests to get to know Oulu's hi tech products and find synergy and export progress, and the Innovation World Cup Conference 2016 brought together the giants of the Internet of Things and Wearables industry with innovative Finnish high-tech and life science companies.

Contribution to regional smart specialization

The transnational collaboration of clusters and their parent regions in the selected priorities, facilitated by the READi project, has harnessed RTDi efforts in synergy with the EU regional policy and the use of Structural Funds. The mutual learning and exchange of best practices across clusters has also contributed to an acceleration in the pace of the chosen specialization focus.

Reaching Far, going Deep: including more European regions

Through WP6 Internationalisation, the regions along with other actors have collaborated at an international level. Among other benefits, the network aims to encourage cluster initiatives in other regions, and promotes collaboration among the network nodes.

As part of internationalisation activities, the READi regions have also identified other regions with a less developed research profile, and have put in place a mentoring programme to

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support their capacity in setting up and developing regional research-driven clusters. More detail in READi mentoring report.

The READi project has recognised the challenge in Europe of slow uptake of ICT-based innovations, notably in areas of public interest and societal challenges. Uptake is hindered by weak and dispersed public RTDi efforts and by market fragmentation and dispersion of financing means for innovators.

The READi project has achieved impact at a European level by:

- Achieving critical mass. Traditionally, most clusters have operated at a regional level, thereby lacking a transregional and transnational dimension. The READi project adopted a consolidated European approach, and the market cross-communication and region complementarities achieved is helping to foster highly specialised and successful eHealth clusters, as well as opportunities on a larger scale.
- Contributing to citizen and patient mobility. The READi project has made concentrated efforts to develop eHealth innovation that will allow greater patient mobility and freedom by allowing their clinical information/ healthcare records to travel with them seamlessly and without language barriers. Connecting Europe Facility application between Estonia and Finland resulted from the Architecture discussions meeting held in Helsinki, January 2016.
- Promoting RTD sustainability. The READi project has supported the regions to increase their capacity for investing in research and development, thereby helping to improve their competitiveness and knowledge absorption capacities. The project has also supported SMEs in the regions to identify international opportunities. In Oulu region ERDF funding was directed to OuluHealth labs, which became an international test lab environment, providing opportunities for local and Finnish SMEs to test and showcase their products, as well as to SMEs from other places to test their solutions in the Finnish health system.
- Facilitating world-class knowledge production. The READi project has encouraged the development of transnational networks of regions and research-driven clusters to help maximize the region's potential, creating a dynamic environment that will attract and retain the best researchers in Europe e.g. CHESS, the Connected Health Programme received funding from the Marie Skłodowska-Curie program.
- Supporting synergetic funding. The READi project has recognised the limitations in regional resources and is supporting the regions to access national and European funding in order to cope with the fast globalisation of technology, e.g. the Nordic Test Beds project will give opportunities to the Nordic regions to act as a test environment for global solutions.

Connections to other on-going national and international research activities

The READi project has made a number of connections to other on-going national and EU projects, programmes and initiatives like:

- GET: EU project to provide eHealth SMEs with support services
- INCA: Social health care integration made easy for everyone
- SMARTCARE: ICT-supported integration of social and health care
- CHRODIS: addressing chronic diseases and healthy aging across the life cycle

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- EIP-AHA: European Innovation Partnership on Active and Healthy Ageing
- FICHe:
- Innovation Process in HealthTech Ecosystem -project (PoC)
- Digital Health Revolution (DHR): http://www.digitalhealthrevolution.fi/
- MAGIC PCP: http://ouluhealth.fi/

The project has also supported the regions to develop relationships with other cluster networks such as:

- eVIA – Spain http://ametic.es/es/innovacion/plataformas-tecnologicas/evia
- Cluj IT – Romania http://www.clujit.ro/en/
- Latvian Health Cluster – Latvia http://www.healthtravellatvia.lv/
- ISFTeH: International Society for Telemedicine and eHealth – Switzerland https://www.isfteh.org/
- BioPmed – Italy http://www.biopmed.eu/
- Tehnopol – Estonia http://www.tehnopol.ee/?lang=en
- Health SPA - Finland http://www.healthspa.fi/
- Pôle Solutions Communicantes Sécurisées (SCS) - France https://www.pole-scs.org/p%C3%B4le-scs/pr%C3%A9sentation
- HealthClusterNet – Norway http://healthclusternet.eu/
- Medical Valley - Germany http://www.medical-valley-emn.de/
- OuluHealth - Oulu region http://ouluhealth.fi/

1.4.7 Introduction of new private and public investments in RTD and Innovation

In order to increase awareness raising, as a starting point, best practice exchange, briefings to political decision makers, training have been facilitated. E.g. a PCP workshops and meetings were organised in Murcia and in Oulu including relevant experiences from other regions and an educational seminar on PCP and PPI was organised in Skåne. This has had a twofold impact: on one hand has allowed to set the ground for future actions building capacity for procurers and, in the other hand, has created working groups of different stakeholders at a regional and European level that will facilitate the procurement process for PCP and PPI.

Also, READi for Health has been able to set up new public-private partnerships, either on joint Pre-Commercial Procurement initiatives where risks and opportunities are shared between public and private investors, supported by EU funding. 4 PCP actions, MAGIC, SILVER, THALEA and ProEmpower, have been at least promoted or launched as a consequence of READI for Health actions.

The established network of contacts between the regions and the ECHAlliance network also serves as good foundation for future project collaborations and mentoring (sharing best practice) regarding procurement of innovations.

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READi for Health has worked in the identification of needs (WP3) and PCP topics: stroke, elderly living, ICU for acute treatment and diabetes, has been derived from the priorities identified in the Regional Digital Agendas, and have been co-funded with the own resources of regional Public Authorities in charge of Healthcare and/or business development.

One of the biggest outcomes of the READi for Health is the creation of wide networks of procurers and specialist in Healthcare that gives a wide overview of the opportunities that procurement of innovation can bring. The network for innovation and procurement has grown both regionally, nationally and internationally in the discussions, seminars and other events happening around PCP/PPI.

1.4.8 Capacity building: Identification of required knowledge areas

Each READi for Health region has been able to set up new partnerships and collaborations in the field of capacity building, both with other healthcare institutions, as well as with patient groups, eHealth innovators, SMEs and academics. The identification of the required knowledge areas and joint work of the members of multifunctional groups has allowed to develop innovative projects and launched regional initiative with a clear benefit for citizens.

Through the education and learning pilot program, which included use of new eHealth tools and innovative solutions, and as well the ICT health systems training, the medical students in Oulu Region as a future health professionals are improving their understanding on how ICT can be used to support health to provide more efficient care. They will be more capable of teaching and supporting their patients in using technology for their healthcare and to increase the personalization of health services.

The development of education programmes, specifically the school of health in Region of Murcia and the digital patient empowerment platform in Region Skåne focused on increasing health literacy improves an individual's access to information and their ability to effectively use it – empowering them to be actively involved in their health because they can search for and understand health information easier than those who are not. This translates to real benefits for both regional health systems because individuals are able to play a more active role in improving their own health and well-being, utilizing preventive health services and understanding their conditions and expected effects of treatments.

The digital patient empowerment platform "My Life - My Health" in Skåne is developed to be easily scalable both nationally and internationally to support organ recipients and patients with other chronic disease. The platform offers a high added value based on knowledge sharing, responding to the greatest challenge in up-scaling good initiatives towards a successful implementation in other areas (illness) and different regions.

1.5 The address of the project public website, if applicable as well as relevant contact details.

http://www.readiforhealth.eu/

Full contact details con be found at http://www.readiforhealth.eu/contact/

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- Jorge González, Managing Director at TICBioMed
- Myriam Martín, Project Manager at TICBioMed
- Lola Salinas, Communications Manager at TICBioMed

- María del Pilar López Acuña, Fundación para la Formación e Investigación Sanitarias de la Región de Murcia

- Ann Tronde, Project leader eHealth at Skåne University Hospital

- Stefan Berggren, Project Manager at Mobile Heights

- Anna Sachinopoulou, Coordinator at the Center for Health and Technology (University of Oulu)
- Jarmo Pääkkönen, Project Coordinator at University of Oulu, Centre for Health and Technology
- Kalevi Virta, Coordinator at Centre for Health and Technology, Oulu
- Kukka Haapaniemi, Communications Specialist at Centre for Health and Technology

- Mikko Räisänen, Manager for Research and Development at Council of Oulu Region
- Nina-Maria Nissinen, Student at Lund University Faculty of Medicine

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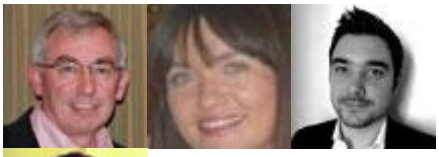

- Damian O'Connor, Operations Director at European Connected Health Alliance
- Paula Dougan, Operations Manager at European Connected Health Alliance
- Julien Venne, Strategic Advisor at European Connected Health Alliance
- Beatriz Sanz, Event Manager at European Connected Health Alliance

- Tanya Suárez, Director Madrid Office at Daleph

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2 USE AND DISSEMINATION OF FOREGROUND

This section describes a plan for the use and dissemination of foreground for the READi for Health project.

2.1 Section A

This section includes (A.1) a list of scientific peer reviewed publications relating to the foreground of the READi for Health project and (A.2) a list of all dissemination activities executed and planned (publications, conferences, workshops, web sites/applications, press releases, flyers, articles published in the popular press, videos, media briefings, presentations, exhibitions, thesis, interviews, films, TV clips, posters).

Template A1: List of Scientific (peer reviewed) publications

NO.	Title	Main author	Title of the periodical or the series	Number, date or frequency	Publisher	Place of publication	Year of publication	Relevant pages	Permanent identifiers[13] (if available)	Is/Will open access[14] provided to this publication?
1	"Qualitative analysis for action prioritization for the implementation of innovative technologies in the health sector"	FFIS	EU-SPRI - Innovation policies for economic and social transitions: Developing strategies for knowledge, practices and institutions. The Abstract can be found from the Book of Abstracts publication ISBN 978-951-38-8317-1 http://www.vttresearch.com/impact/publications	The Book of Abstracts VTT Technology : 221 VTT, 2015	VTT TECHNICAL RESEARCH CENTRE OF FINLAND LTD	Helsinki, Finland	2015	p244-245	ISBN 978-951-38-8317-1	Yes

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Template A2: List of dissemination activities

NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
1	READi website	ECHAlliance	Dissemination of general project information & news	Ongoing	Online	Mix	9000+ website visitors & 23.5k page views since Nov 2013	Europe
2	READi website	ECHAlliance	SME Resources – market info, commercial opportunities	Ongoing	Online	Mix		Europe
3	READi website	ECHAlliance	SME Showcase – innovation, target markets, opportunities	Ongoing	Online	Mix		Europe
4	READi website	ECHAlliance	Region Showcase – achievements, priorities, target markets	Ongoing	Online	Mix		Europe
5	READi website	ECHAlliance	Resources - Reports	Ongoing	Online	Mix		Europe
6	READi website	ECHAlliance	Achievements – project achievements in reach Action area	Ongoing	Online	Mix		Europe
7	READi website	ECHAlliance	News – compilation of project news & announcements	Ongoing	Online	Mix		Europe
8	READi website	ECHAlliance	Events – list of events past and upcoming	Ongoing	Online	Mix		Europe
9	Social Media	ECHAlliance	READi project Twitter	Ongoing	Online	Mix	226 followers	Europe
10	Social Media	ECHAlliance	READi project Linked In	Ongoing	Online	Mix	72 members	Europe
11	Social Media	ECHAlliance	READi project Vimeo	Ongoing	Online	Mix	Webinars watched 124 times	Europe
12	Social Media	ECHAlliance	READi project Flickr	Ongoing	Online	Mix	107 views	Europe
13	Emails	ECHAlliance	Daily/ weekly news mailings – disseminated by email to project network	Ongoing	Online	Mix	Wider network of consortium partners	International
14	Emails	ECHAlliance	To READi SMEs	Ongoing	Online	SMEs	11	Europe
15	Print materials	ECHAlliance	Flyers, roll up stand and poster – for dissemination at events	Ongoing	Online	Mix	All events	International
16	Webinar	ECHAlliance	Insights into the US eHealth market	17 August 2016	Online	Mix	48 registered; 29 plays on Vimeo since.	International

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NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
17	Webinar	ECHAlliance	Insights into the UK eHealth market	6 July 2016	Online	Mix	60 registered; 37 plays on Vimeo since.	Europe
18	White Paper	Region Skane & Mobile Heights	Contribution to Regional Whitepaper "En nationell nod för m-hälsa och digitalisering i Skåne" aimed at getting national and regional funding for further strengthening Skåne as a national hub for connected Health/eHealth/mHealth through an establishment of a new R&D institute, an eHealth testbed as well as an international development environment in Skåne.	June/July 2016	Paper based	Mix	Unknown	Sweden
19	Publication	Region Skane	Report on R&D, Smart specialization and PCP (D5.7 READi project). Available for download at http://www.readiforhealth.eu/resources-reports/	2016	Online	MIx	Unknown	Europe
20	Seminar	Mobile Heights	Readi Seminar at Politician Week in Almedalen: "How can a national node for connected health, strengthen public health and create new businesses?"	3 July 2016	Visby, Sweden	Mix	100	Sweden
21	Workshop	ECHAlliance	READi for Health Workshop @ eHealth week 2016	8-10 June 2016	Amsterdam, Netherlands	Mix	2,100+ at eHealth Week	Europe
22	Workshop	TBM & FFIS	New technologies in chronicity and outpatient care. Telemedicine and other uses of ICT	25 May 2016	Santiago de Compostela, Spain	Health Executives	15	Spain

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NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
23	Event	CHT	Finnish Healthcare ICT Technology Conference	24-25 May 2016	Lahti - Finland	ICT stakeholders from different Finnish regions, cities, municipalities, enterprises and research organisations	1300+	Finland
24	Webinar	ECHAlliance	Innovative Business Models to support e-Health opportunities	24 May 2016	Online	Mix	51 registered; 51 plays on Vimeo since.	Europe
25	Event	FFIS	Health 2.0 Europe 2016	10-12 May 2016	Barcelona	Mix	500+	Europe
26	Blog post	Pohjois-Pohjanmaan liitto, Council of Oulu Region	Coverage of the READi for Health survey on the introduction of digital systems and services in health care: "READi for Health-hankkeessa voidaan hyödyntää muiden kokemuksia ja onnistumisia", in Kaleva Newspaper in Oulu (Local) Web version:	21 April 2016	Oulu, Finland	Mix	[Do we know?]	Finland
27	Seminar	CHT	Future Connected Health	13 April 2016	Oulu, Finland	Mix - international	82	Finland
28	Presentation	FFIS	VIII National Congress of Chronic Patient Health Care/III Active Patient National Conference	7-8 April 2016	Madrid, Spain	Patients, industry and healthcare providers	[Do we know?]	Europe
29	Article published	FoU-centrum Skåne	Supplement "DI Healthcare" to the Swedish business paper Dagens Industri - article published showcasing Skane region and the READi project	1 April 2016	Skane, Sweden	Politics, health and social care and life science stakeholders	308,000 readers weekly	Sweden

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NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
30	Article Published	CHT	Coverage of the testing by Oulu medical students of eHealth solutions at Oulu University Hospital´s OYS TestLab. Article published: "Lääkäriopiskelijat vauhdittavat terveydenhuollon digiloikkaa", in Finnish National News, Yle (Yleisradio, Finnish Broadcasting Company) Link	30 March 2016	Finland	Mix	Yle is Finland's national public service broadcasting company.	Finland
31	Article Published	CHT	Article published on the testing by Oulu medical students of eHealth solutions at Oulu University Hospital´s OYS TestLab, "Lääkäriopiskelijat testaavat uusia digitaalisen terveydenhoidon ratkaisuja Oulussa", by University of Oulu Link	30 March 2016	Finland	Mix	Unknown	Finland
32	Workshop	Region Skane	Internationalization Opportunities in e-Health	2 March 2016	Lund, Sweden	Mix	24	International
33	Event	ECHAlliance	Digital Health & Wellness @ Mobile World Congress	22-25 February 2016	Barcelona	Mix	400+	International
34	Editorial published	Region Skane	Editorial published in Life Science in Sweden 2015/2016, Horn Forlag AS: "Medicon Village and regional stakeholders on mobilizing the benefits of eHealth for all" (collaboration between Medicon Village and the READi project).	Date?	Sweden	Mix	Do we know?]	Sweden
35	Master Degree thesis	Region Skane	"Innovation in Healthcare", Master Thesis by Oskar Fällman-Karlsson, Department of Industrial Engineering and Management, Lund University, LTH, Lund Sweden (supervisor Ann Tronde, READi for Health)	2015/2016	Lund, Sweden	Academic	Do we know?]	Sweden

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NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
36	Article published	Region Skane	"European collaboration for eHealth - tailor support using healthcare as the engine for innovation". Published in "Sveriges Kommuner och Landsting" (Swedish Association of Local Authorities and Regions) Link	Date?	Sweden	Mix	Do we know?]	Sweden
37	Article published	Region Skane	"READi for Health strengthen Skåne's position as a strategic eHealth cluster" (Dagens Nyheter/Dagens Samhälle (national newspaper)) and Innovation för Vård och Omsorg. Link	Date?	Sweden	Mix	Do we know?]	Sweden
38	Workshop	[???]	REGPOT and ROK Workshop organised by DG Research & Innovation	7 December 2015	Brussels, Belgium	[Do we know?]	[Do we know?]	Europe
39	Workshop	TBM & FFIS	R & D policies in healthcare	3-4 December 2015	Santiago de Compostela, Spain	Mix	[Do we know?]	Spain – cross regional
40	Workshop	CHT	Amazon eHealth Framework workshop	30 November 2015	Espoo, Finland	Mix - international	24	Finland & Brazil
41	Workshop	TBM	eafip for Health and Elderly Care Sector Procurers Workshop	24 November 2015	Manchester, UK	EU public procurers	40	Europe
42	Article published	Mobile Heights	"Sydsvenska Dagbladet" Newspaper – article published about the new innovative interactive digital platform in Region Skåne - "My Life - My Health"	23 November 2015	Skane, Sweden	Mix including general public	Largest daily newspaper in Skane	Sweden

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NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
43	Workshop	ECHAlliance	eHealth Strategy Group workshop	13 November 2015	Estonia	Senior stakeholders, with responsibility for developing, implementing or redesigning their "eHealth Strategy"	24	Europe (mainly Estonia, Finland, Spain, Scotland, Ireland, Switzerland, France, and Denmark)
44	Article published	Region Skane	"eHealth project in Skåne will help organ recipients", Sydsvenskan 8 till 5 (regional newspaper) Link	10 November 2015	Skane, Sweden	Mix	Do we know?]	Sweden
45	Workshop	TBM & FFIS	EU-WISE Regional Workshop	16 October 2015	Murcia, Spain	Mix	[Do we know?]	UK, Netherlands, Bulgaria, Greece, Norway, Ireland, Spain.
46	Meeting	READi team	READi meeting with French delegation from the project HEALTH2CARE in Rhône-Alpes.	13 October 2015	Lund, Sweden	Mix	[Do we know?]	Sweden, France
47	Article published	Region Skane	"eHealth project in Skåne will promote safe eHealth apps", Sydsvenskan 8 till 5 (regional newspaper) Link	9 October 2015	Sweden	Mix	Do we know?]	Sweden
48	Article published	Mobile Heights	"Sydsvenska Dagbladet" Newspaper - article published about the "eHealth on prescription" in Region Skåne	9 October 2015	Skane, Sweden	Mix including general public	Largest daily newspaper in Skane	Sweden
49	Event	Daleph	READi presentation at the "Startup Europe Comes to the Regions - SEC2R"	1 October 2015	Brussels, Belgium	SMEs	[Do we know?]	Europe, especially regions

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NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
50	Article published	CHT	Article published on READi project, "Centre for Health and Technology - yksilön terveyden ja hyvinvoinnin ytimessä", in Kauppalehti, Finnish Business Newspaper Electronic version	29 September 2015	Finland	Mix	[Do we know?]	Finland
51	Workshop	FoU-centrum Skåne	eHealth Workshop by Swedish eHealth Authority in collaboration with Region Skåne	28 September 2015	Medicon Village Lund	Mix	[Do we know?]	Sweden
52	Event	ECHAlliance	EU Marketplace for eHealth & EIP on AHA	22 September 2015	Brussels, Belgium	Mix	180+	International
53	Workshop	READi partners	Horizon2020 Workshop	15 September 2015	Oulu, Finland	Mix - international	15	Europe
54	Presentation	FoU-centrum Skåne	Presentation to Vinnova - READi project results and prioritised actions to promote digital health.	2 September 2015	Stockholm, Sweden	Vinnova general manager, the head of the department of health at Vinnova, and responsible administrators.	Do we know?]	Sweden
55	Workshop	Region Skane	Cross-regional workshop to explore opportunities to establish a European Smart Specialization Platform for mHealth – READi project presented.	25 August 2015	Lund, Sweden	Mix	c.15	Spain, Sweden
56	Event	ECHAlliance	Digital Health Summit @Mobile World Congress Shanghai	14-17 July 2015	Shanghai, China	Mix	250+	China & International
57	Event	TBM	Annual Meeting of the Regional Coalition of Active and Healthy Ageing	July 2015	Murcia, Spain	Mix	[Do we know?]	Murcia, Spain

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NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
58	Event	FoU-centrum Skåne	Regional HotSpot event: "Digital Health in an Analogue World" - READi for Health project presented	16 June, 2015	Medicon Village, Sweden	Mix	c.30	Sweden
59	Event	FFIS	35º Congreso de la SEMFYC (Spanish Society of Family and Community Medicine) Poster presented: "La incorporación de las nuevas tecnologías (TICs) en patologías crónicas. Análisis cualitativo para la priorización de su implantación"	11 - 13 June 2015	Gijón, Spain	Mix	[Do we know?]	Spain
60	Research Visit	FoU-centrum Skåne	"VINNOVA and LTH @MIT - User-driven innovation and collaboration (& networking) between industry and academy" - READi presentation	27-29 May 2015	MIT Boston, USA	Mix	Do we know?]	International
61	Meeting	Mobile Heights	Multi-functional WG meeting to plan implementation of the READi JAP – interoperability.	19 May, 2015	Where?	Cross-disciplinary stakeholders	10-15	Sweden
62	Presentation	ECHAlliance	READi for Health @ Speakers' Corner @ eHealth week 2015	11-13 May 2015	Riga, Latvia	Mix	1,300	Europe
63	Meeting	FoU-centrum Skåne	VINNOVA meeting in to collect experience from EU project teams and to promote participation in European projects.	21 April 2015	Brussels, Belgium	Mix	[Do we know?]	Europe
64	Event	ECHAlliance	Northern Ireland Connected Health Ecosystem – Medicines Optimization	25 March 2015	Belfast, Northern Ireland	Industry, academia, healthcare providers	190	UK
65	Seminar	Mobile Heights	Seminar on PCP and PPI tailored for the multifunctional working groups – organized by READi and lecture was provided by Clin Trials Skåne.	19 March 2015	Lund, Sweden	Mix	[Do we know?]	Sweden

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NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
66	Meeting	Mobile Heights	Multi-functional WG meeting to plan implementation of READi JAP - ICT 2015).	16 March, 2015	Where?	Cross-disciplinary stakeholders	10-15	Sweden
67	Meeting	Mobile Heights	Multi-functional WG meeting to plan implementation of READi JAP - PCP/PPI & Internationalization	15 March, 2016	Where?	Cross-disciplinary stakeholders	10-15	Sweden
68	Event	ECHAlliance	European Summit on Innovation for Active and Healthy Aging	9-10 March 2015	Brussels, Belgium	Industry, consumers, patients, researchers, service-providers, investors & SMEs	1200+	Europe
69	Event	ECHAlliance	Health & Wellness @ Mobile World Congress 2015	3-4 March 2015	Barcelona, Spain	Mix	380+	International
70	Meeting	Region Skane	Region Skåne Corporate eHealth Board	25 February 2015	Malmö, Sweden	Mix	Do we know?	Sweden
71	Poster presented	FFIS	"Barreras en la implantación de las TICs en la cronicidad. Un estudio cualitativo con líderes sanitarios", XVIII Congreso de la Sociedad Española de Informática de la Salud - Infors@lud	16-18 February 2015	Madrid, Spain	Mix	Do we know?	Spain
72	Event	READi partners	Health IT Conference	16 February 2015	Copenhagen, Denmark	Mix	Do we know?	Europe
73	Publication	Region Skane	"eHealth in Skane", published by LIFE SCIENC E FORESIGHT INSTITUTE for Invest in Skane. The READi for Health team in Skåne was interviewed for the report and the data is based on findings in the READi for Health project. REPORT ID: 2014-013	February 2015	Sweden	Mix	Do we know?	Sweden

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NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
74	Event	Region Skane	eHealth in Skåne - See the needs - grasp the opportunities	4 December 2014	Lund, Sweden	Mix	c.80	Sweden
75	Visit	READi partners	Mentoring Regions Visit – to Extremadura (Spain)	28-29 October 2014	Extremadura, Spain	Mix	[Do we know?]	Extremadura, Spain
76	Workshop	READi partners	Dedicated half-day at eHealth priorities, organized in conjunction 12th European Week of Regions and Cities (6-9 October 2014)	8 October 2014	Brussels, Belgium	Mix	Do we know?	Europe
77	Article published	Region Skane	"Medicon Village support efforts in eHealth", Regional Life Science Cluster Link	2 October 2014	Sweden	Mix	Do we know?	Sweden
78	Workshop	CHT	Information on health sector EU direct funding	30 September 2014	Oulu, Finland	Mix	51	Europe
79	Seminar	ECHAlliance	Personalised Medicine - applications and opportunities	9 September 2014	Tallinn, Estonia	Mix	[Do we know?]	Europe
80	Visit	READi partners	Mentoring Regions Visit – to Tallinn (Estonia)	8 September 2014	Tallinn, Estonia	Mix	[Do we know?]	Tallinn, Estonia
81	Event	Region Skane	Digital Health days - Invest in Skåne in partnership with READi for Health promoted eHealth companies and entrepreneurs in Skåne and arranged a networking activity. The companies presented their business via digital screens in the exhibition area of the conference. Link Target group: Digital | Health Days – where ICT meets life science and healthcare to shape the future	25-26 August 2014	Skane	Mix	[Do we know?]	Skane, Sweden

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NO.	Type of activities[15]	Main leader	Title	Date/Period	Place	Type of audience[16]	Size of audience	Countries addressed
82	Event	CHT	OuluHealth Ecosystem meeting, 'Nightless Nights'	10 June 2014	Oulu, Finland	Mix	180+	International
83	Event	READi partners	READi for Health project – kick off meeting in Skane Region	24 April 2014	Skane, Sweden	Mix	c.130	Sweden
84	Workshop	Region Skane	"Innovate Skane" - An active and collaborative workshop focusing on eHealth services and products. Link	6 April 2014	Malmo, Sweden	Mix	Do we know?]	Sweden
85	Event	READi partners	READi for Health project – kick off meeting in Oulu Region	29 January 2014	Oulu, Finland	Mix	Do we know?]	Finland
86	Training Session	READi partners	"Need identification training session"	28-29 January 2014	Murcia, Spain	Mix	Do we know?]	Europe
87	Training Session	READi partners	Training sessions for needs identification - "Somos pacientes event"	27 November 2013	Madrid, Spain	Mix	Do we know?]	Europe
88	Event	Centre eSante	READi for Health launch event	13 November 2013	France	Government, research, industry and academia	100+	Europe
89	Event	READi partners	READi for Health project – kick off meeting in Murcia Region	2 October 2013	Murcia, Spain	Mix	Do we know?]	Spain

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2.2 Section B

This section presents the exploitable foreground from the READi project (B.2) and provides the plans for exploitation.

No applications for patents, trademarks or registered designs etc have been made, therefore Template B.1 is not applicable.

Template B1: List of Applications for Patents, Trademarks, Registered Designs etc

Type of IP Rights18:	Confidential Click on YES/NO	Foreseen embargo date dd/mm/yyyy	Application reference(s) (e.g. EP123456)	Subject or title of application	Applicant (s) (as on the application)
Planned - Trade Mark registration		Date unknown - application for Trade Mark in preparation.	Application in preparation.	Registration of Trade Mark for logo and name of "My Life – My Health" project.	Application currently being prepared to register a Trade Market for the logo and name of the "My Life – My Health" project. We have developed a project proposal for project development and testing, and we have applied for funding to to VINNOVA (10 million SEK from VINNOVA and 14 million in kind funding from project partners). Decision from Vinnova expected mid-November 2016.

Template B2: Exploitable Foreground

Not applicable

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3 REPORT ON SOCIETAL IMPLICATIONS

Replies to the following questions will assist the Commission to obtain statistics and indicators on societal and socio-economic issues addressed by projects. The questions are arranged in a number of key themes. As well as producing certain statistics, the replies will also help identify those projects that have shown a real engagement with wider societal issues, and thereby identify interesting approaches to these issues and best practices. The replies for individual projects will not be made public.

A General Information (completed automatically when Grant Agreement number is entered.	
Grant Agreement Number:	GA 320021
Title of Project:	REGIONAL DIGITAL AGENDAS FRO HEALTHCARE
Name and Title of Coordinator:	JORGE GONZALEZ OLALLA TICBioMed manager

B Ethics	
1. Did your project undergo an Ethics Review (and/or Screening)? If Yes: have you described the progress of compliance with the relevant Ethics Review/Screening Requirements in the frame of the periodic/final project reports? Special Reminder: the progress of compliance with the Ethics Review/Screening Requirements should be described in the Period/Final Project Reports under the Section 3.2.2 *'Work Progress and Achievements'*	No
2. Please indicate whether your project involved any of the following issues (tick box) :	None
RESEARCH ON HUMANS	
· Did the project involve children?	
· Did the project involve patients?	
· Did the project involve persons not able to give consent?	
· Did the project involve adult healthy volunteers?	
· Did the project involve Human genetic material?	
· Did the project involve Human biological samples?	
· Did the project involve Human data collection?	
RESEARCH ON HUMAN EMBRYO/FOETUS	
Did the project involve Human Embryos?	
Did the project involve Human Foetal Tissue / Cells?	
Did the project involve Human Embryonic Stem Cells (hESCs)?	
Did the project on human Embryonic Stem Cells involve cells in culture?	
Did the project on human Embryonic Stem Cells involve the derivation of cells from Embryos?	
PRIVACY	

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· Did the project involve processing of genetic information or personal data (eg. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)?	
· Did the project involve tracking the location or observation of people?	
RESEARCH ON ANIMALS	
· Did the project involve research on animals?	
· Were those animals transgenic small laboratory animals?	
· Were those animals transgenic farm animals?	
· Were those animals cloned farm animals?	
· Were those animals non-human primates?	
RESEARCH INVOLVING DEVELOPING COUNTRIES	
· Did the project involve the use of local resources (genetic, animal, plant etc)?	
· Was the project of benefit to local community (capacity building, access to healthcare, education etc)?	
DUAL USE	
· Research having direct military use	
· Research having the potential for terrorist abuse	

C Workforce Statistics

3. Workforce statistics for the project: Please indicate in the table below the number of people who worked on the project (on a headcount basis).

Type of Position	Number of Women	Number of Men
Scientific Coordinator	1	
Work package leaders	5	3
Experienced researchers (i.e. PhD holders)	5	4
PhD Students	2	
Other		

4. How many additional researchers (in companies and universities) were recruited specifically for this project?	**0**
Of which, indicate the number of men:	

D Gender Aspects

5. Did you carry out specific Gender Equality Actions under the project?		No

6. Which of the following actions did you carry out and how effective were they?

		Not at all effective		Very effective
❑	Design and implement an equal opportunity policy	○	○	○
❑	Set targets to achieve a gender balance in the workforce	○	○	○
❑	Organize conferences and workshops on gender	○	○	○
❑	Actions to improve work-life balance	○	○	○
○	Other:			

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7. Was there a gender dimension associated with the research content - i.e. wherever people were the focus of the research as, for example, consumers, users, patients or in trials, was the issue of gender considered and addressed?			
	○ Yes- please specify		
	X No		
E Synergies with Science Education			
8. Did your project involve working with students and/or school pupils (e.g. open days, participation in science festivals and events, prizes/competitions or joint projects)?			
	○ Yes- please specify		
	X No		
9. Did the project generate any science education material (e.g. kits, websites, explanatory booklets, DVDs)?			
	○ Yes- please specify		
	X No		
F Interdisciplinarity			
10. Which disciplines (see list below) are involved in your project?			
	○ Main discipline[1]:		
	○ Associated discipline[1]:	○	Associated discipline[1]:
G Engaging with Civil society and policy makers			
11. a Did your project engage with societal actors beyond the research community? *(if 'No', go to Question 14)*		x	Yes
11b If yes, did you engage with citizens (citizens' panels / juries) or organized civil society (NGOs, patients' groups etc.)?			
	○ No		
	x Yes- in determining what research should be performed		
	○ Yes - in implementing the research		
	x Yes, in communicating /disseminating / using the results of the project		
11c In doing so, did your project involve actors whose role is mainly to organize the dialogue with citizens and organized civil society (e.g. professional mediator; communication company, science museums)?		x	No
12. Did you engage with government / public bodies or policy makers (including international orgs)			
	○ No		
	x Yes- in framing the research agenda		
	x Yes - in implementing the research agenda		
	x Yes, in communicating /disseminating / using the results of the project		
13. a Will the project generate outputs (expertise or scientific advice) which could be used by policy makers?			
	x Yes - as a **primary** objective (please indicate areas below- multiple answers possible)		
	○ Yes - as a **secondary** objective (please indicate areas below - multiple answer possible)		

[1] Insert number from list below (Frascati Manual).

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○ No	

13b If Yes, in which fields?

Agriculture		Energy		Human rights	
Audiovisual and Media		Enlargement		Information Society	
Budget		Enterprise		Institutional affairs	
Competition		Environment		Internal Market	
Consumers		External Relations		Justice, freedom and security	
Culture		External Trade		Public Health	
Customs		Fisheries and Maritime Affairs		Regional Policy	
Development Economic and Monetary Affairs		Food Safety		Research and Innovation	
Education, Training, Youth		Foreign and Security Policy		Space	
Employment and Social Affairs		Fraud		Taxation	
		Humanitarian aid		Transport	

13c If Yes, at which level?

x	Local / regional levels
x	National level
x	European level
○	International level

H Use and dissemination

14. How many Articles were published/accepted for publication in peer-reviewed journals?	1
To how many of these is open access[2] provided?	1
How many of these are published in open access journals?	
How many of these are published in open repositories?	
To how many of these is open access not provided?	
Please check all applicable reasons for not providing open access:	
❑ publisher's licensing agreement would not permit publishing in a repository ❑ no suitable repository available ❑ no suitable open access journal available ❑ no funds available to publish in an open access journal ❑ lack of time and resources ❑ lack of information on open access ❑ other[3]: ……	
15. How many new patent applications ('priority filings') have been made? ("Technologically unique": multiple applications for the same invention in different jurisdictions should be counted as just one application of grant).	**1**

[2] Open Access is defined as free of charge access for anyone via Internet.

[3] For instance: classification for security project.

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16. Indicate how many of the following Intellectual Property Rights were applied for (give number in each box).	Trademark	0
	Registered design	0
	Other	0

17. How many spin-off companies were created / are planned as a direct result of the project?	0
Indicate the approximate number of additional jobs in these companies:	

18. Please indicate whether your project has a potential impact on employment, in comparison with the situation before your project:

❑	Increase in employment, or	❑	In small & medium-sized enterprises
❑	Safeguard employment, or	❑	In large companies
❑	Decrease in employment,	x	None of the above / not relevant to the project
x	Difficult to estimate / not possible to quantify		

19. For your project partnership please estimate the employment effect resulting directly from your participation in Full Time Equivalent (*FTE = one person working fulltime for a year*) jobs:	*Indicate figure:*
Difficult to estimate / not possible to quantify	

I Media and Communication to the general public

20. As part of the project, were any of the beneficiaries professionals in communication or media relations?

○ Yes x No

21. As part of the project, have any beneficiaries received professional media / communication training / advice to improve communication with the general public?

○ Yes x No

22. Which of the following have been used to communicate information about your project to the general public, or have resulted from your project?

x	Press Release	x	Coverage in specialist press
x	Media briefing	❑	Coverage in general (non-specialist) press
x	TV coverage / report	x	Coverage in national press
❑	Radio coverage / report	❑	Coverage in international press
x	Brochures /posters / flyers	x	Website for the general public / internet
❑	DVD /Film /Multimedia	x	Event targeting general public (festival, conference, exhibition, science café)

23. In which languages are the information products for the general public produced?

x	Language of the coordinator	x	English
x	Other language(s)		

Question F-10: Classification of Scientific Disciplines according to the Frascati Manual 2002 (Proposed Standard Practice for Surveys on Research and Experimental Development, OECD 2002):

FIELDS OF SCIENCE AND TECHNOLOGY

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1. NATURAL SCIENCES

1.1 Mathematics and computer sciences [mathematics and other allied fields: computer sciences and other allied subjects (software development only; hardware development should be classified in the engineering fields)]

1.2 Physical sciences (astronomy and space sciences, physics and other allied subjects)

1.3 Chemical sciences (chemistry, other allied subjects)

1.4 Earth and related environmental sciences (geology, geophysics, mineralogy, physical geography and other geosciences, meteorology and other atmospheric sciences including climatic research, oceanography, vulcanology, palaeoecology, other allied sciences)

1.5 Biological sciences (biology, botany, bacteriology, microbiology, zoology, entomology, genetics, biochemistry, biophysics, other allied sciences, excluding clinical and veterinary sciences)

2 ENGINEERING AND TECHNOLOGY

2.1 Civil engineering (architecture engineering, building science and engineering, construction engineering, municipal and structural engineering and other allied subjects)

2.2 Electrical engineering, electronics [electrical engineering, electronics, communication engineering and systems, computer engineering (hardware only) and other allied subjects]

2.3. Other engineering sciences (such as chemical, aeronautical and space, mechanical, metallurgical and materials engineering, and their specialised subdivisions; forest products; applied sciences such as geodesy, industrial chemistry, etc.; the science and technology of food production; specialised technologies of interdisciplinary fields, e.g. systems analysis, metallurgy, mining, textile technology and other applied subjects)

3. MEDICAL SCIENCES

3.1 Basic medicine (anatomy, cytology, physiology, genetics, pharmacy, pharmacology, toxicology, immunology and immunohaematology, clinical chemistry, clinical microbiology, pathology)

3.2 Clinical medicine (anaesthesiology, paediatrics, obstetrics and gynaecology, internal medicine, surgery, dentistry, neurology, psychiatry, radiology, therapeutics, otorhinolaryngology, ophthalmology)

3.3 Health sciences (public health services, social medicine, hygiene, nursing, epidemiology)

4. AGRICULTURAL SCIENCES

4.1 Agriculture, forestry, fisheries and allied sciences (agronomy, animal husbandry, fisheries, forestry, horticulture, other allied subjects)

4.2 Veterinary medicine

5. SOCIAL SCIENCES

5.1 Psychology

5.2 Economics

5.3 Educational sciences (education and training and other allied subjects)

5.4 Other social sciences [anthropology (social and cultural) and ethnology, demography, geography (human, economic and social), town and country planning, management, law, linguistics, political sciences, sociology, organisation and methods, miscellaneous social sciences and interdisciplinary , methodological and historical S1T activities relating to subjects in this group. Physical anthropology, physical geography and psychophysiology should normally be classified with the natural sciences].

6. HUMANITIES

6.1 History (history, prehistory and history, together with auxiliary historical disciplines such as archaeology, numismatics, palaeography, genealogy, etc.)

6.2 Languages and literature (ancient and modern)

6.3 Other humanities [philosophy (including the history of science and technology) arts, history of art, art criticism, painting, sculpture, musicology, dramatic art excluding artistic "research" of any kind, religion, theology, other fields and subjects pertaining to the humanities, methodological, historical and other S1T activities relating to the subjects in this group]

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